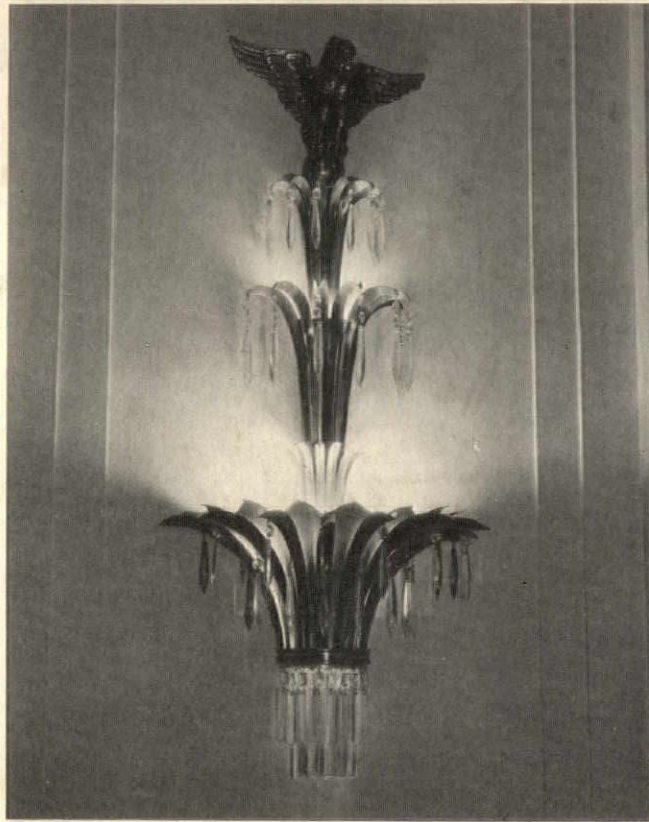


ARCHITECTURE

DECEMBER, 1934



The Challenge to Architectural Education

BY MATLACK PRICE

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RADO

STANDARDIZING
THE BATHROOM

A FORSTER
HOUSE

A NEW APPROACH TO LIGHTING DESIGN

Portfolio: Modern Lighting Fixtures

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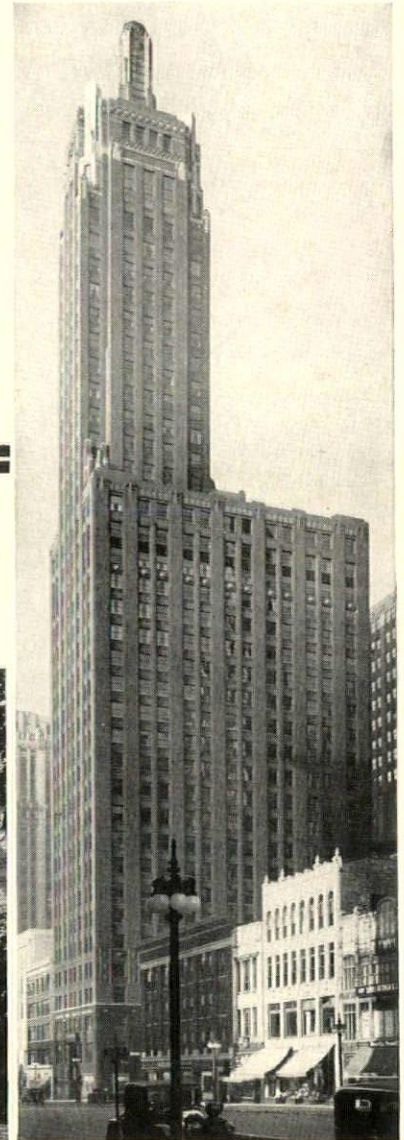
Wrought Iron's long service record in old buildings is reason for its use in new . . . C. HERRICK HAMMOND

AND so, another leading architect states an engineering principle that is standard practice among many architects and engineers throughout the country. We call it "Pipe Prescription" because it follows the simple procedure, first, of analyzing the conditions under which a pipe must serve, and, second, of prescribing the pipe material for those conditions which has already proved, by long service in older buildings and under similar conditions, that it is the right pipe to use.

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fications by many architects and engineers. Illustrated are examples of how C. Herrick Hammond has specified wrought iron for those services where experience and service records prove it right.

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Examples of "PIPE PRESCRIPTION"

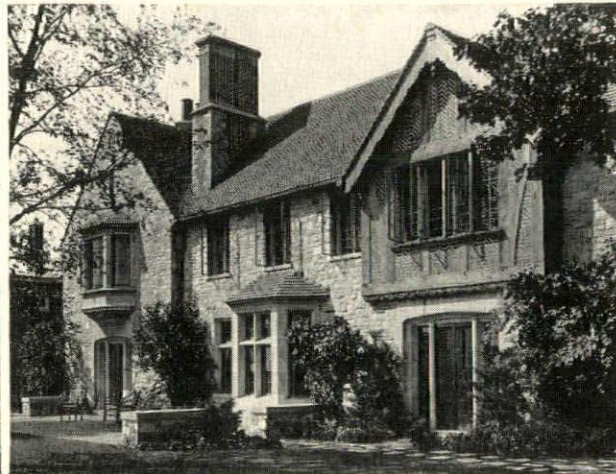
C. HERRICK HAMMOND, State Architect

PERKINS, CHATTEN & HAMMOND, Architects (now dissolved) —

C. HERRICK HAMMOND, now of the firm BURNHAM BROS. & HAMMOND, Chicago



● 124th Field Artillery Armory, Chicago. Perkins, Chatten & Hammond, Architects—C. Herrick Hammond, State Architect. Byers Genuine Wrought Iron Pipe specified for hot and cold water lines, branch wastes and vents and heating return lines.



● Robert B. Whitaker residence, Kenosha, Wisconsin. Perkins, Chatten & Hammond, Architects. Byers Genuine Wrought Iron Pipe specified for hot and cold water and all heating lines.

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THE PROFESSIONAL ARCHITECTURAL MONTHLY

VOL. LXX, NO. 6

CONTENTS

DECEMBER, 1934

Frontispiece: Old Bridge at Avignon
From the pencil drawing by Carl Loven



A New Approach to Lighting Design. ^{PAGE} 301
Eugene Clute notes the passing of an imitative phase, due to our better understanding of illuminating engineering

Boston's Prado 307
A particularly successful example of slum clearance and the creation of a park vista between two historic churches, as developed by Arthur A. Shurcliff, landscape architect

The Challenge to Architectural Education 311
Mattlack Price points out the differences between architectural education needs of a quarter century ago and the present

Architectural News in Photographs 316

Book Reviews 318

Chapel and Crematorium, Copenhagen, Denmark 319
Edvard Thomsen and Frits Schlegel, architects, develop a combination of crematory and permanent memorial repository

Better Practice 323
W. F. Bartels continues his exposition of heating technique

House of George G. Bass, Greenwich, Conn. 327
Another example of Frank J. Forster's skill as an architect in the combination of modern needs with the best traditions of romanticism

Standardizing the Bathroom 337
Kenneth Edmunds presents scale details ready for tracing, comprising practically all of the natural arrangements of the bathroom's elements

Office of Lawrence Wolfe, architect, Pittsburgh, Pa. 341
Mr. Wolfe remodels a typical house-in-a-row

The Reflecting Pool 342
Edwin Bateman Morris muses upon air-conditioning and upon architectural holes-in-one

The Editor's Diary 343

ARCHITECTURE'S Portfolio of Modern Lighting Fixtures 345
A collection of seventy photographs

WHEN CHANGING ADDRESSES, SUBSCRIBERS MUST GIVE FOUR WEEKS' ADVANCE NOTICE AND BOTH THEIR OLD AND NEW ADDRESSES

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ROME PRIZES

THE American Academy in Rome has announced its annual competitions for fellowships in architecture, landscape architecture, painting, sculpture, and musical composition.

In architecture the William Rutherford Mead fellowship is to be awarded, in landscape architecture the Kate Lancaster Brewster fellowship, in sculpture the Rinehart fellowship, and in musical composition the Walter Damrosch fellowship.

The competitions are open to unmarried men not over thirty years of age who are citizens of the United States. The stipend of each fellowship is \$1250 a year with an allowance of \$300 for transportation to and from Rome. Residence and studio are provided without charge at the Academy, and the total estimated value of each fellowship is about \$2000 a year.

The Academy reserves the right to withhold an award in any subject in which no candidate is considered to have reached the required standard.

The term of the fellowship in each subject is two years. Fellows have opportunity for extensive travel and for making contacts with leading European artists and scholars.

Entries for competitions will be received until February 1. Circulars of information and application blanks may be obtained by addressing Roscoe Guernsey, Executive Secretary, American Academy in Rome, 101 Park Avenue, New York.

SOCIÉTÉ DES ARCHITECTES
DIPLOMÉS MEDAL

NEW YORK UNIVERSITY has been awarded the University medal of the Groupe Americain de la Société des Architectes Diplomés par le Gouvernement Français, for the general high quality of work done in the department of architecture of the College of Fine Arts during the past academic year, as announced by Frank Cheney Farley, president of the Groupe.

The medal has been awarded annually since 1920 to the architectural department of the college or university having the best record of accomplishment in the teaching of architecture along the lines followed by l'Ecole Nationale et Speciale des Beaux-Arts in Paris. The medals, designed by Louis Bottee, noted French sculptor, are supplied by the parent society in France and hence are of semi-official character.

Thirty-three schools and departments of architecture in the United States, which follow the methods of l'Ecole des Beaux-Arts, are eligible for the award. Records of students in the competitions of the Beaux-Arts Institute of Design are used as a guide in determining the recipient of the University medal.

Institutions which have previously received the award are University of Pennsylvania, 1920; Carnegie Institute of Technology, 1921, 1928; Massachusetts Institute of Technology, 1922; Columbia University, 1923; Yale University, 1924, 1926, 1933; Catholic University of America, 1925; University of Illinois, 1929; Harvard University, 1927, 1930; New York University, 1931; and Princeton University, 1932.

ST. LOUIS'S MODERN
HOME EXPOSITION

THE St. Louis Modern Home Exposition, comprising four hundred exhibits and a dozen "shows within a show," is to be held in the Exposition Hall of the new St. Louis Municipal Auditorium, January 5 to 13. The exposition was originally scheduled to be held in November, but was postponed to the later date at the request of the Federal Housing Administration.

MODERN HOUSING
INSTITUTE

DEAN E. RAYMOND BOS-SANGE of the New York University College of Fine Arts has announced that more than a score of housing experts, architects, and authorities on city planning will cooperate with the department of architecture of the University in presenting a Model Housing Institute.

The Institute will be under the direction of Dr. Carol Aronovici, director of the Housing Research Bureau of the City of New York, and will extend from November 26 until March 11. The number of students admitted will be limited to forty.

Experts in various fields who will cooperate will include: Frederick Ackerman, technical director of the New York City Housing Authority; Mrs. Elizabeth Bussing, manager of several large New York apartment houses; Harold Buttenheim, editor, *American City*; Henry Churchill, one of the founders of Housing Study Guild of the City of New York; Abraham Goldfield, chairman of the

Housing Committee of the American Association of Social Workers; George Gove, executive of the New York State Housing Board; Arthur Holden, chairman of the Land Utilization Committee; S. Clements Horsely, authority on modern building materials; Stanley M. Isaacs, authority on legal aspects of housing; Robert D. Kohn, former president of the A. I. A. and first director of the Housing Division of the National Reconstruction Administration; Charles Lamb, member of the Slum Clearance Committee of New York; Albert Meyer, chairman of the Housing Study Guild of New York; Lewis Mumford, author and critic; Bernard J. Newman, member of the Philadelphia Housing Administration; Ira S. Robbins, attorney for the New York City Housing Authority; R. H. Shreve, executive director of the Slum Clearance Committee; Clarence Stein and Henry Wright, joint architects of the Sunnyside development in Queens and Radburn, N. J.; Ralph Walker, chairman of the New York Chapter of the A. I. A., and chairman of the City Planning Committee for the City of New York; Coleman Woodbury, director, National Association of Housing Officials; Roy Smith Wallace, executive of National Recreation Association.

POWER SHOW

THIS year brings the Eleventh National Exposition of Power and Mechanical Engineering, held in Grand Central Palace, New York City, December 3 to 8. The Power Show is held at the same time as the annual meeting of the American Society of Mechanical Engineers.

PRINCETON-YALE ARCHITECTURAL COMPETITION

PRINCETON and Yale held their annual architectural competition which was won this year by Yale. Wendell S. Clough of Barre, Vt., a third-year student in the Yale School of Fine Arts, won the leading award, First Mention Placed. Princeton won three First Mentions with R. W. Olson, E. B. Willauer, and R. L. Worcester. Yale won two First Mentions with Bernard Beck and Henry C. Flagg.

Each school submits ten problems to a jury composed of three architects and one member of each faculty. The subject chosen for this

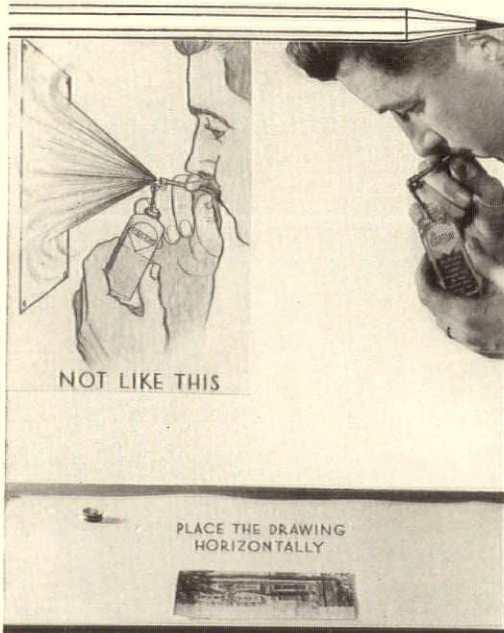
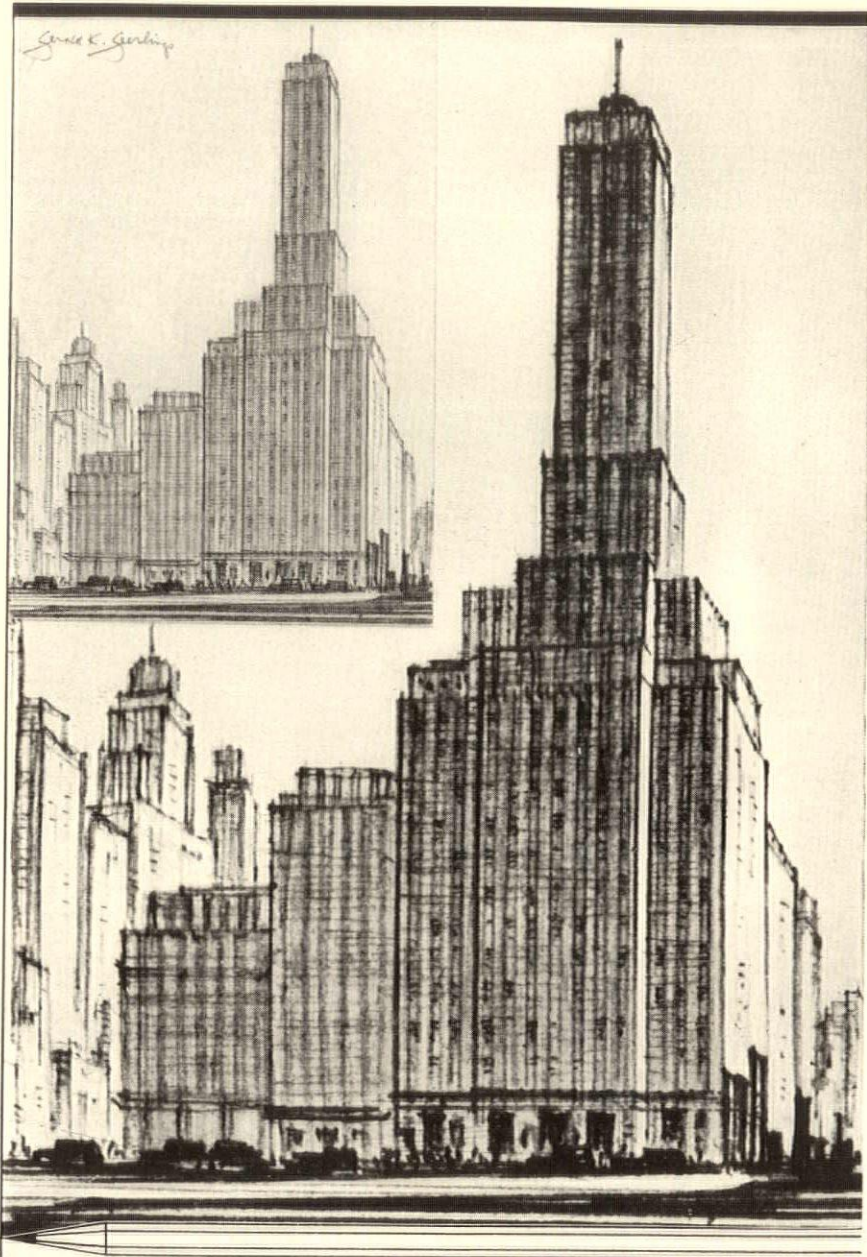
(Continued on page 12)

LARGE PHOTOSTATS OF SMALL DRAWINGS

THE ORIGINAL DRAWING (in the upper corner) is reproduced at the size it was made by Gerald K. Geerlings. Only a B Microtomic Van Dyke pencil was used, and no repointing was necessary from start to finish. On the use of enlarged photostats from small sketches Mr. Geerlings says:

"When you have determined the 'envelope' of a building it takes a few moments only to set up a perspective which is two or three inches high. If you draw up several renderings at small scale on tracing paper over this perspective 'set-up,' and then have enlarged photostats made, you will find it a great time-saver. You will thus be able to submit not only several schemes instead of one laboriously done, but each member of a building committee can have a set. Compare the drawing with the photostat, both of which are reproduced at their original size. Note how gray pencil lines can be forced to become very black."

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a small quantity at a time, permitting it to dry thoroughly before puffing again. It is poor economy to use anything but first-class fixatif.* Adjust your blower so that a fine, even spray is produced. Use a clean cloth to test for smudging."

—Gerald K. Geerlings

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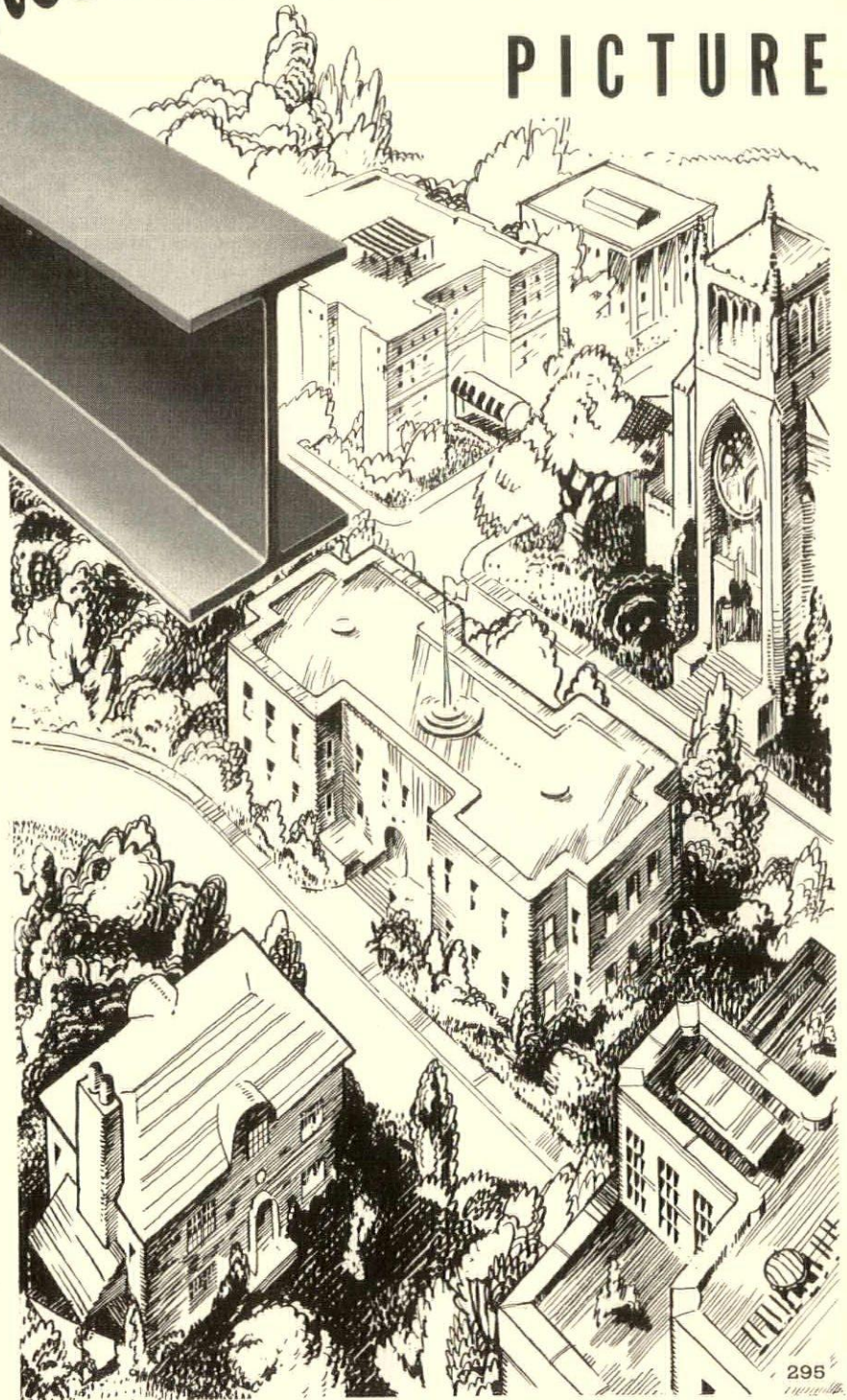
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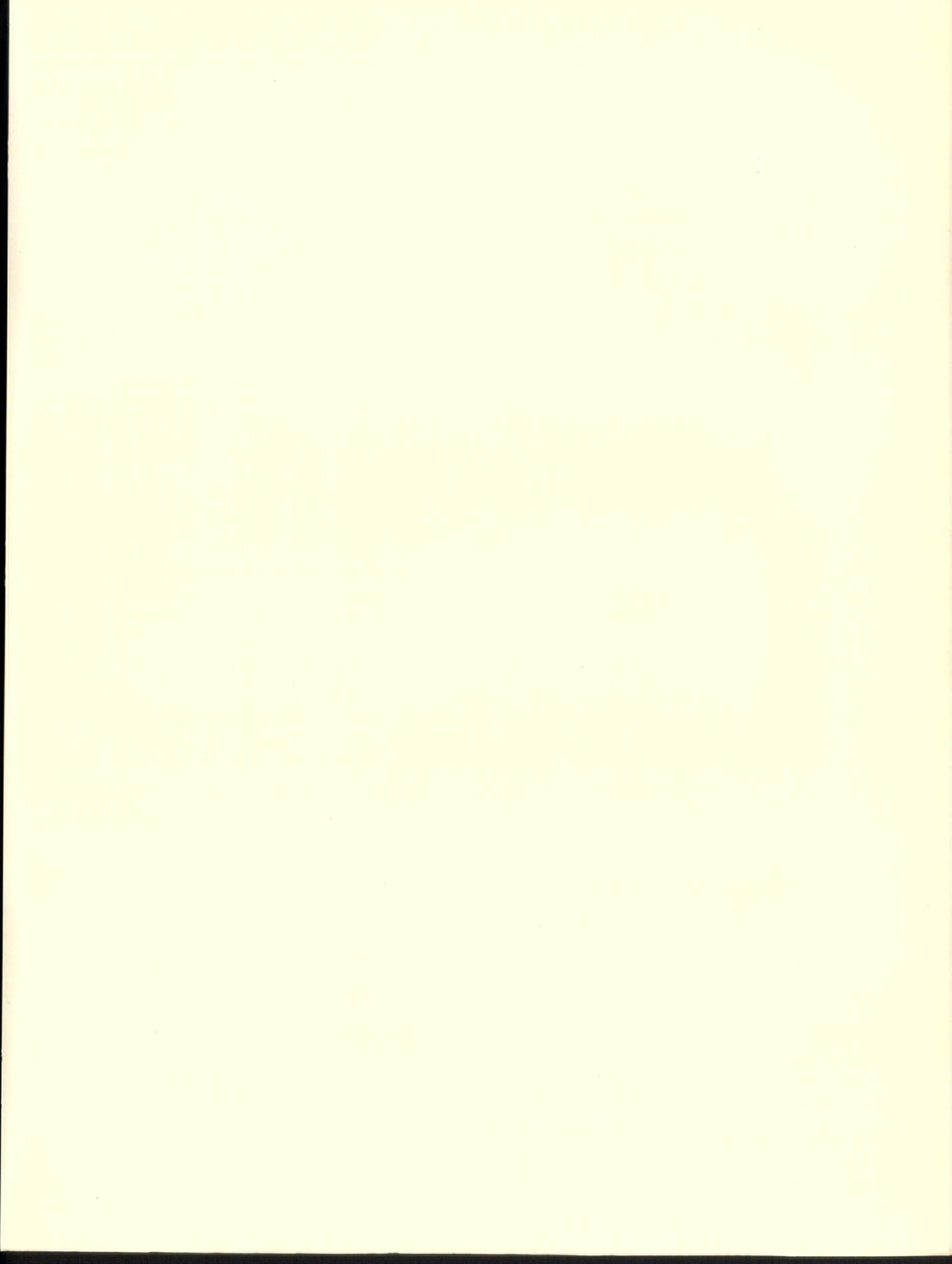
Youngstown
Youngstown

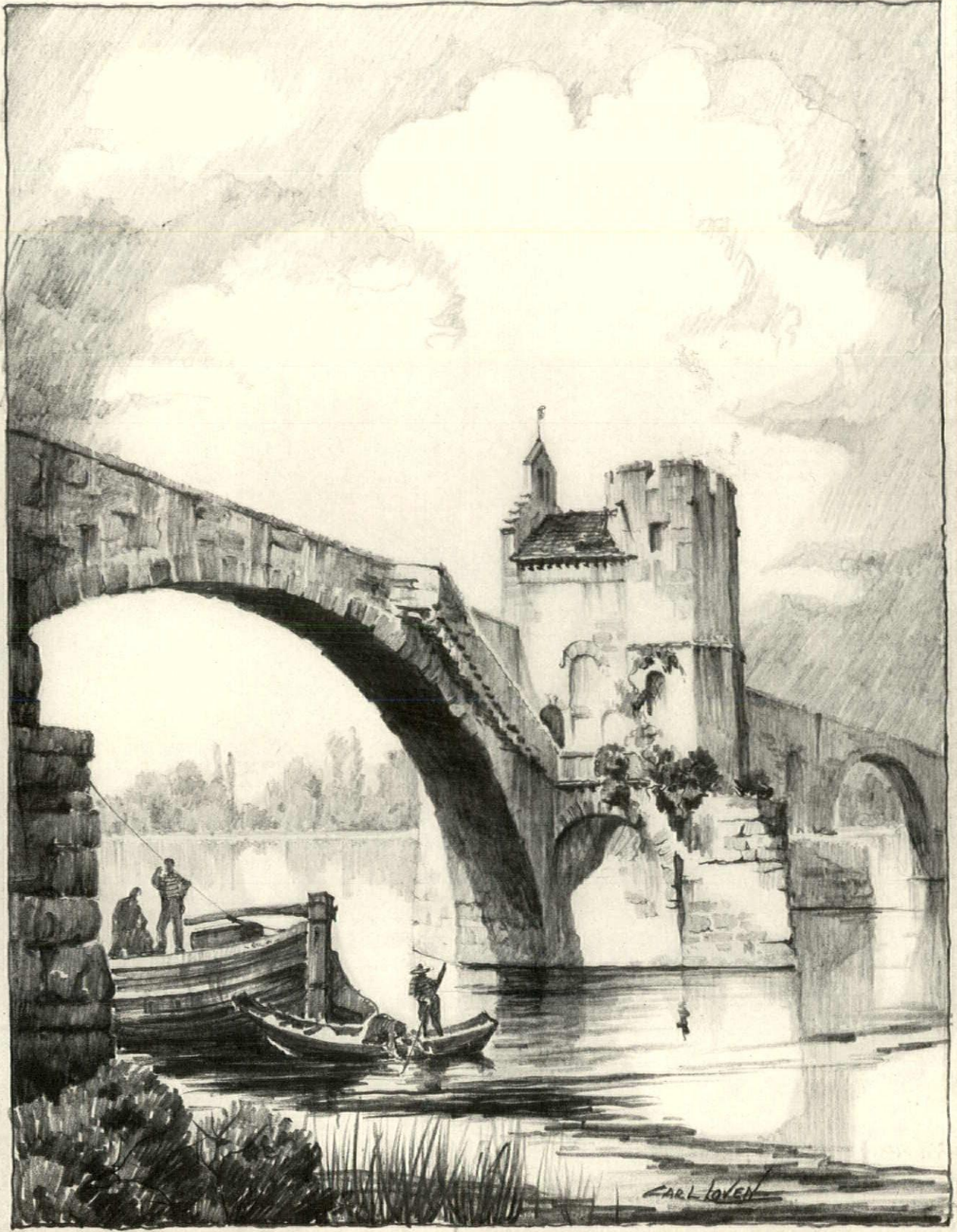
Contributing to the permanence of this beauty is Youngstown Buckeye Conduit in the electrical installations and Youngstown Pipe in the plumbing and heating installations.

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OLD BRIDGE AT AVIGNON
From the pencil drawing, 7 x 9¼ in., by
CARL LOVEN

« ARCHITECTURE »

A New Approach to Lighting Design

By Eugene Clute

SOME very interesting examples of a new method of designing lighting fixtures have made their appearance recently, pointing the way to the solution of the problem of designing for electric light and at the same time securing decorative suitability. This method consists in determining the general form of the fixture in accordance with what may seem to be the best means of meeting the practical requirements, but modifying the form and adding ornamental detail to give the desired decorative character.

This is the reverse of the traditional procedure, which is to start with a form derived from an earlier means of lighting, such as the branched chandelier intended for candles, and to introduce electric light as a concession to practicality.

It is a stride beyond engineering design and functionalism toward the decorative. In this method, both the practical and the esthetic elements of design are given due consideration, the former taking the lead and the latter giving the requisite character and beauty.

This new approach to the designing of lighting has come about as a result of the efforts of many designers to use electric light properly and with the best possible decorative effect, keeping pace with the improvement in electric lamps and with the trend of thought and taste in architectural design. It has not been arrived at consciously, or taught, or agreed upon, but it is a fact. It seems desirable to bring out the underlying principles of this method, and this can best be done, probably, by a brief consideration of the current methods of design and an examination of some of the outstanding examples of the ways in which this new method is working out in practice.

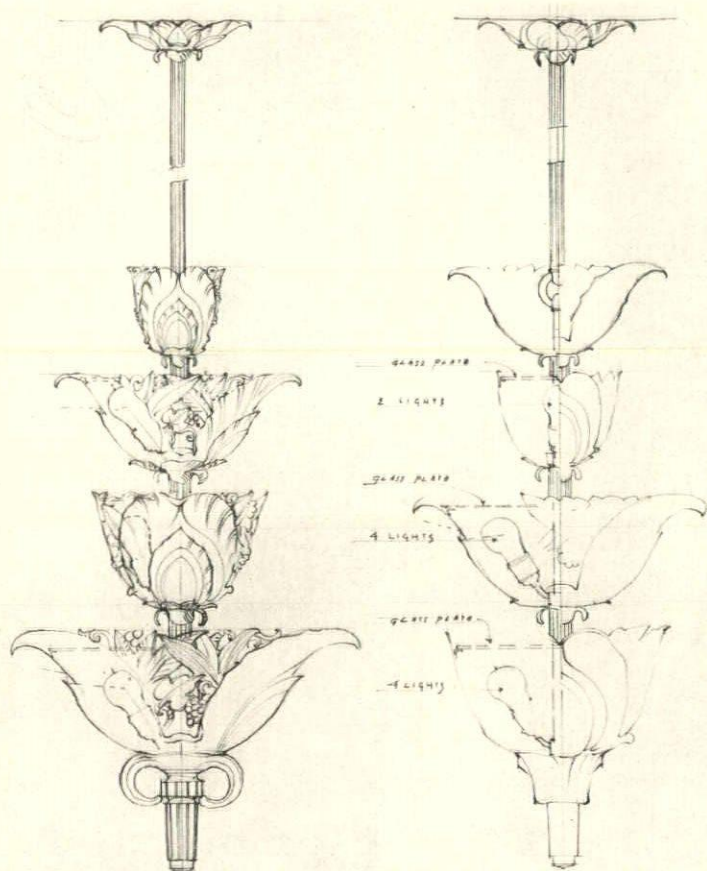
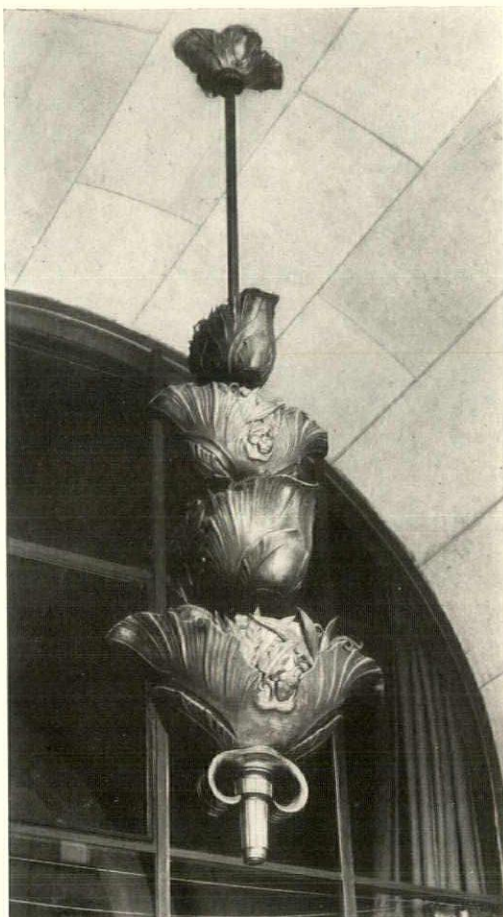
It is only natural that designers should have first taken the line of least resistance by simply placing electric bulbs on the arms of candle fix-

tures or enclosing the bulbs in lanterns. This did not disturb their habit of designing and left the period style designs practically unchanged, especially since the expedient of setting the bulbs on the tops of imitation candles was promptly adopted.

These electric candles, as commonly employed, have never been convincing, however, and the hard mechanical form of the lamp bulbs was always out of harmony with the sensitive lines and forms of good period fixtures. Bulbs made in the form of a twisted flame are no better, for they are clumsy and inharmonious. The smaller plain pointed electric lamps are neater, but leave much to be desired. Concealing the bulbs under shades of silk or other material has not proved to be satisfactory, for such shades are neither architectural nor truly decorative. They have always been disliked by most architects as fussy additions, though they have been favored often by woman clients.

The most serious fault with the adaptation of candle fixture designs to electric light is that it fails to recognize one of the essential differences between electric lighting and candle lighting—the fact that even a single electric bulb of ordinary wattage gives many times as much light as a candle flame. Chandeliers for candles have numerous branches because many candles were needed to produce fairly adequate illumination. When electric bulbs replace candles on such a fixture the result is dazzling and garish. Even a single bare bulb is a source of concentrated light of too high intensity for the eyes. Unless the lamps are farther from the eyes than they usually are in a room, they should not be bare; nor does the frosting of the bulbs afford sufficient protection.

At this point it may be well to note a method that is employed, where the cost is not a deterrent, to overcome these difficulties while using electric light in a fixture of purely historic de-



Indirect lighting pendant designed by Walter W. Kantack for a recessed entrance to French & Co., antiquarians. The fixture is of hand-wrought brass repoussé work, gold plated

sign. This consists in using electric candles made of wax with runs of wax down their sides and miniature electric bulbs at their tops, each bulb wrapped in a piece of cat-gut twisted into the shape of a flame. These lamps, though somewhat brighter than candles, are of very low power and the effect of candle lighting is well simulated. This is probably the limit of ingenuity and painstaking care in maintaining consistently the appearance of historic truth in the face of modern conditions. It does skilfully and thoroughly what ordinary adaptations of candle fixtures attempt crudely and half-heartedly.

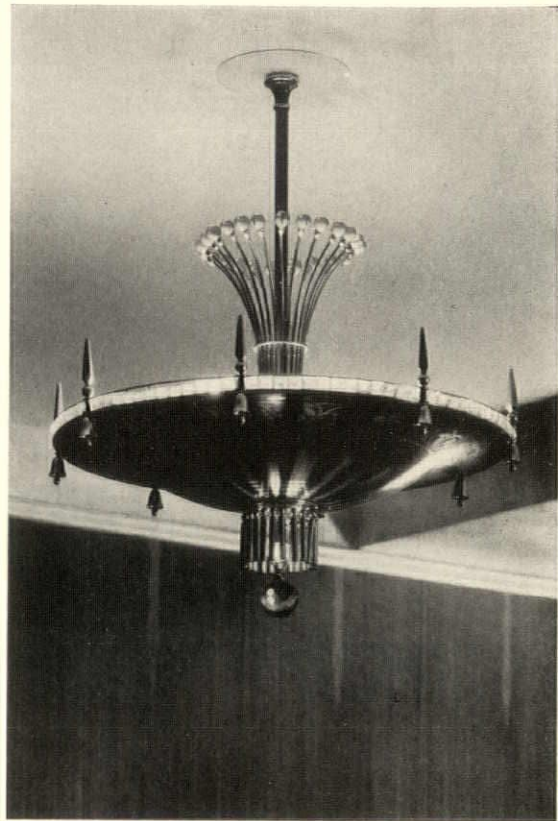
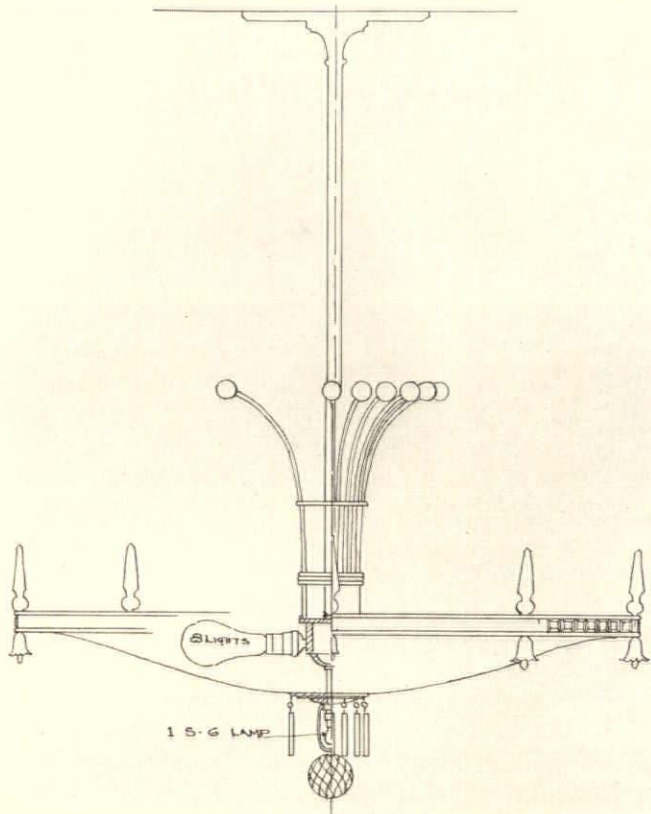
In addition to being wrong in principle, it is prohibitive in cost for most people. This refinement in the adaptation of candle fixtures commands admiration as a tour de force, but it has no bearing upon the solution of the problem of lighting-fixture design.

There is another method of preserving the purity of an historic interior treatment unmarred by the appearance of electric lamps. It consists in designing a crystal chandelier with cleverly disposed metal parts in which small elec-

tric lamps are concealed, casting their light upward upon the crystals and diffusing a soft glow of illumination. This avoids the introduction of any anachronistic feature and it displays the beauty of the fixture, but it is open to the objection that the effect is unnatural. Such a fixture, though it is apparently not lighted, sparkles with light and it actually is the light source. These contradictions would seem to be disturbing.

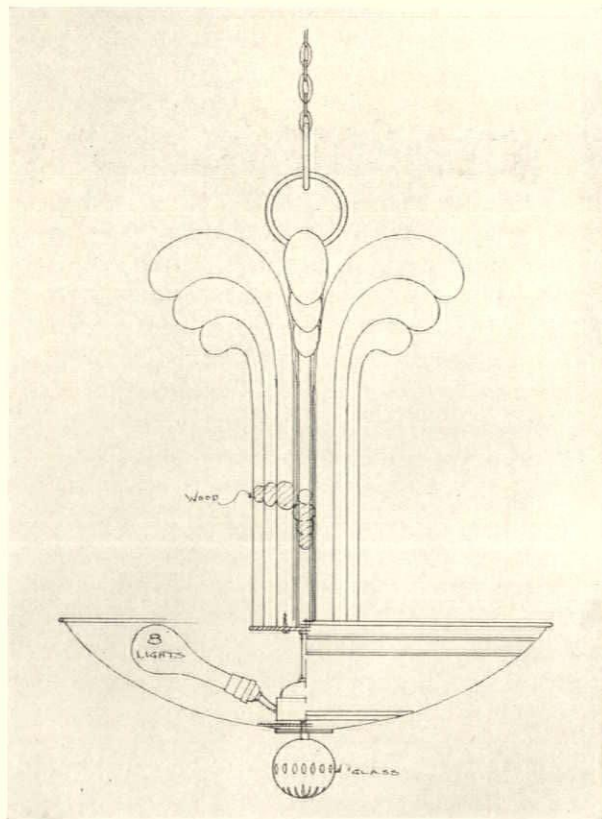
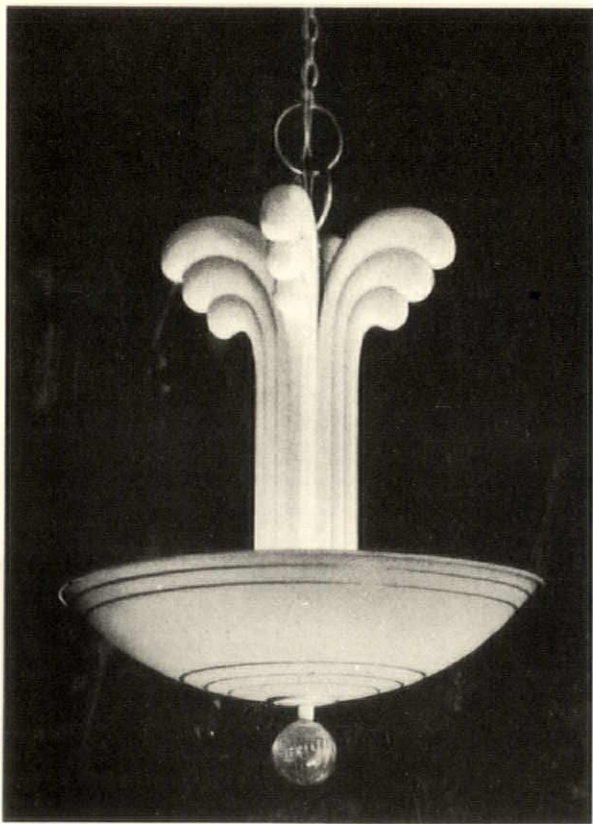
In short, the traditional method of designing lighting fixtures, by adapting other types of light sources to electricity, either disregards or artfully dodges the problem. It has continued because the better fixtures of this kind have in themselves the beauty and good decorative character of the fully developed older styles, and their shortcomings in other respects have been overlooked. So long as our architecture remained a veneer of historic forms denying the actual modern construction, such lighting fixtures were consistent with the architecture. But the past few years, as we all know, have seen profound changes in the practice of design.

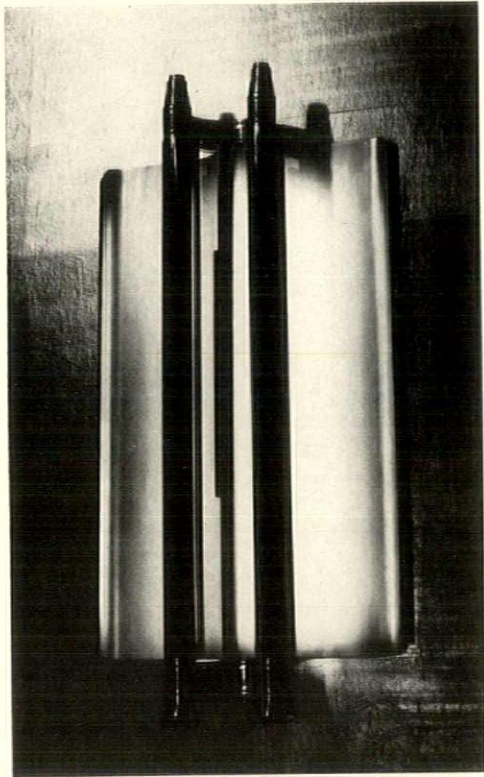
While the adaptation of candle fixtures and



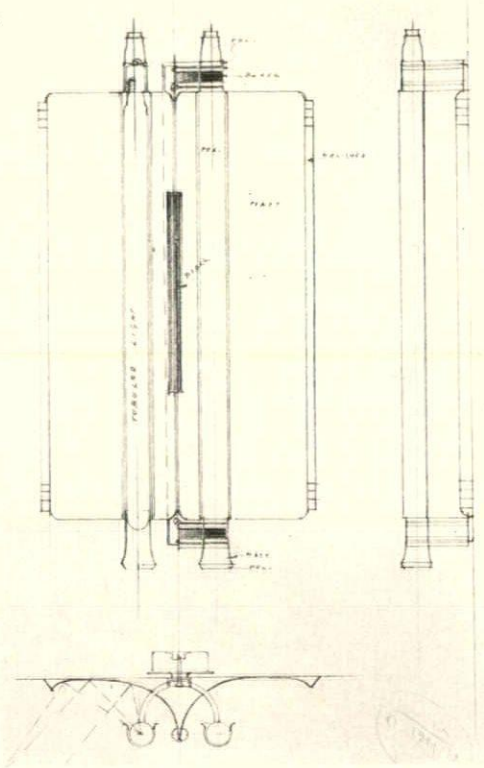
*A lighting fixture of bronze and glass in the bar of Hotel Roosevelt, New York City.
Designed and executed by A. Ward Hendrickson & Co., Inc.*

A fixture in the Restaurant Henri Charpentier, French Republic Building, Rockefeller Center. Designed and executed by A. Ward Hendrickson & Co., Inc.





Directed-indirect wall light, designed by W. A. Weldon of Kantack, Inc., in which the rays from long tubular bulbs are directed against a matt-surfaced metal reflector



lanterns has prevailed in this country, there has been a constant endeavor on the part of many architects and designers in Europe to design fixtures essentially electric and of satisfactory decorative character. This has been going on ever since the end of the nineteenth century, with but indifferent success in most instances.

In the early days of the modern style movement, some thirty to thirty-five years ago, European designers took the electric drop-cord as the basis of their lighting-fixture designs. Surely, a light-giving glass bulb hanging on the end of a wire was characteristic of electric illumination and of nothing else.

Austrian architects grouped these drop cords together, letting them hang straight down from a square plate upon the ceiling and uniting them below with a square horizontal frame. The bulbs were bare, usually, and a design touch was often supplied by a metal disc or flange, just above the bulb, where it entered the socket. At about that time, French designers were using the drop-cord slanting down from the ceiling to the ends of the branching arms of a fixture body of cast bronze; this in a modelled Art Nouveau design of sinuous lines from which the bulbs dangled. Often the cords were crossed or formed into a decorative network. Then the Austrian and German designers began to favor the single straight cord or fixture stem, with a bulb or group of bulbs at its lower end, surrounded by a shirred petticoat

shade of fabric—a hackneyed expedient that has contributed so generously to faded color schemes and dust.

The French designers took to experimenting with planes of glass with lamp bulbs back of or above them. So, when a large number of Americans became interested in modernism through the Exposition of Decorative Arts in Paris in 1925, our designers began turning out fixtures of glass planes. Some of them were good, but most of them were very bad.

Ever since there have been illuminating engineers, they have been talking about the better use of electric light and trying to bring it about. But their contribution to lighting-fixture design and to decorative lighting in general has been almost nothing until quite recently. This has been so because the illuminating engineer has, naturally enough, lacked an adequate knowledge of architecture and interior decoration, and the men possessed of this knowledge have not often cared to avail themselves of his help. Wedded to the traditional method of fixture design and shocked by the engineer's esthetic deficiencies, they have largely ignored him. During the past few years architects and lighting-fixture designers generally have been more concerned with the mannerisms of European modern designers and with fanciful creations of their own devising than with the proper use of electric light. Now, however, there are

many evidences of a disposition on the part of designers to get down to fundamentals in lighting-fixture design, not forgetting the decorative element.

The doctrine of emphasized functionalism, though it falls short in practice, has had a good effect in that the passing interest in it has helped to bring about a better recognition of engineering considerations as among the essential bases of artistic design.

Then, too, the swing of modernism toward historic sources of design inspiration, without the abandonment of any of its really good principles, more particularly in the manner known as the "Classic Modern," is providing an acceptable type of design to replace essentially traditional interior architecture and decoration.

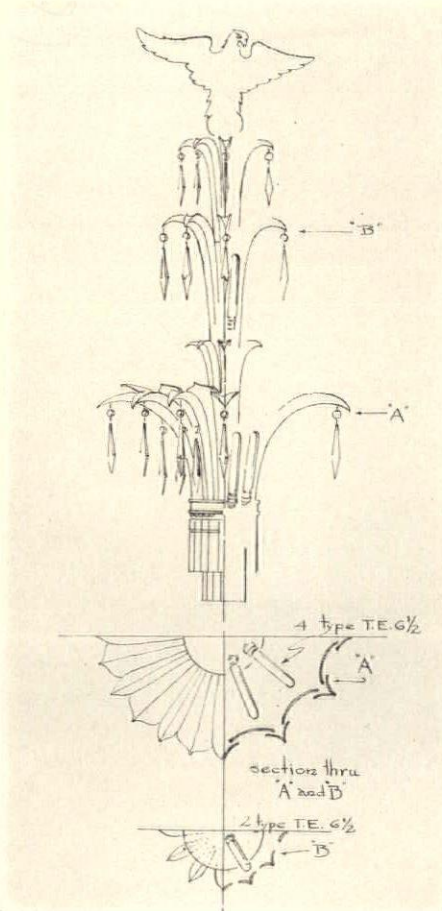
The net result of all of these things, so far as the designing of lighting is concerned, is the new approach to the problem, which may perhaps be described as functionalism plus decoration, often with more or less of the historic element.

The main controlling factor in present-day lighting-fixture design is the brightness of the modern electric lamp, against which the eyes must be shielded. Exposed bulbs on imitation

candles or otherwise employed are undesirable because this protection is not afforded. A cylinder of frosted glass or other translucent material surrounding the lamp meets this requirement, is honest and can be brought into harmony with period design. It is the logical successor to the electric candle. There is no need of arbitrarily avoiding the form of fixture with branching arms simply because candle fixtures had such arms. They may just as well hold electric lights. But the superiority of electric lamps over candles as light sources should be kept in mind and the lamps limited accordingly in number and wattage.

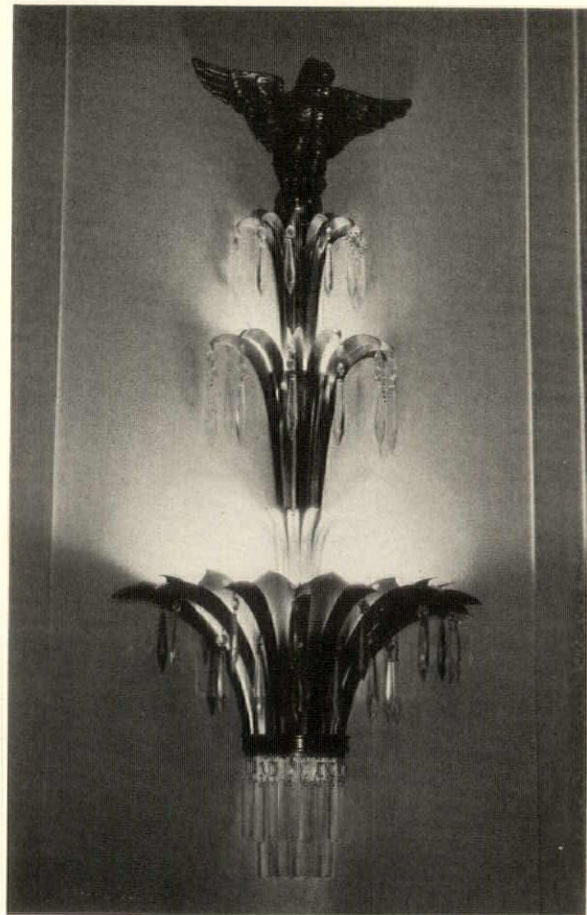
Since the larger lamps of higher wattage are relatively more efficient than lamps of lower wattage, it is reasonable to use these larger lamps and to design accordingly. This means some form of indirect lighting, usually from a fixture which shields the lamp with an opaque reflector, directing the light as desired.

Indirect lighting is rapidly becoming something very different from the sort of thing it has always been. It does not need to be crude and destructive of the charm of interior architecture and decoration; the light sources that produce it



Drawing by courtesy of Cecil K. White, Inc.

Delano & Aldrich, architects, collaborating with Cox, Nostrand & Gunnison as craftsmen, produced this side-wall fixture for the American Red Cross Building, New York City



can be excellent in decorative design. Most of the lighting fixtures shown herewith are for indirect lighting.

There are many ways in which indirect lighting can be accomplished. It is not necessary to convert the ceiling into a too bright expanse of white and rob all the objects in the room of the proper expression of their forms, through the elimination or reversal of shades and shadows. Indirect lighting installations have done this for so many years that these faults are associated in our minds with this kind of lighting. As a matter of fact, an installation is now in progress in which the ceiling will be in semi-darkness, and there are many examples of indirect lighting that make very effective use of different intensities and of well-handled light and shade. Light may be reflected from the walls or from the ceiling or from special reflecting surfaces forming part of the fixtures. For example, in one of the fixtures shown here light from tubular lamps in vertical reflector troughs is projected upon the back plate of the fixture, which is so designed as to distribute it mainly in a horizontal direction. This is what is known as directed-indirect lighting, a coming type. There is also semi-indirect lighting and direct-indirect

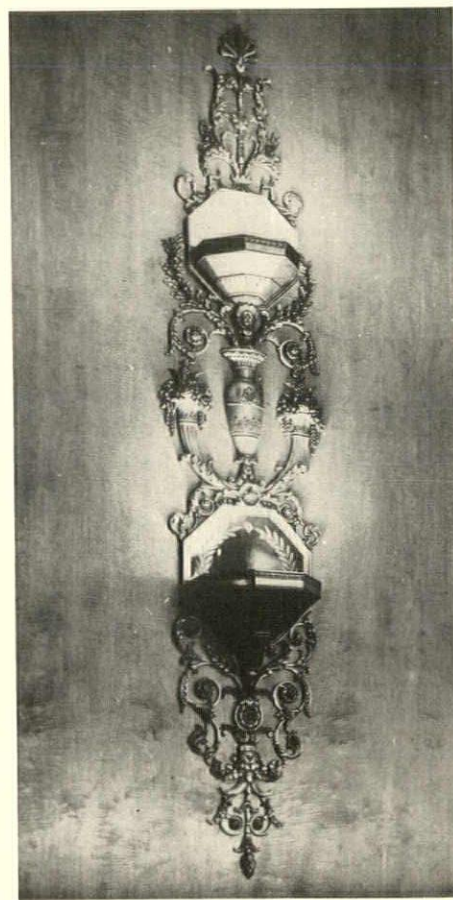
lighting. The crudity with which it has been employed has done an injustice to the possibilities of indirect lighting and retarded its acceptance for a quarter of a century or more. But that is becoming a thing of the past.

The lack of good decorative design in indirect-lighting fixtures was also unfavorable. For one thing, the source of the light was not properly announced. The lighting unit was concealed in an oil jar, a flower pot, or a half-urn on the wall, and one was left in some uncertainty as to the source of illumination. Now, care is often taken to enliven the fixture itself with light from within. Sometimes this is done by using overlapping leaf forms so arranged that a little light is received by the outer surfaces of the inner leaves, or louvers are arranged to catch some light. There are a number of other ways in which this can be done: for example, by edging the bowl of the fixture with a row of crystals.

The progress that has been made in the past nine years, more especially in the past five years, is amazing. In 1925 this country was not represented at the exposition in Paris, for it was felt that we had nothing to show. Now, America is rich in work in the arts, and may well be regarded as the leader in decorative lighting.



One of two large pendant fixtures, about 8 feet in length, giving the main illumination in the Empire Dining-room of the Waldorf-Astoria, New York. Schultze & Weaver, architects, collaborating with E. F. Caldwell & Co., Inc.



Side-wall fixtures such as this furnish supplementary light for the same room. Schultze & Weaver, architects; E. F. Caldwell & Co., Inc., craftsmen

BOSTON'S

MADE POSSIBLE BY THE

ARTHUR A. SHURCLIFF,



Paul J. Weber

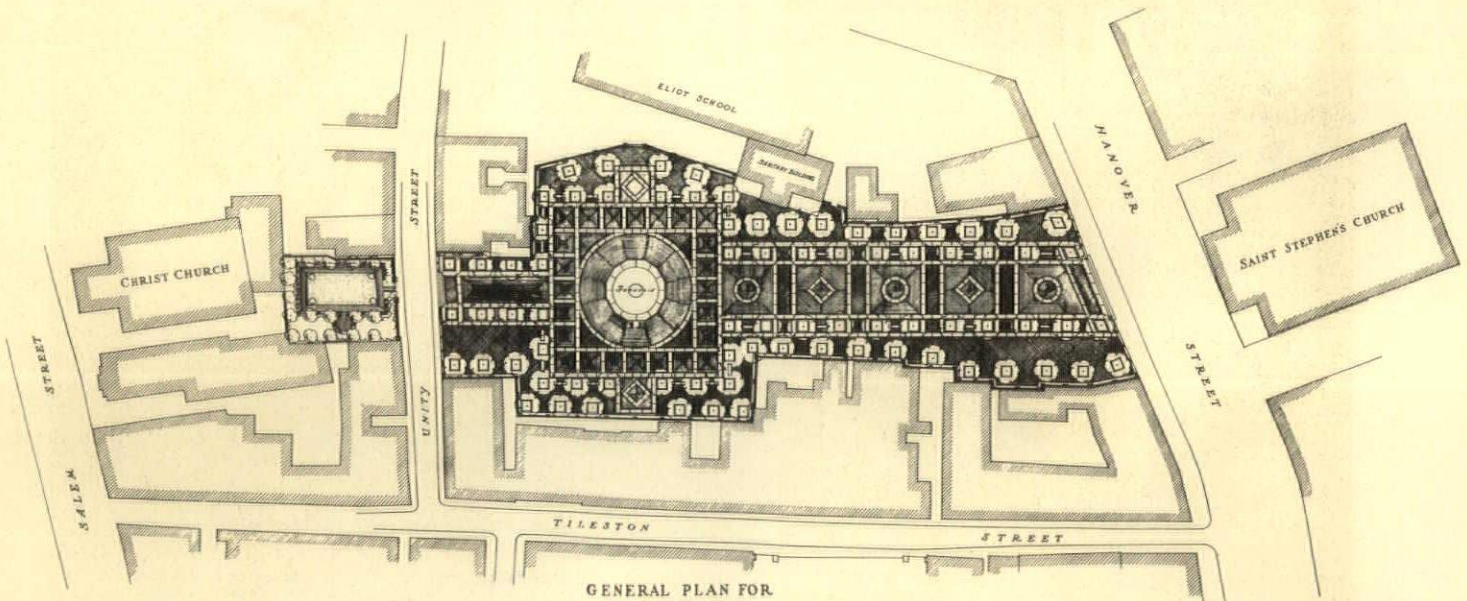
PRADO

GEORGE ROBERT WHITE FUND

LANDSCAPE ARCHITECT

The Prado was built to provide a pleasant and shady open space for the inhabitants of Boston's North End, and at the same time to open up a vista between two of Boston's historic churches. The Prado extends over an irregular space, as shown by the plan below, between Christ Church and St. Stephen's Church, a distance of four hundred eighty

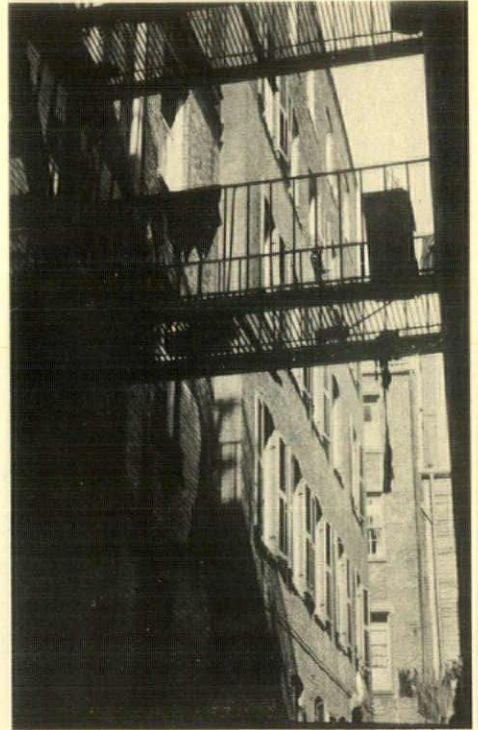
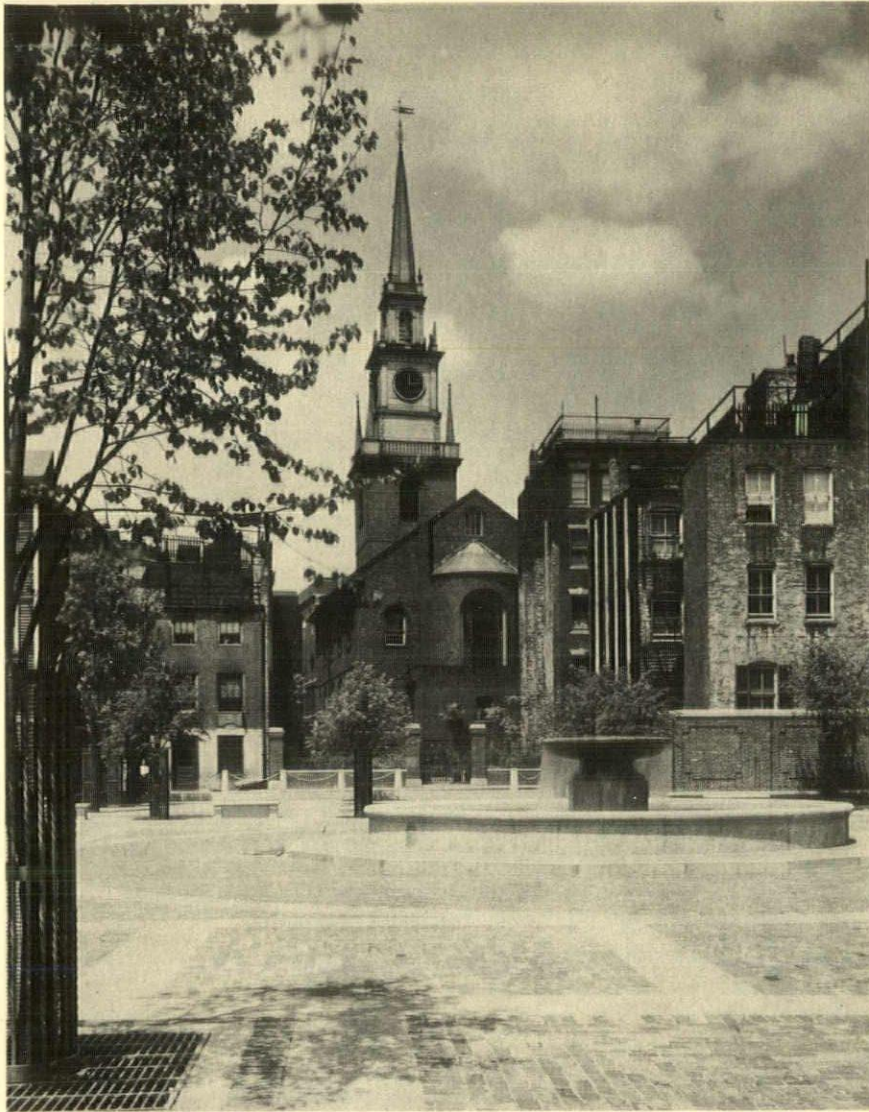
feet. At its widest point it measures eighty-five feet. Most of this land was covered with tenement houses and stores. Altogether seventeen houses were purchased and torn down. The illustration at the left shows Christ Church. For the pavement the landscape architect has used brick, with bands of bluestone to form a pattern



GENERAL PLAN FOR
- THE PRADO -
FROM CHRIST CHURCH TO ST. STEPHEN'S CHURCH.
BUILT BY
THE GEORGE ROBERT WHITE FUND

SCALE OF FEET
0 10 20 30 40 50 60 70 80 90 100

◀ ARCHITECTURE ▶
DECEMBER, 1934



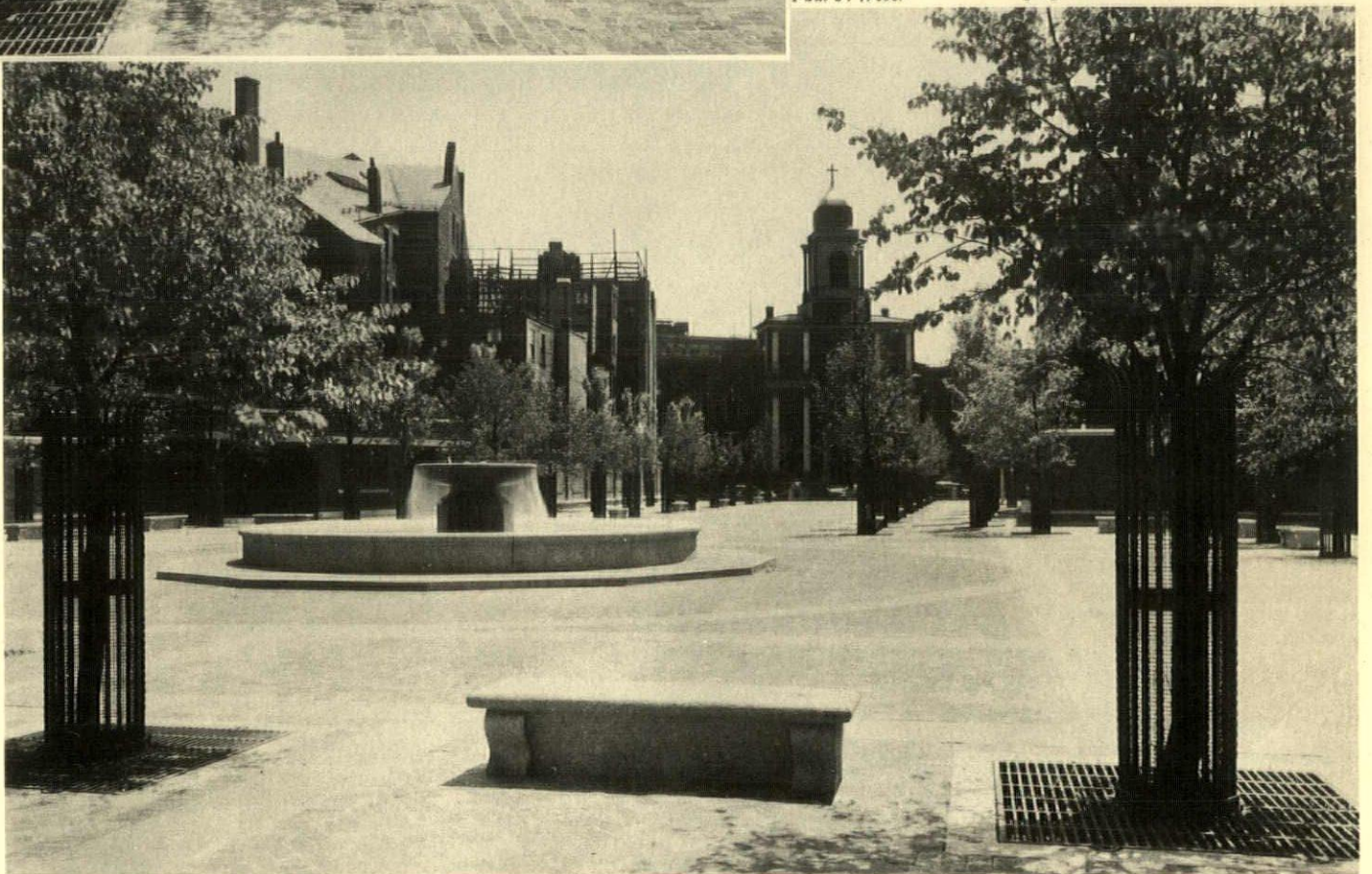
Sidney N. Shurcliff

This is what the Prado was before demolition started in October, 1933

In the foreground is a granite fountain measuring thirty feet in diameter. The whole pavement is laid on a concrete slab

Shade is provided—and it will be increased—by forty-seven European linden trees and thirty-one Lombardy poplars

Paul J. Weber





Sidney N. Shurcliff

A glimpse of St. Stephen's main entrance through the tenement houses that formerly stood on the site

A nine-foot wall of old brick surrounds the entire Prado, with a continuous stone seat on the inside

The Prado as seen from St. Stephen's Church, looking across Hanover Street in the foreground

Paul J. Weber





Paul J. Weber

The view from Christ Church over the Prado. The church has its own small garden, entered through the wrought-iron gates. Unity Street divides it from the end of the Prado

« ARCHITECTURE »

DECEMBER, 1934

The Challenge to Architectural Education

By Matlack Price

IN an age when so much established precedent in so many fields is being challenged, re-examined, and made over, it should not be surprising that architectural education finds itself in need of a new orientation, a new set of ideas. The challenge comes alike from today's students and from their prospective employers.

In my own student days, which were thirty years ago, architecture was architecture—and there was no question about it, or about how it was to be studied. Everything about it was predictable, known in advance. There was no question about what the architect was going to do: it was only a matter of how well he was going to do it. Architectural design was measured by taste and scholarship, and the training was planned and administered accordingly, changing not at all from year to year. Originality and imagination were frowned upon, and there were more students and young architects who admired Louis Sullivan and Frank Lloyd Wright, in 1900, than were encouraged to admit it, or dared to, at least in the company of their elders and betters.

We were told, and with ample sanction in fact, that we should hope to grow up and be (if such aspiration were not too high) like McKim, Mead & White, Charles A. Platt, Carrère & Hastings, Cass Gilbert, Arnold Brunner, and Daniel Burnham.

McKim, Mead & White were the law and the prophets, and rightly so, for had they not rescued the fair goddess Architecture from the slough of ignorance and folly into which she had fallen, and placed her high upon a finely scaled Renaissance throne?

On the chaste brick façade of Nelson Robinson Hall, where architecture is taught at Harvard University, stone tablets bore (and still bear) the names of BRAMANTE, BRUNELLESCHI, and others of the great hierarchy of architectural law and order, of architectural respect for classic precedent.

What has happened that these names no more evoke reverence, or even respect in the modern architectural student? Was the architecture that we learned in the decade 1900-1910 a false thing, or useless, as sterile and out-moded as eighteen-year-old students today tell us that

it is? And if this were indeed so, are these same students endowed with such amazing critical insight as to discern it? We did not know so much in 1905, could not, that is, pretend to the architectural clairvoyance of today's students, who see McKim, Mead & White as a bungling trio of old pattern-followers. But suppose we put these modern youths on probation for the moment; suppose, even, that we honestly feel that they are aesthetically immature—still there is some serious thinking and some serious work to be done by a few people who know and understand architecture *as a whole*; whose memory, not to speak of their training, extends back—back, at least, prior to 1930. The Empire State Building, and the R. C. A. Building in Rockefeller Center loom high, but they do not stand on the edge of the universe, with nothing behind them but void space. A great many years of architecture lie behind them, but the face of today's architectural student is so naïvely set toward the future that his curiosity will explore only in that direction, for all that he is without a compass or directions.

Whether he deserves it or not, I shall not here attempt to say, but this same young architectural student needs a restatement of the old immutable architectural truths—even though he may not have the wit to demand such a restatement. The profession of architecture and, specifically, the professors and instructors, every faculty of every architectural department today owes him this restatement.

"But that will be hard to do. Who is to do it? Architecture is an established, fixed subject." I do not care how hard it may be, it has got to be done, and quickly. Who's to do it is the immediate problem of every university and architectural school in the country; and architecture, today, however well its background may be established, is anything but "fixed."

This very day, while I am writing this, architectural students are rejecting the old statements and the old truths, demanding new truths that will square with the buildings of the Century of Progress Exposition. It does not matter a particle whether you or I accept those buildings; the students are accepting them and looking to their instructors to tell them something about them that they will be willing to believe.

They may not be told any new truths—for there are no new truths. Statements of values, appraisals—yes—and without fear or prejudices we owe it to the student to sanction, nay, to encourage, the scrapping of many old half-truths. And we may, if strategy be necessary, restate the old truths in such a way that they may appear entirely new—and so be accepted. Later, when mature understanding comes to his aid, the young architect will be able himself to make his own peace with precedent, adjust himself honestly and intelligently to the trends of his time, and face the future with confidence and integrity.



When I studied architecture in that McKim, Mead & White building in Cambridge, adorned with the great names of long-dead architects, I could not have foreseen a day when architectural students would feel that the names and works of the men of the Renaissance in Italy would hold no meaning or value for them.

I could not have foreseen, either, that a day might come when I would find myself in the position of a substitute instructor in architectural design in a school of marked standing and attainment, noted particularly for its output of admirably trained graduates. Last year, however, this was my unexpected opportunity, not to say privilege. It was a privilege, because I might not otherwise have come to know today's architectural student—the architect of tomorrow. I might have gone on thinking of him as not greatly otherwise than “myself when young.” But he is quite otherwise.

There was the initial shock of finding, as a whole, an attitude toward past architecture that ranged from contemptuous indifference to heady resentment that a study of all this “historic junk” should be required at all. Of what possible value could any architecture be without chromium steel? And with this general attitude went an absurd complacency—pathetic, if it weren't annoying—an utterly callow notion that could only be explained by adherence to a notion that architecture really began about 1930—or perhaps 1925 at the earliest (though I doubt if any among those students knew the significance of the French Exposition of 1925)—and that architecture is in the process of culmination in such of its evidences as the Empire State Building, Rockefeller Center, and the work at the Century of Progress Exposition.

It may well be that the profession, the prac-

tising architect in search of draftsmen, have been so preoccupied with the astonishing and subversive changes in our architecture, in our whole architectural philosophy, that they have overlooked the problems involved in teaching the modern manner. They have not, that is, made clearly known to the schools their need of young men trained otherwise than they themselves were trained—trained in a different kind of architectural thinking. Nor, so far as I know, have they given the schools much constructive advice or encouragement. The new Columbia experiment, to be tried out for the first time this year, is perhaps the beginning of a new *rap-prochement*.

It is easy to deplore teaching methods and objectives as antiquated, impractical, obsolete. Most people, in any profession, who take the trouble to criticize the schools at all take this attitude, and many of them become set in the attitude for the unfortunate reason that they are right. Teaching, they say (and, as above, often rightly), is seldom less than ten years behind the march of world trends in its subject—so what is to be expected of architectural teaching, when the most conspicuous evidences of modern expression in architecture have happened largely in the past ten years? No good, certainly, will come of making believe that nothing has changed: *si monumentum requiris, circumspice*.

Educators, no doubt checked by the very real weight of their responsibility, hesitate to change the curriculum. More often than is the case, however, they would do well to begin a change by enlarging their point of view to the extent of re-examining their curricula. Nothing should prevent or delay the *beginning* of change, particularly in teaching, because a complete change is often difficult to put into effect quickly. Years elapse before it may become fully operative.

It would be a comparatively simple matter if nothing needed to be changed but the courses: the major difficulty lies in quickly effecting a corresponding change in teachers' minds and attitudes. In mechanical terms it is, and has always been, a problem in synchronization to adjust the varying speeds of teaching, learning, and the march of events. Teaching in science has long kept pace with scientific progress: it was thought disgraceful to be behind the times, to fail to integrate in teaching the latest development in the laboratory. But the case with architectural teaching, today, is quite otherwise. Since the days of the Italian Renaissance, when

the teachers were also the men who were writing the architectural history of their time, the teaching of architecture has fallen behind the practice: the present vastly accelerated tempo of architectural thought and performance makes the difference between its teaching and practice disturbingly apparent. It is in this that lies the challenge to the schools and universities, rather than in the essential rightness or possible error of the whole doctrine of modern architecture.

I cannot see the question of the abiding merit of modern architecture and design in general as being anything like so important as evolving a system of architectural education and instruction that will endow its students with the vital kind of taste, perception, and discrimination—an equipment which will enable them to understand, direct, and control the trend—any trend. As it is, we are in danger of having our trained younger men mostly trained in so reactionary a mould that they will be unable to adjust themselves to the new architectural ideas, while our untrained younger men will lack the intellectual equipment which they must have if they are to cope with the whole or any part of the modern problem of design.

I am thinking, obviously, of the design of public and business buildings rather than the design of houses, and I am thinking of design rather than of engineering and construction. In this last, as in scientific curricula, new developments, methods, and materials have found their way into the classroom in a better synchronization than is apparent in the design courses.

It is inevitable that the practising architects best able to teach the new architecture are the very men who are too busy creating it to detour into teaching. Here and there significant experiments are being made, as with the tutor system to go into effect in the Columbia Architectural School this year, and the "patron" proposal of the Educational Committee of the American Institute of Architects. Columbia, I read, is farming out groups of students to work under certain assigned architects, because of a growing doubt of the value today of the old Beaux-Arts *projet*, or competition method of training. The new experiment, like anything of the kind (the *ateliers* of the New York Society of Beaux Arts Architects, for instance) must rest on the teaching personality of the architect. At its best, this scheme would give the student the benefits of the realistic and personal training of the apprentice in Renaissance Italy. Inevitably the

success will be attended by the conditions of any plan that depends on the personal equation rather than upon an established and uniform body of educational doctrine. To any given student, the tutor to whom he is assigned cannot but make a vast difference, whether for good or ill.



But what, you may well ask, is to be taught, supposing the architectural curriculum is to be rewritten? Largely, the educator's problem is to define the objectives of modern architectural education and training—first to himself, and then, as early as possible, to the student. Sooner or later the educator must take the student into his confidence—and the sooner the better. If this definition of objective be achieved—and it is of the essence of the whole problem—the answer to the more obvious question: "What shall we keep and what shall we scrap?" will work itself out naturally and realistically. I think it will be found by any one, whether he be an architectural radical or an architectural fundamentalist, that modern education in this field is not so simple as the mere decision to keep this or that architectural doctrine, and scrap this or that which seems "out of date."

What, after all, do we mean by "out of date"? Are we talking in terms of time or of taste? If the first, we are committed to a highly arbitrary procedure, because nearly the whole history of architecture, in common with the other arts, is full of revivals of one kind or another. Isn't much of our modern architecture Neo-Classic, or at least trying to be? Suppose the chapter called Classic is deleted from architectural education as being "out of date," how is our student to design intelligently, or even design at all, in Neo-Classic? He is all too likely to do something that may be "Neo," but which lacks even Classic implications. And so it goes—you are in a dangerous game when you begin to decide that any reputable style or phase of architecture has reached the absolute end of its usefulness, and may be scrapped.

But if you are talking about taste, that is a very different matter, and one far closer to the essence of architectural education than anything so irrelevant as time.

Taste is timeless and universal—or should be—and is the only true guide to architectural excellence. It is difficult to teach, but repays the effort, and if the school takes the stand that "taste" is a thing too vague to teach, why not

at least make the effort to study the evolution of architecture in terms of taste? One difficulty arises, in the scarcity of teachers who have real insight and accurately sensitive perceptions. But in a study of architecture as a humanly conditioned expression of taste, the student would learn at least one very important truth—that most examples of bad taste in architecture, and most eras stigmatized as low in taste, correspond in a way that is more than coincidence with *poor design*.

No sooner does the educator focus his mind upon the real nature and meaning of *design* than he begins to see that here may lie the central necessity of all architecture, and therefore the necessity, lacking which, modern architecture would fail. Because the older doctrine of architecture was one of "adaptation" is an insufficient reason for going on teaching it as though this were still so. And the student, moreover, knows it isn't still so. He may yet want to know, clamor to know, what architecture *is*, but he knows that it isn't what it was, certainly in the matter of externals.

Today the architectural desideratum is creative design. It would be unwise, here, to attempt an examination of the extent to which modern architecture is, in fact, creative: the word conveniently, and with sufficient accuracy, serves as a distinguishing term. But architecture itself, in essence, has not changed so completely as many people suppose. The change is one of emphasis rather than of fundamentals. Yesterday it was scholarship and precedent, today it is daring and imagination—creative design. The important thing is to recognize the differences and the similarities, and to convince the student that the similarities are as much to be studied as the differences.

It is true enough that the change in emphasis in the modern architectural objective calls for a different kind of thinking. It is equally true that today's student will not be capable of doing that different kind of thinking unless he is given a different kind of educational deal. It may be objected that architectural students have *always* been taught "design." Yes—but hasn't it always been "out of the book"? Haven't students been taught to recognize design when they see it (even on their own drafting-boards) rather than given the ability to *be* designers? To train designers is a large order—larger, in fact, than most schools or their instructors have been capable or willing to undertake. The student has been exposed to design as a desirable accomplishment—and the school

hoped that he might, some day, become a designer.

If the editor of this magazine were to challenge me, or even urbanely to suggest, that I might establish my contentions by writing a specific curriculum, I could only feel that it would be a pleasant exercise to do so: in the present article, I can only feel that such a curriculum, in all its detail, might overburden the editor's goodwill and the reader's patience.

For the moment I would like to suggest three things which I would feel to be essential, both objectively and subjectively, as affecting the whole structure of a truly modern architectural curriculum.



1. A new analysis of architectural design, so directed as to rationalize and co-ordinate *precedent* and the new *creative design*. This would perform the tremendously valuable necessity of examining the essential nature of design, and of seeing it as immutable, unaffected by transient fashions.

2. New ideas in the study of style-sources. This department of architectural education is in need of a really intelligent overhauling. Creative design being what it is, there is very little actual origination. For this reason a study of sources as a basis for what is called creative design is of great importance to modern architecture.

There is plenty about the new architectural doctrine, both in theory and practice, that is sound and that represents a real advance, with unpredictable possibilities. Designing in mass, subordination and integration of detail, "functionalism," new materials—the whole vista of future architecture was never more legitimately exciting. But how is today's student to avail himself of the maximum advantages of all these powerful potentials without sound training in *design*—far more basic and vigorous than was ever needed by his father?

3. New techniques in teaching architecture. Too much architectural teaching has been of a kind to create in the student's mind the idea that all good architecture is something that *was*, hallowed by the mists of time, and that today's architecture, if it would achieve merit, must be like it. At the same time there was an inescapable implication that nothing done today could equal the old things; it could hope, at best, to be a pallid imitation.

Whether this be true or not (as often enough it may be), it makes a mighty poor doctrine to

teach young and ardent architectural students. Some of them simply don't believe it (and tell you so); the others don't want to believe it. It is a doctrine that defeats ambition before it has a chance to grapple with architecture in any realistic manner. When I say that today's student—youth being what it is—doesn't believe this, I speak from my experience in my recent temporary sojourn as a substitute instructor. Not that I tried any doctrinaire instruction. Instinct and inclination saved me from any such mistake—but there were plenty of ways of sensing the student attitude.

Looking back at architectural education, as I experienced it, there was a great deal taught *about* architecture, but of architecture itself, very little indeed. We were never allowed to come to actual grips with it. This, again, is a question of emphasis, as well as of the technique of teaching, and it is of the essence of the school's problem today to see that architecture is taught as a *living* subject, not as a body of fact and form embalmed in history's pages.

Given the feeling that architecture is, and has always been, a flow as continuous as a river, synchronous with civilization, enriched with racial cultures, and you have at least a chance of getting the student involved emotionally. It must somehow be got into his blood: he must *feel* architecture, or, as they say nowadays in educational language, he must *experience* architecture. The finest of the new buildings appeal to his emotions: the old ones don't. Somehow, and it is the individual instructor's problem, the old must be dramatized as a means of intelligently appreciating and developing the new.



If the student thinks that Bramante was just an old bird (Italian, wasn't he?) that the professor gave us a spiel about in that dumb History of Architecture course—but the *real* architect is the fellow who could design an Empire State Building—there's something awfully wrong in the teaching technique and in the whole job the school should be trying to do to make the student see architecture *as a whole*. Wrong as the modern student attitude is, I would not lay all the criticism at his door. Granted, the teacher's problem is much more difficult than it was before. Often he must feel that he is vainly marshalling dim battalions of ghost-architects out of a dead past to combat vivid and dramatic realities of the present—but that is not to say that he may not succeed, and,

in succeeding, give his students a far better equipment toward modern design than they could otherwise hope to have.

The unnecessary fallacy at the heart of the battle between precedent and innovation is to allow or admit the idea that there should *be* any battle.

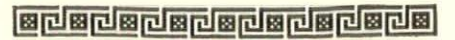
There is such a thing as architectural illiteracy, just as there is illiteracy in speech and writing—and the profession of architecture is no place for illiterates today, any more than it has ever been. The accident of living in the twentieth century confers upon no one a magically revealed culture. I was unable to detect any such miracle, even in an incipient stage, in the class which I studied last winter.

I could not but compare the keen architectural intelligence of many draftsmen with whom I have worked, who, though denied a school foundation of familiarity with the past, had come to know and respect it through their firsthand understanding of the meaning of all architecture. This suggests a definite orientation for my imaginary curriculum, which I shall probably write: if for no other reason than to feel better about the whole thing in my own mind.

There is, for one thing, the wholly unnecessary and stupid conflict between the "practical" and "cultural" orientation of any curriculum. As in the conflict between old and new, the central mistake is to recognize or allow any conflict at all. Among many of the foremost architects of this country I have never been able to perceive that culture and a practical, realistic equipment are mutually exclusive.

It is all very well to say that those who are responsible for architectural education should be "open-minded"—of course: that is an admirable and intelligent attitude at all times in all departments of life. But the open mind, today, needs to be open for the exit of fallacious ideas as well as open to the admission of new ones. Above all, the old ideas need re-examination and restatement. A new liberalism is afoot in the whole educational field, from the progressive schools up to the universities. Harvard University, for example, faces forward under the new leadership of Dr. James Bryant Conant. Others obviously will follow. Dr. Conant said, in his opening address: "When knowledge ceases to expand and develop it becomes devitalized, degraded, and a matter of very little importance to the community. . . . A zest for intellectual adventure should be the characteristic of every university."

And of every architectural school.



Architectural News

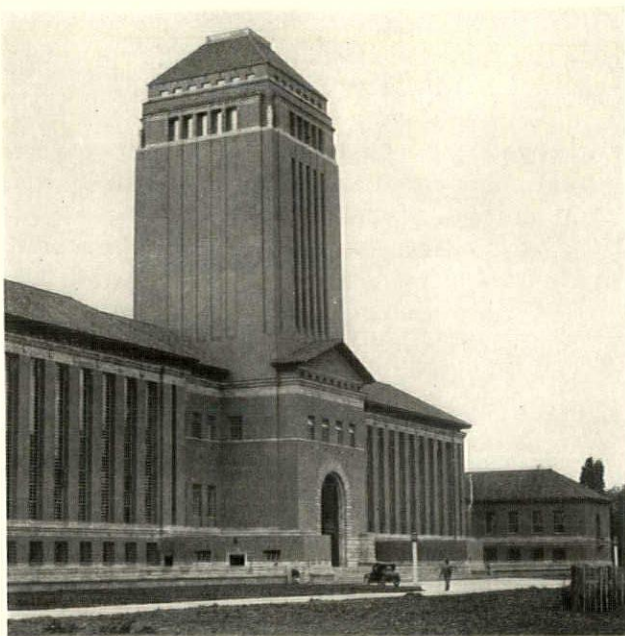
Proposed International Amphitheatre for the Chicago Stock Yards, seating ten thousand. A. Epstein, structural engineer



The Union League Club of Chicago has a new Steel Room with photographic murals of the industry by Kaufmann-Fabry, photographers



"Better Homes in America's" \$9000 model house on Park Avenue, New York City. Roger H. Bullard and Clifford C. Wendehack, architects

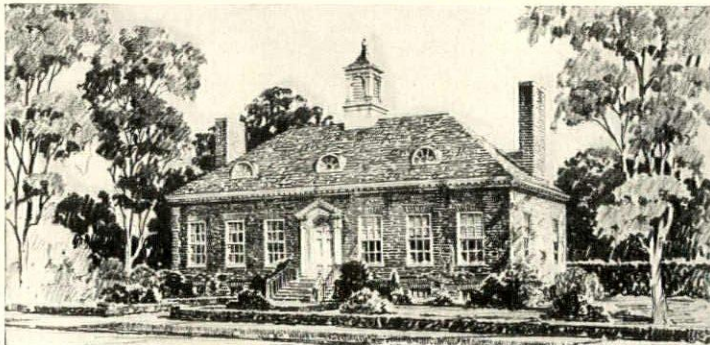


Cambridge University's new library, recently opened by H. M. the King. Sir Giles Gilbert Scott, architect

© Fox Photos

New home of the Royal Institute of British Architects, Portland Place, London. G. Grey Wornum, architect. Bronze doors by James Woodford, sculptor

Public Library now under construction for Cornwall-on-Hudson, N. Y. Erard A. Matthiessen, architect



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◀ ARCHITECTURE ▶
DECEMBER, 1934



in Photographs

Proposed armory building for Minneapolis, Minn. P. C. Bettenburg, architect and engineer



Model of superintendent's residence for Morton Arboretum, Lisle, Ill. Holabird & Root, architects



Gretl Urban, daughter of the late Joseph Urban, is at work on a series of murals for the Hotel Bossert ballroom, Brooklyn

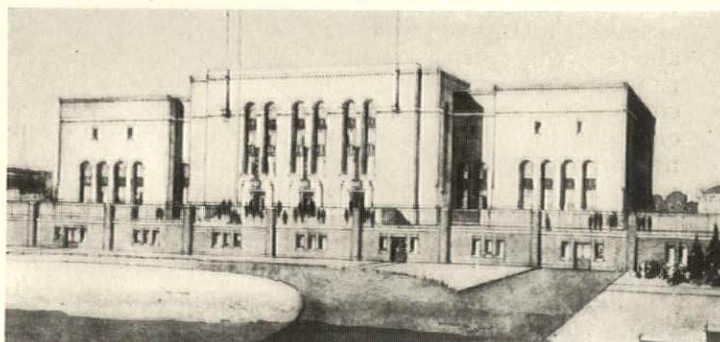
New bar, Joseph Urban room, Congress Hotel, Chicago. Scott & Teegen, architects; Eastman Decorating Co.



The Theodore Roosevelt Memorial Wing, Museum of Natural History, New York City, is nearing completion. Office of John Russell Pope, architect



Proposed Indoor Sports Building for the University of Minnesota. Clarence H. Johnston, architect



BOOK REVIEWS

THE ARCHITECTURAL WORK OF GRAHAM, ANDERSON, PROBST & WHITE and their predecessors, D. H. Burnham & Company and Graham, Burnham & Company. Two volumes. Foreword by ERNEST R. GRAHAM; Prefatory Note and Acknowledgment, with 389 plates in photogravure, 11½ by 16 inches. London: 1933; Privately printed by B. T. Batsford, Ltd.

There have been monographs published from time to time, particularly in more prosperous years, recording the architectural works of the larger firms. This particular monograph goes far ahead of anything that has been produced in this country in sumptuous presentation, the processes utilized, and the care and discrimination employed in the selection of the illustrations. It was begun in 1924, and has required nearly nine years to complete. The edition is printed for private circulation, and is limited to three hundred copies of two volumes each. The paper used is a pure rag handmade stock, the binding is brown Levant morocco, beautifully tooled by one of England's greatest bookbinders. It is a pleasure to see what a skillful combination of architectural illustrations and beautiful bookmaking can be made in the hands of artists and craftsmen, and a source of pride that we were presented with copy number 163.

ARNEGIE POCKET COMPANION. 524 pages, 6 by 9 inches. Illustrations from diagrams. Pittsburgh: 1934: Carnegie Steel Co.; Chicago: 1934: Illinois Steel Co.

The 24th edition of the familiar handbook on structural steel.

DEMOLITION OF UNSAFE AND INSANITARY HOUSING. An Outline of Procedure for a Comprehensive Program. 35 pages, 8½ by 10¾ inches. Illustrations from photographs, plans and printed forms. Pamphlet binding. Chicago: 1934: National Association of Housing Officials, 850 East 58th Street. Free to officials, 25 cents to others.

Bringing into one compact pamphlet the result of experiments over a wide area. Procedure for demolition by consent of the owner and also for demolition under the police power, with the minor factor of salvaged material.

TECHNICS AND CIVILIZATION. By LEWIS MUMFORD. 495 pages, 6 by 9¼ inches. Illustrations from photographs and drawings. New York: 1934: Harcourt, Brace & Company. \$4.50.

The author of "Sticks and Stones," "The Brown Decades," "The Golden Day," and other works, with his fresh viewpoint and incisive pen might have been expected to turn out a great book under the title above. Whatever the expectations might have been, the result far exceeds them, for here is an amazingly comprehensive picture of man's efforts to better his environment. It was Theodore Roosevelt, was it not, who once said that his greatest ambition was to write a history of civilization? That is practically

what Lewis Mumford has done in this book. It is a work capable of bringing enduring fame to its author, and a great service to mankind.

TERMITES AND TERMITE CONTROL. A Report to the Termite Investigations Committee. CHARLES A. KOFOID, Editor-in-Chief; S. F. LIGHT, A. C. HORNER, MERLE RANDALL, W. B. HERMS, EARL E. BOWE. 734 pages, 6 by 9¼ inches. Illustrations from photographs and drawings. Berkeley, Calif.: 1934: University of California Press. \$5.

The report has taken the form almost of an encyclopedia on the subject. Many qualified writers have contributed to it, covering every phase of this insect and the problems he has brought to mankind. A large part of the book is biological, another large part deals with problems outside the architect's field, but there is a full treatment of dangers to wood construction and the methods developed for combating them.

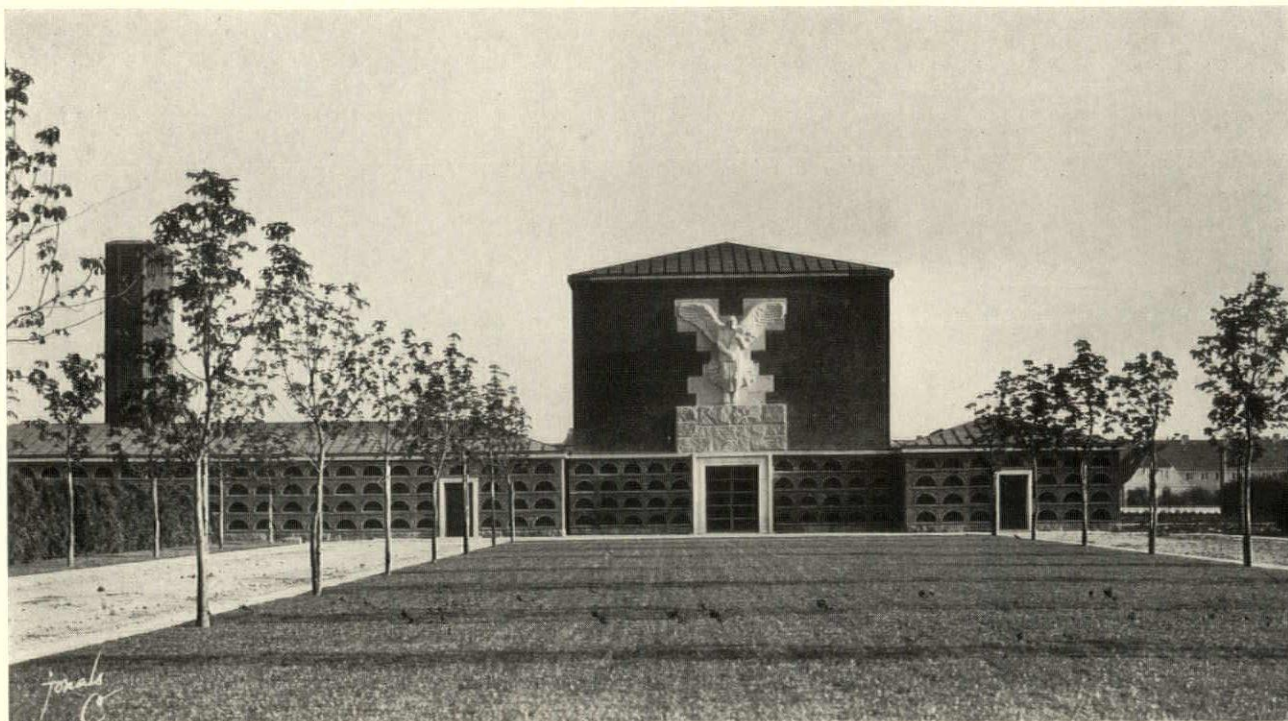
INVESTIGATION OF WARM-AIR FURNACES AND HEATING SYSTEMS. Part VI. By ALONZO P. KRATZ and SEICHI KONZO. 128 pages, 6 by 9 inches. Illustrations from diagrams and graphs. Bulletin No. 266. Pamphlet binding. Urbana, Ill.: 1934: University of Illinois. \$1.

ENJOYING PICTURES. By CLIVE BELL. 106 pages, 7¼ by 9½ inches. Illustrations from photographs of the paintings. Printed in Great Britain. New York: 1934: Harcourt, Brace & Company. \$3.

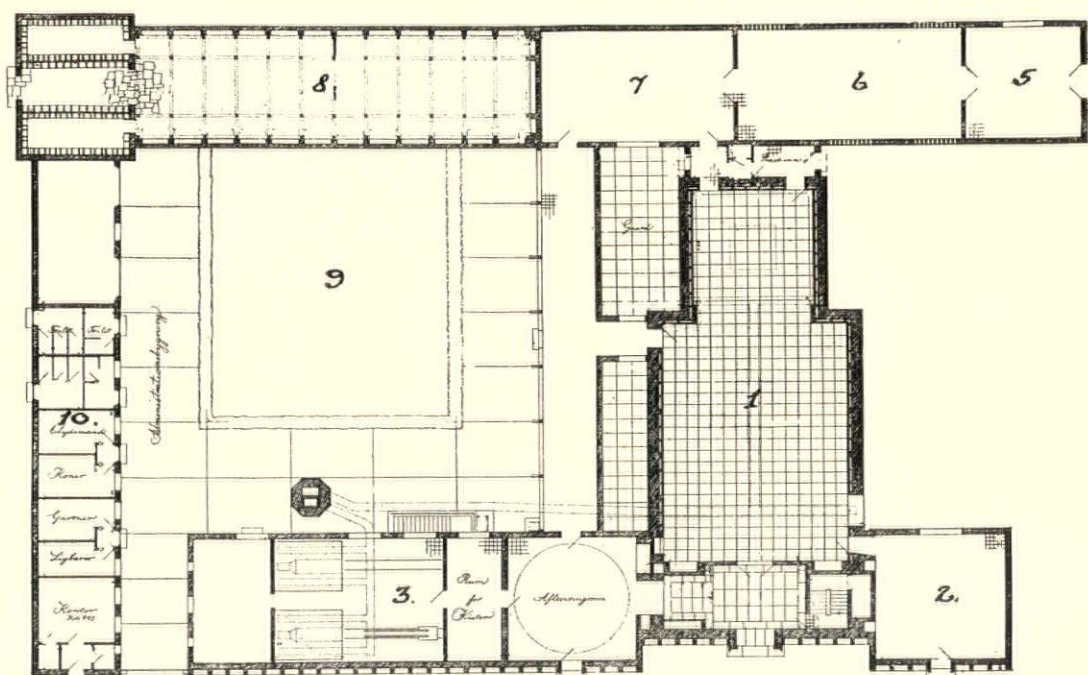
This is in effect equivalent to walking through the National Galleries and the Vatican with a brilliant observer who knows pictures and who "knows what he likes." Just as a sample, he says that if you can shake yourself clear of the shackles of childish familiarity and the atmosphere of bogus culture, you will get a thrill from the Sistine Madonna, which "is beautiful though oily." The one thing we have against Clive Bell is that he writes two books—one in the text matter and the other in footnotes, and hooks them together by numbers.

FIRST AID FOR THE AILING HOUSE. By ROGER B. WHITMAN. 320 pages, 5½ by 8 inches. Illustrations from diagrams and pen drawings. New York: 1934: McGraw-Hill Book Company, Inc. \$2.

The author has for several years been conducting a column in a New York newspaper under this same title, answering the thousands of questions from puzzled home-owners as to every conceivable phase of the maintenance of a dwelling. Out of this ripe experience of learning what matters trouble the house owner most, Mr. Whitman has brought together a well-arranged compendium of information that will help the owner to keep his home in the good condition in which presumably it was delivered to him by the architect and builder.



The Söndermark Chapel and Crematorium lies between two stately avenues and is given added dignity and privacy by a deep approach around a simple panel of lawn

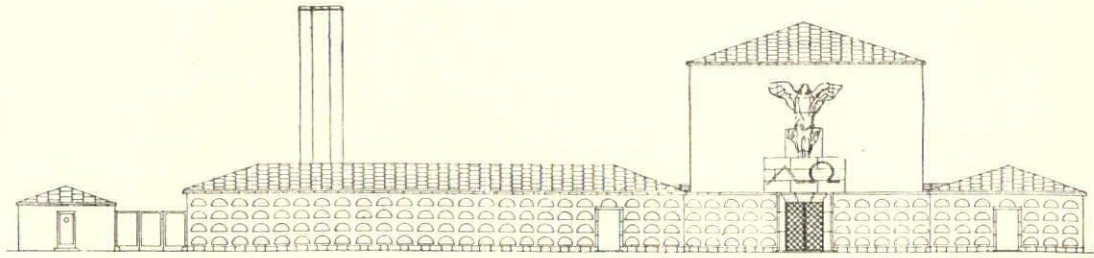


Plan of the main floor: 1. Chapel; 2. waiting-room; 3. crematory; 5. receiving-room; 6. morgue; 7. dressing-room; 8. the columbarium, a vine-shaded court of memorial urns; 9. enclosed court; 10. administration quarters

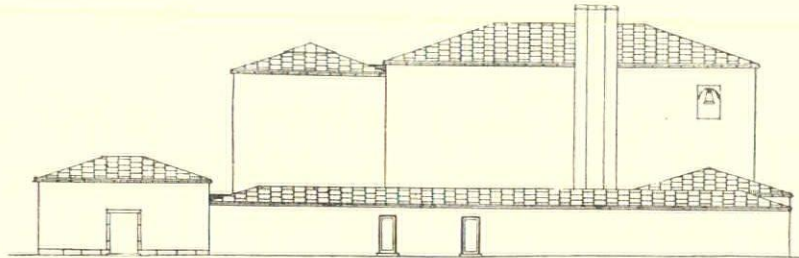
EDVARD THOMSEN AND FRITS SCHLEGEL, ARCHITECTS

Chapel and Crematorium, Copenhagen, Denmark

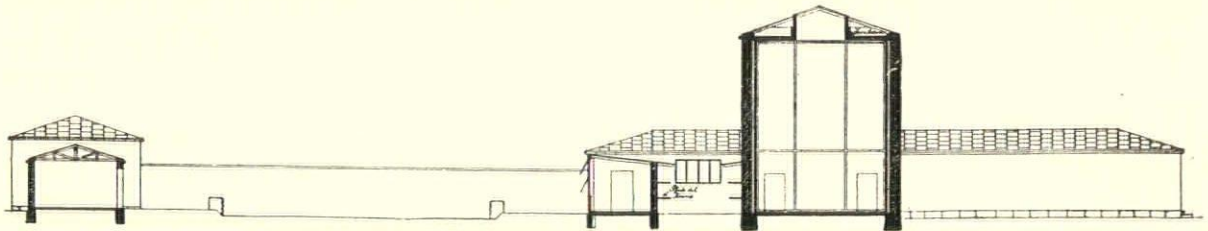
« ARCHITECTURE »
DECEMBER, 1934



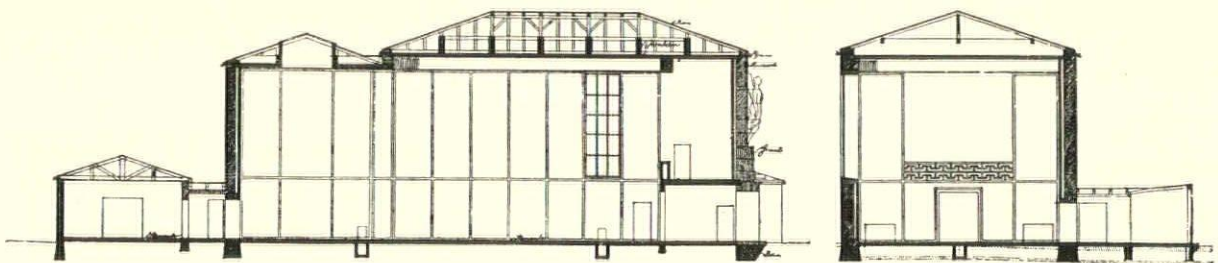
Elevation of entrance (north) front



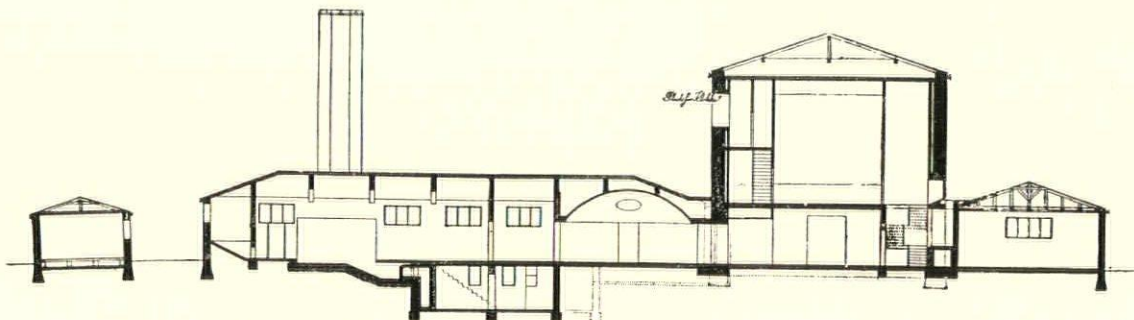
East elevation



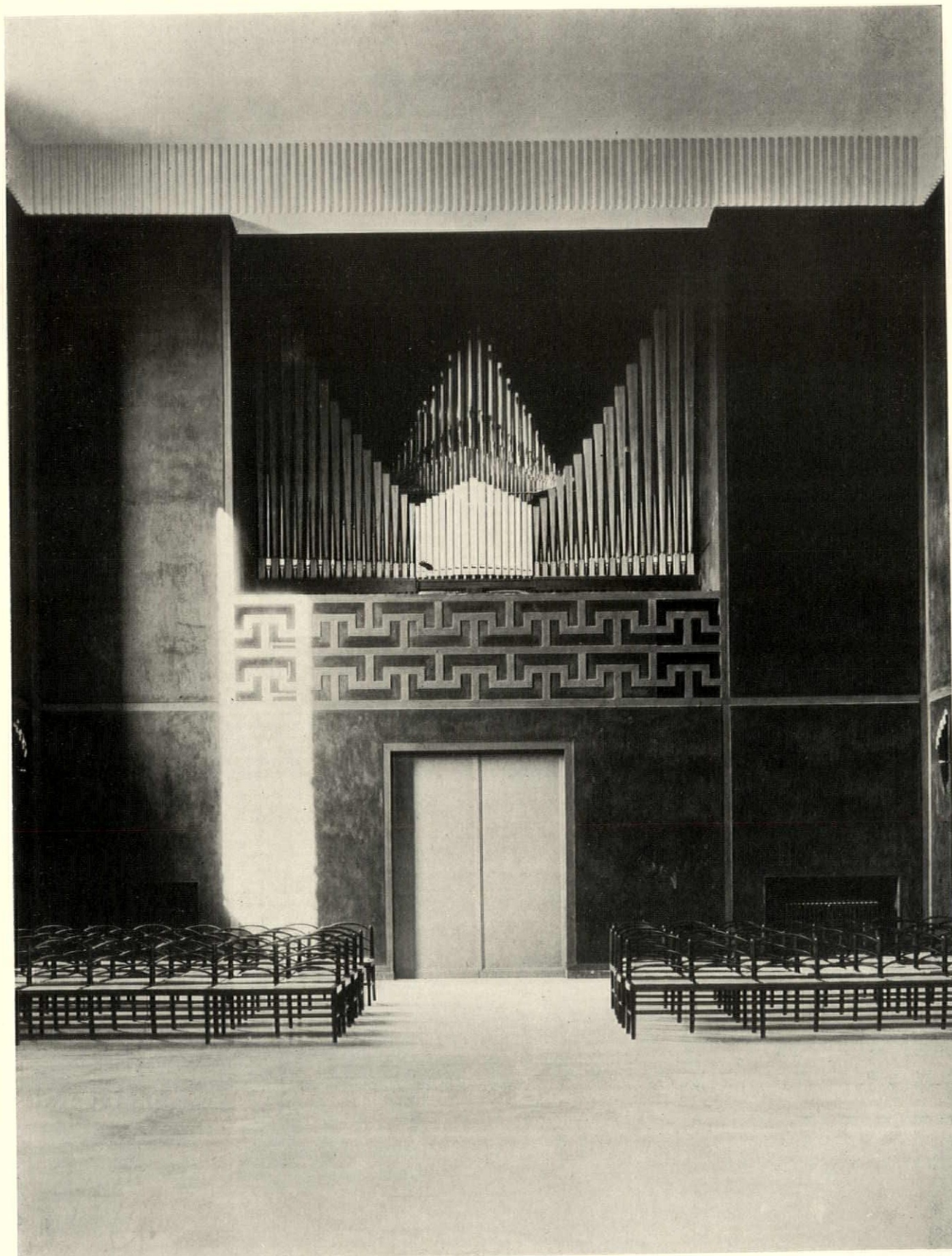
Longitudinal section



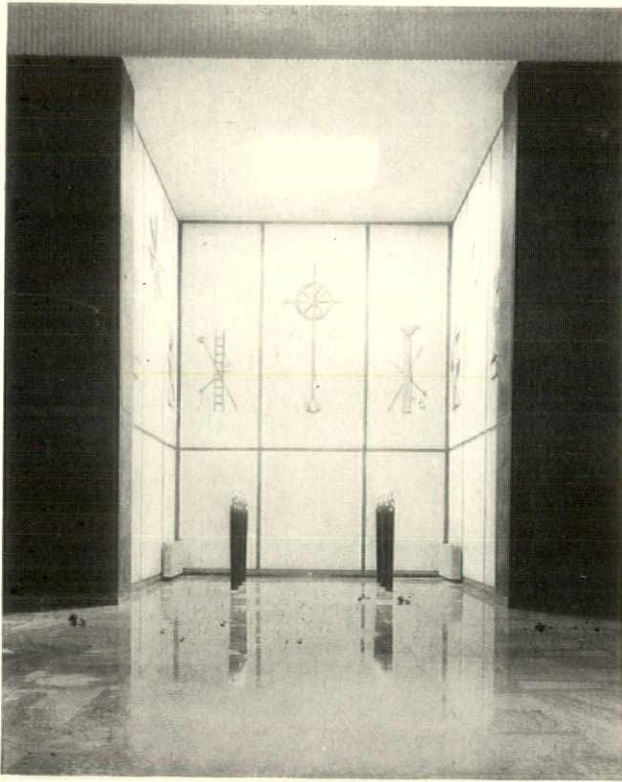
Longitudinal and transverse sections through Chapel



Section through north side



North end of Chapel. There is no organ screen; the speaking pipes have been made to contribute the decorative value of the instrument, aided only by color. Walls are of black plaster divided by sunken bands of yellow

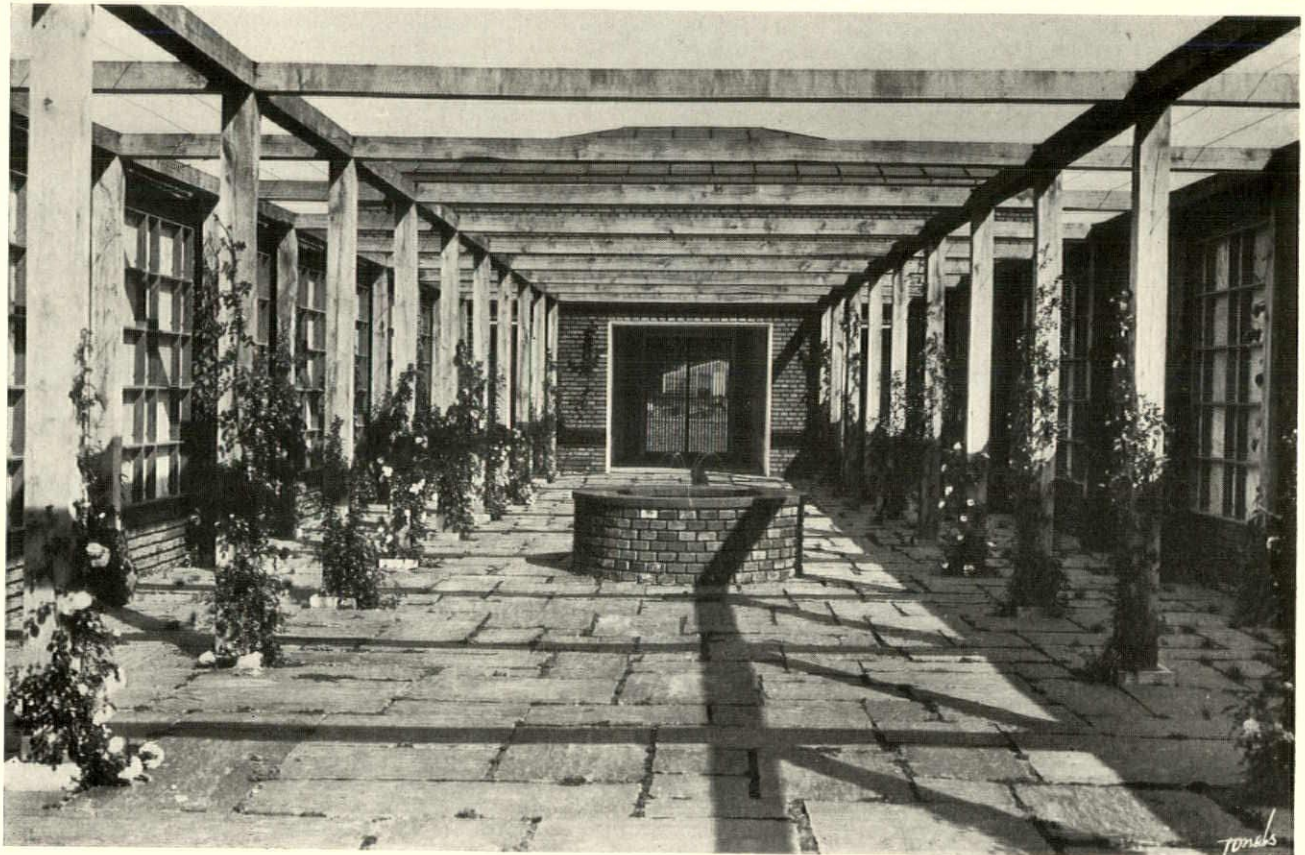


Sanctuary end of the Chapel, its white plaster walls bearing colored symbols of the Four Evangelists and the Crucifixion



Over the Chapel entrance is a sculptured figure in granite by Utzon Frank. The urn niches will be covered with memorial tablets

In addition to the niches on the front, permanent memorial repositories for the ashes are provided in this rose-arbored columbarium



BESIDES being used for steam heat, boilers often do double duty in the winter, by heating the domestic hot water. This is done in several ways. One method is to insert a line or series of lines joined by a header, below the water line of the boiler where the water is heated; the heated water then returns to the tank for storage (Fig. 1A). Some claim no tank is necessary for this type of installation, but under those conditions there must be plenty of hot-water tube length in the boiler, as well as a fire of high intensity, such as might be obtained from an oil burner. It is doubtful if a coal fire could respond quickly enough under prolonged demand for hot water.

Another type makes use of a steam pipe from the boiler running directly into a large hot-water supply tank (Fig. 1B). It is well to have such a system properly valved. Be-

Better Practice

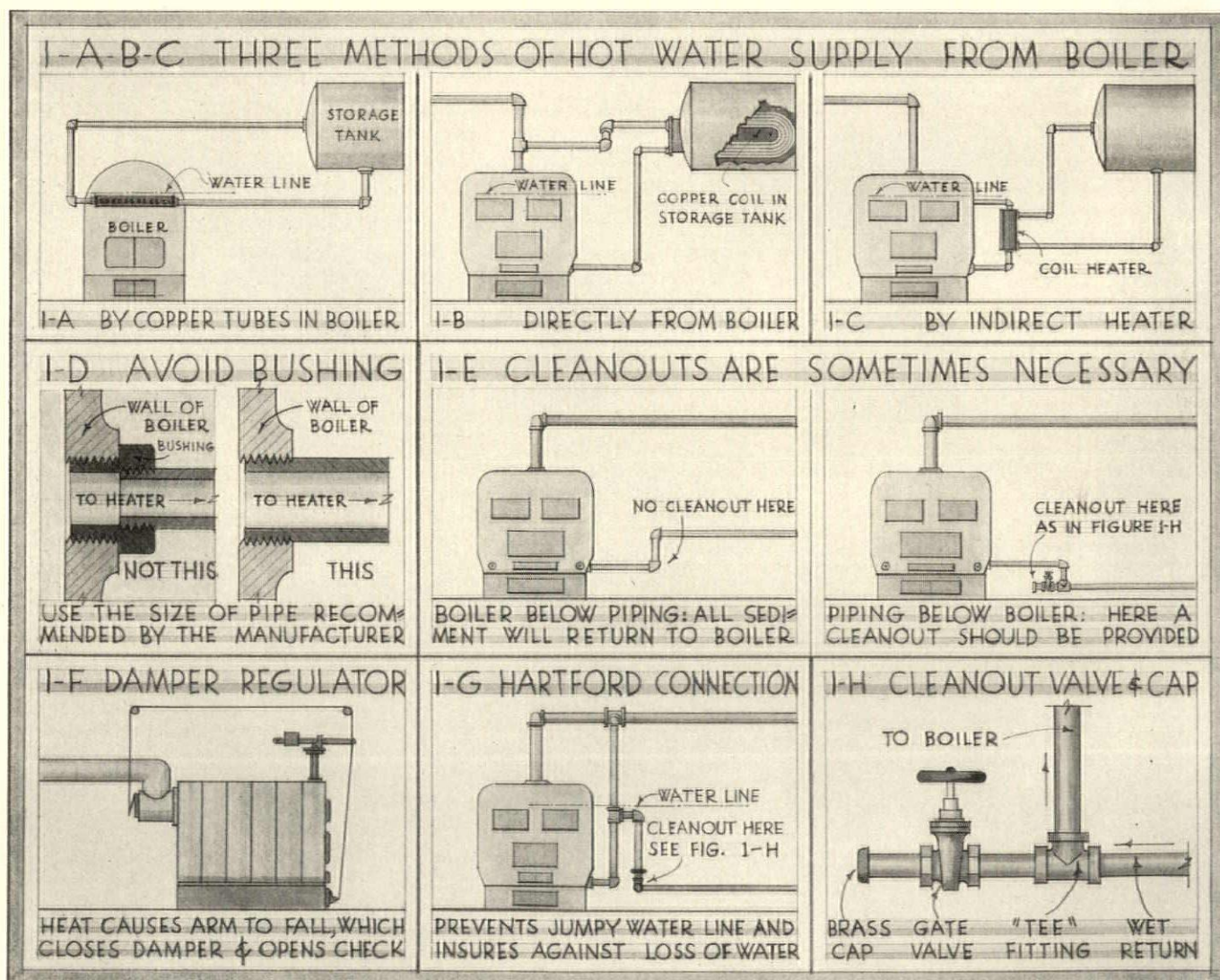
By *W. F. Bartels*

HEATING—Continued

sides this the architect should make sure that the boiler specified will stand the load imposed upon it by these heaters, taking into account the added task of heating hot water. One apartment-house superintendent complained loudly and long that he could not get heat up in the morning. Because the tenants did considerable complaining also, I thought it advisable to inspect the plant. I found that the boiler was good only for the standing radiation. When steam was started in the morning there were two places for it to go. One was into the radiators,

the other into the line into the tank where it was to heat the water for domestic use. The tank was cooled over night so that the result was that the steam entering it was condensed almost as quickly as the steam entering the radiators. The superintendent was ordered to shut the steam line going into the hot-water tank until the house was warmed up, but even then it was quite a chore to get both steam and hot water on a cold day.

An indirect heater is one in which the water to be heated goes through a coil. The latter is enclosed in a casing into which the water of the boiler is conducted by means of two pipes below the water line of the boiler (Fig. 1C). The architect must make sure here also that the boiler will be equal to the additional demands made upon it. Then, too, the pipes from the boiler must be of the size called for by the manufacturer



of the indirect heater. Too often, in an effort to save hot-water heat in the boiler, the holes will be bushed down. (Fig. 1D). This usually results in the indirect heater not working properly, and not enough steam being obtained. The top line of the indirect heater should enter the boiler below the water line.

In some systems where "street steam" is used (that is, steam supplied from a central plant) the condensate is used to preheat the domestic hot water so that steam can be saved. In most cases the condensate would have to be cooled off before it is discharged, so it is evident that a saving may thus be effected. Apparatus for accomplishing this purpose is called a heat exchanger.

Of great importance on boilers are the cleanouts. If the piping is so arranged that the boiler is lower than the lowest part of the piping, then it is not necessary to have cleanouts on the return lines, but if this is not the case then the return lines should be equipped with some means of being cleaned, such as a valve and a cap (Fig. 1E). All boilers should be equipped with proper draft and damper regulators, not only that the system may work smoothly and uniformly, but in order that coal may be saved (Fig. 1F). Proper safety valves and gauges must be provided so that the boiler will be protected and the amount of pressure on the system ascertained. One important feature often omitted on boilers is a protector. This apparatus is adapted for low-pressure cast-iron boilers, and operates by means of a difference of water pressure in the boiler. For the amount it costs and the protection it affords, its installation is well worth while.

Another device that is well worth its investment is a system of piping called a "Hartford connection." A little extra piping comprises the entire material necessary for its installation. The labor to install it is almost nil. This method of piping consists in running the wet return (the latter is the piping in which the condensate or water lies) just below the water line in the boiler into a return line from the main to the bottom of the boiler. This prevents a jumpy water line and provides a safety factor, in that if there is a break in the wet return line the boiler will not lose water as quickly. Besides this the steam cannot blow the water out of the boiler. It is

well to provide a drain at the bottom of such a connection so that the wet return line can be cleaned out (Fig. 1G).



2—PIPING AND FITTINGS

The quiet operation of a steam plant is a necessity, and in this the piping plays an all-important rôle. The pipes must let the steam circulate fully and freely, and allow the condensate to return without noise to the boiler. There the steam begins its work over again. But first the weight and kind of pipe should be considered. Is the pipe to be steel, wrought iron, or brass, and is it to be of standard weight or extra heavy? If it is to be concealed it would be desirable to call for extra heavy, and make sure it is installed. The manufacturers will be glad to furnish catalogues giving the weights and thickness of the pipe you wish to use. The use of brass pipe in steam work might at first thought seem to be rash extravagance. But where street steam is used, with the injection of various water softeners, and the piping is concealed, it is likely to be wise economy over a period of years. The condensate of this steam very often has a deleterious effect upon all steel or iron pipes.

Too often where the steam line comes out of the boiler it is bushed down. This will tend to cause the steam to carry water with it, as well as prevent the proper flow of steam into the lines. Therefore bushings at this point should be prohibited (Fig. 2A). In fact, it is well to prohibit bushings on the entire system except at radiators, where they are permissible under the radiator manufacturer's direction. It is generally considered good practice to have the pipes pitch in the direction of the steam flow. If the pipes pitch against the steam flow, they should be one pipe-size larger. Similarly a horizontal run should be one pipe-size larger than the riser going up from it (Fig. 2B). Should it be necessary to pass over a beam, this can be done providing steps are taken to prevent the trapping of the line. No steam main should be less than eighteen inches above the water line of the boiler. If the distance should approximate this, or present the possibility of dropping below it, then the line must be stepped up.

This can be done by providing the proper drip and air valve at this point, as shown in Fig. 2C. Where branches are taken off the main lines it should be ascertained whether there is sufficient pitch to the main so that there is no possibility of water lying in the pipe and not running back.

These branches must be so laid out that there will be sufficient room for a proper swing to be installed. Allowance must be made in all steam work for the natural expansion of piping. Nowhere is this more essential than in risers, and particularly where non-ferrous radiation is used. The risers and branches must be properly fastened, otherwise there is great danger not only that the radiator will make a noise but it may even be lifted from its position so that it will not operate. All branches going from a riser to a radiator should have at least three elbows to take up all possible expansion (Fig. 2D). Never should the practice of "nipping off the riser" be countenanced—a means of connecting the radiator directly to the riser by means of a nipple. It is evident that with the movement of the riser the radiator will alternately be lifted up and let down, and that this cannot go on very long without the nipple snapping off (Fig. 2E).

Where risers are the sole heating elements in rooms, such as kitchens, baths, and attics, and no radiators are attached, it is well to have tees left at the floor level and closed with brass plugs. If ever necessary in the future, radiators can then be installed without ripping out piping or breaking fittings (Fig. 2F). Where risers are run exposed through rooms there must be a certain amount of space left between them and the wall so that it is possible to plaster, tile, or paint the wall without too much hindrance from the pipes.

Pipes should be supported by means of adequate hangers. No straps, wire, or other makeshift devices should be tolerated. Pipe hangers of several types are made for the purpose and should be used. In the hanging of the heavy pipes, rollers are provided on the hangers so that the pipe may move without difficulty. Special hook-shaped hangers are made for attaching to the wall so that the return lines may be properly carried (Fig. 2G). The hangers must be spaced about ten feet apart for ordinary pipe, and closer for small pipe, to prevent

sagging. They must be securely fastened, because if they are not and one sags or is torn down, the steam line may have a trap as a result.

Pipes that leak on first being installed are sometimes calked by the mechanics to avoid doing the job right—which would be to do it over again. Pipes should be covered in most cases so that the heat may be conserved. If the pipe is laid in a semi-exposed position—such as in roof fill—after the magnesia covering has been applied a layer of hair felt should be wrapped around this and finished off with a layer of building paper. Where a steam line is to be exposed to the weather, successive coats of hair felt and tar paper are necessary. Mineral wool may be substituted for the magnesia if so desired. Very often the pipe insulation is finished off by having a canvas covering sewed on over it, thus affording additional protection

to the insulation. Where a steam line is laid in a confined space there must, of course, be room left for the expansion of the lines.

Piping near the boiler must be properly supported so that there is no strain on it, either through the weight of the pipe or through expansion and contraction.

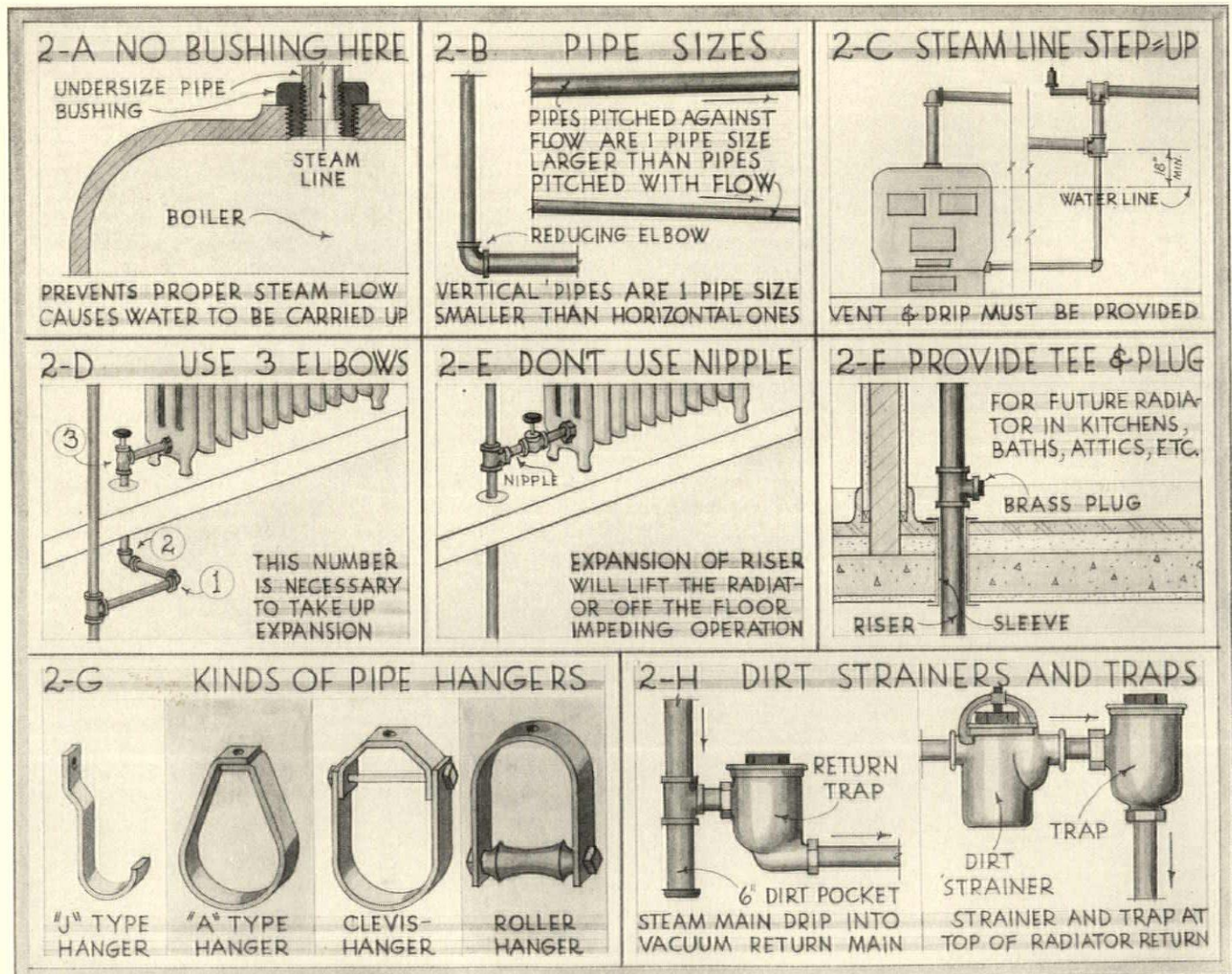
In vapor and vacuum systems it is well to provide for dirt pockets, so that the traps will not become clogged because of foreign matter. These traps are an important part of the system. Providing the appropriate and best type is most important. Very often it is well to provide dirt strainers ahead of the traps so that the latter are not put out of commission by pipe scale, etc. (Fig. 2H).

In hot-water piping the architect must keep in mind that the only thing causing the water to flow is the difference in the temperature of

water and the fact that hot water tends to rise. When this is fully comprehended the architect will see to it that there is no unnecessary friction in the lines, no sharp bends, no sudden turns. Only then will the hot-water system be a success. Where it may be necessary to get more circulation than is possible by depending solely on physical forces, there are on the market circulators which will enable the system to be stepped up, thus giving more heat to the radiator and obtaining more heat from the boiler.

3—FITTINGS

Steam fittings should be “standard” or “extra heavy cast iron, steam pattern.” Too often if they are not specified the architect may suddenly find that ordinary plumbing fittings (which are malleable)



have been used. It is far better to have reducing fittings called for than to allow bushings to be used on any of the lines. Where close nipples are used they should be "extra heavy"; otherwise if a strain is put on them they are very likely to snap off, due to the reduction of material at the thread.

Sleeves for pipes passing through walls or floors may well come under the heading of fittings. Too often they are entirely forgotten. They should be heavy enough to maintain their shape and should prevent the steam line from coming directly or indirectly in contact with any wood. Floor plates should be provided around all risers.

Expansion joints may be of several types. These joints are used to take the place of swings or loops, and by their use considerable space can be saved. There is a packless type of expansion joint which, as its name indicates, does not need to be packed. It is made on the order of a bellows and takes care of any ordinary expansion. Also there is the packed type of expansion joint, which requires attention to the packing every so often. Whatever the type of expansion joint used—even in the case of a pipe swing—an access door should be provided so that if there is any trouble the joint may be exposed and repaired.

The modern radiator is generally of the tube type, it having been found that this type gives off more radiation for the material and space involved. The radiator will be furnished with a shop coat of paint, and this is too frequently followed by silvering or bronzing, as called for by most specifications. Tests by some of the leading universities have shown that this is not the best means of obtaining the most heat. It has been found that silvering and bronzing act more like insulators than

conductors. A thin coat of good paint or enamel is the best method. When it is recommended that radiators be painted it does not mean, however, that a heavy paint or an ordinary enamel be used. If this is done, cracking and peeling are bound to develop, and will make the owner wish that nothing at all had been used.

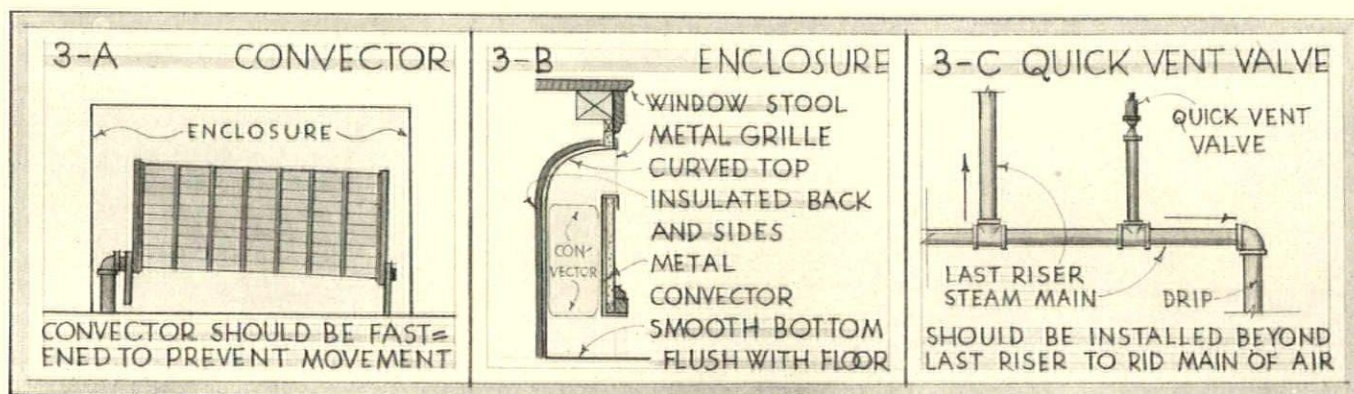
Concealed radiation is making great strides in both popularity and utility. The "convectors" (as they are called, instead of "radiators") are made both of iron and of non-ferrous metals. The latter are of course much the lighter. Therefore it is well to call for them to be securely and thoroughly fastened. Otherwise a slight movement of the swings connecting them would cause dislocation, which would probably interfere with their operation, such as might happen if the steam inlet end were lifted higher than the closed end in a one-pipe job (Fig. 3A). When the convector is put in the wall it is advisable that the rest of the wall not only be protected against the direct heat, but that as much as possible of the heat be deflected into the room. Therefore behind the cabinet which is furnished, or in back of the sheet-metal forms that surround the convector and along the sides, there should be asbestos boards, hair felt, or similar insulating material. If the outlet for the heat is not directly in the top of the cabinet, it is better that the top of the form be curved so that the heat will be thrown outwards (Fig. 3B).

The difference between globe and gate valves should be kept in mind while writing a heating specification. A globe valve is superior when modulation or throttling is required, while in a water line it is better to use a gate valve. When a globe valve is to be used in a steam line it

is better that it be specified to be turned on its side. This will allow the steam to pass through before the condensate which might settle behind the valve.

On a one-pipe steam job the steam cannot be regulated by turning the valve in modulation. This is because the condensate has to return through the same space that the steam is entering, and there will be a conflict between the steam and the water at this point. With a vapor or a two-pipe vacuum job it is possible to control the amount of steam passing through a valve. There are on the market today valves which are in automatic charge of radiators, called thermostatic control valves. They are equipped with thermostats and can be set for any room temperature desired. They then take care of the heat by themselves, shutting off the steam when the room gets above the set temperature, and turning the steam on when the temperature falls below.

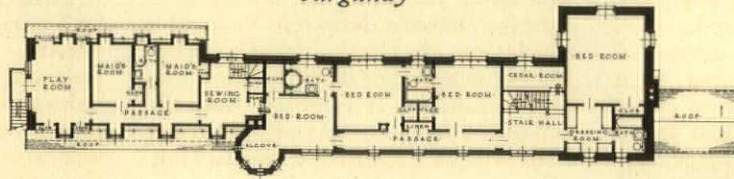
Many one-pipe steam systems are being converted to so-called vacuum systems by means of non-return air valves. These can also be installed on new work to great advantage. These valves exclude the air from the system and thus keep the radiators hot longer, as well as making it easier to get up steam. The system must be airtight to get the best results. A compound gauge should be used in connection with these valves, so that the amount of vacuum may be determined. It is well also to call for a quick vent at the end of the mains. This valve is made on the same principle as the radiator valves, except that it is larger and rids the lines of air more quickly. The quick vent valves should be installed beyond the last riser so that all the air is taken out and as little water as possible reaches the valve (Fig. 3C).



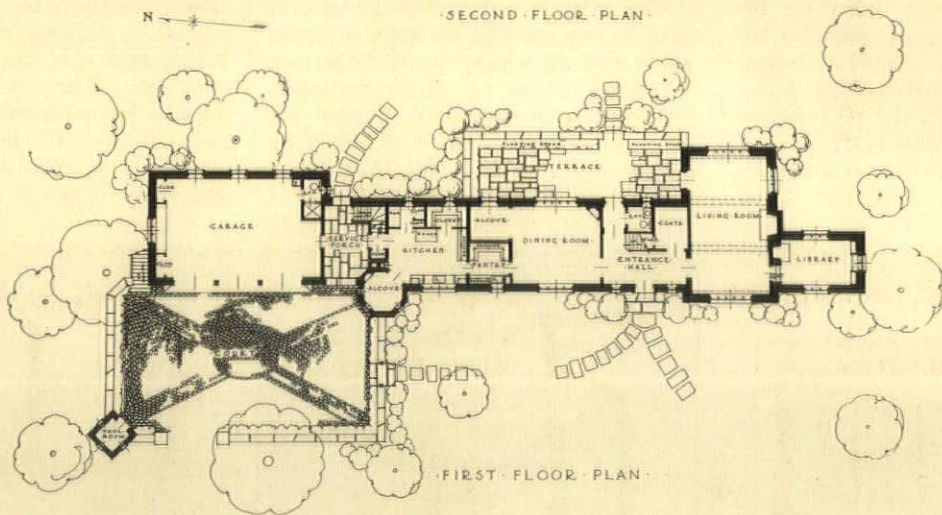


Photographs by
Robert MacLean
Glasgow

The architect has used local fieldstone in combination with common brick of a dark salmon color, and hand-made shingle tile for the roof in reds, browns, and burgundy



·SECOND FLOOR PLAN·

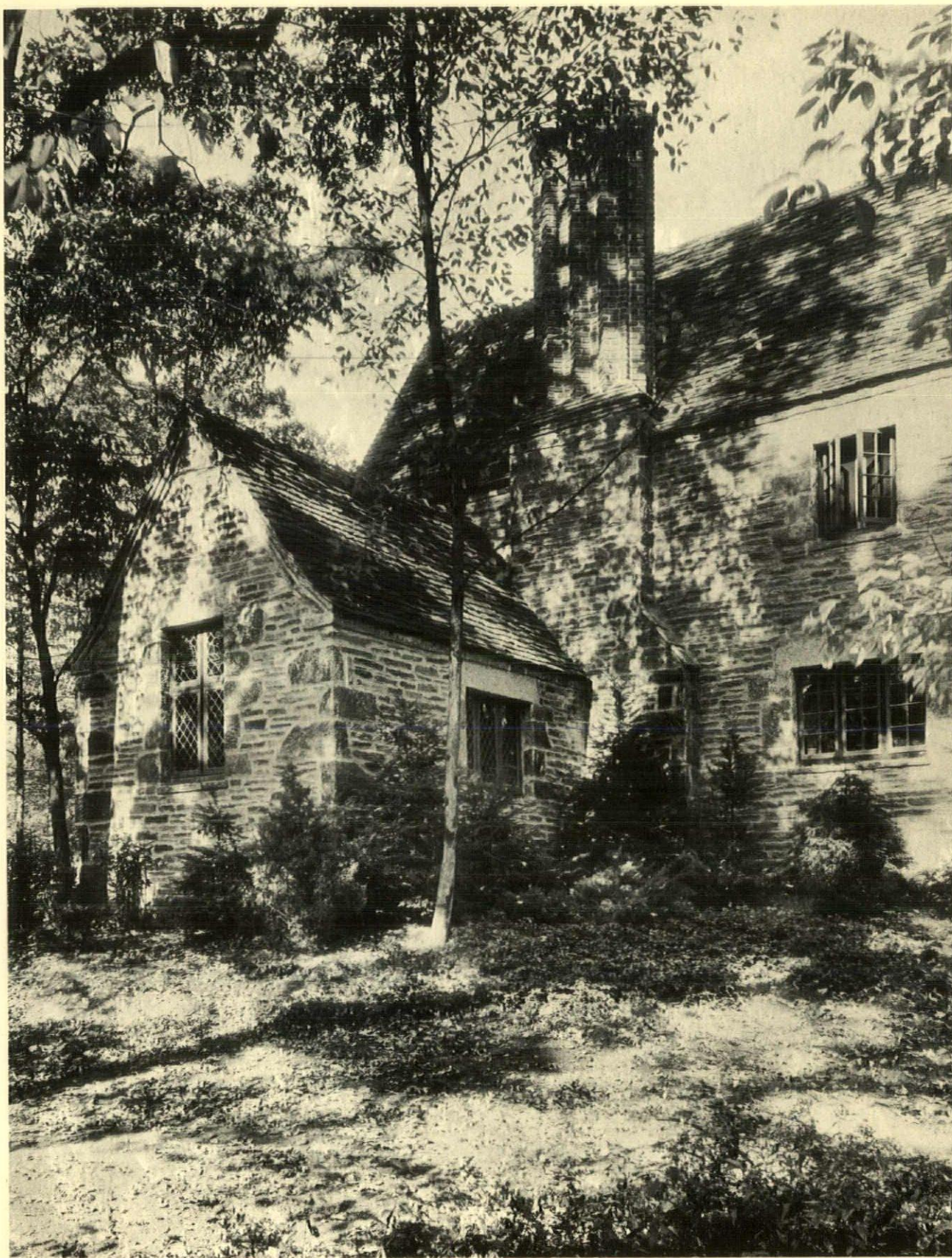


·FIRST FLOOR PLAN·

FRANK J. FORSTER, ARCHITECT

House of George G. Bass, Greenwich, Conn.

« ARCHITECTURE »
DECEMBER, 1934



The architect has made good use of his local stone in saving the big ones for the corners and lintels—faithful to the best traditions of stone masonry

« ARCHITECTURE »

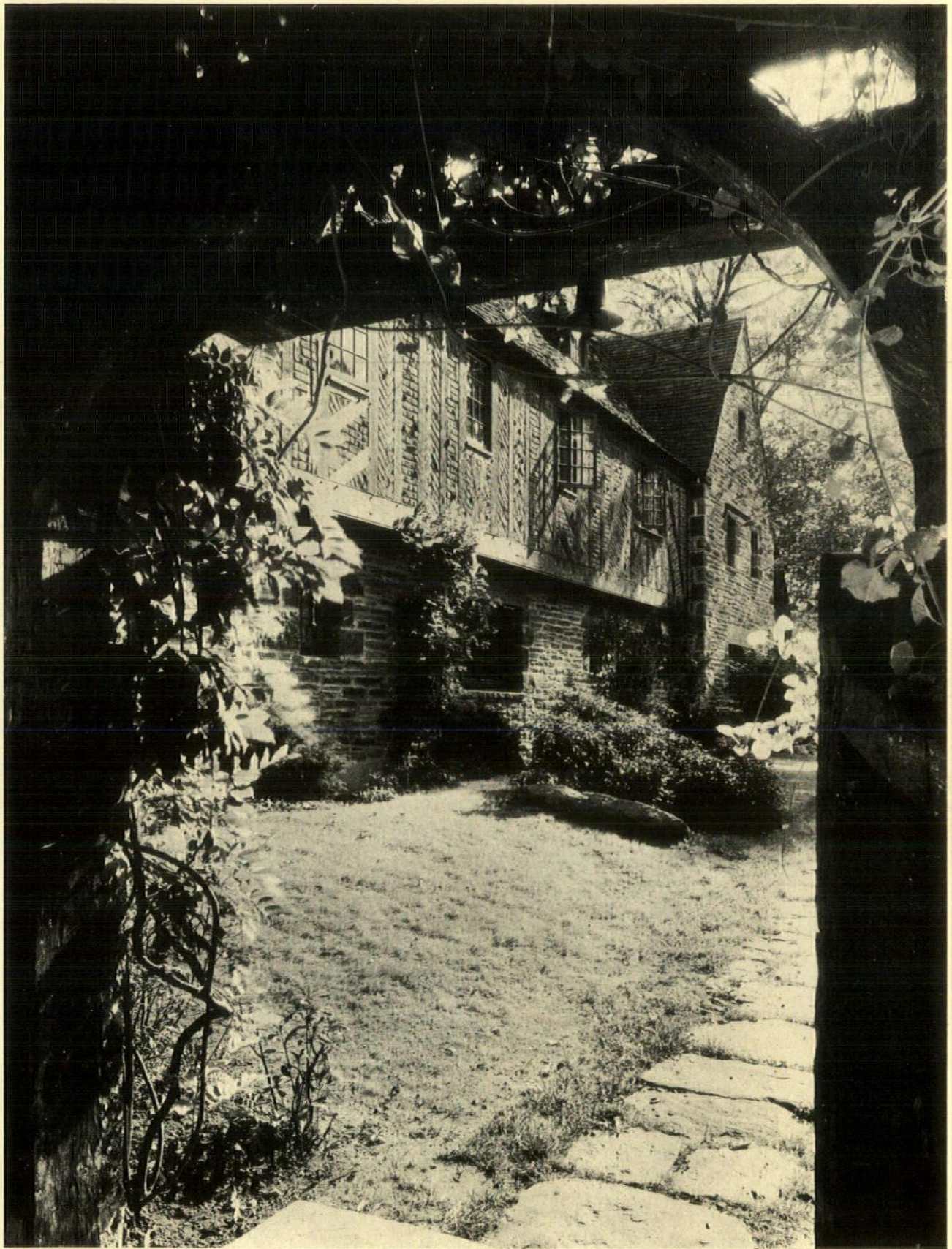
DECEMBER, 1934



The entrance court. Across the court at the left is the little garden house with its tool room. Belgian blocks are used for the paving in a pattern shown on the plan

« ARCHITECTURE »

DECEMBER, 1934



A view from under the lych-gate, looking across the west front. All of the woodwork in evidence is new oak which has been stained a weathered brown

« ARCHITECTURE »

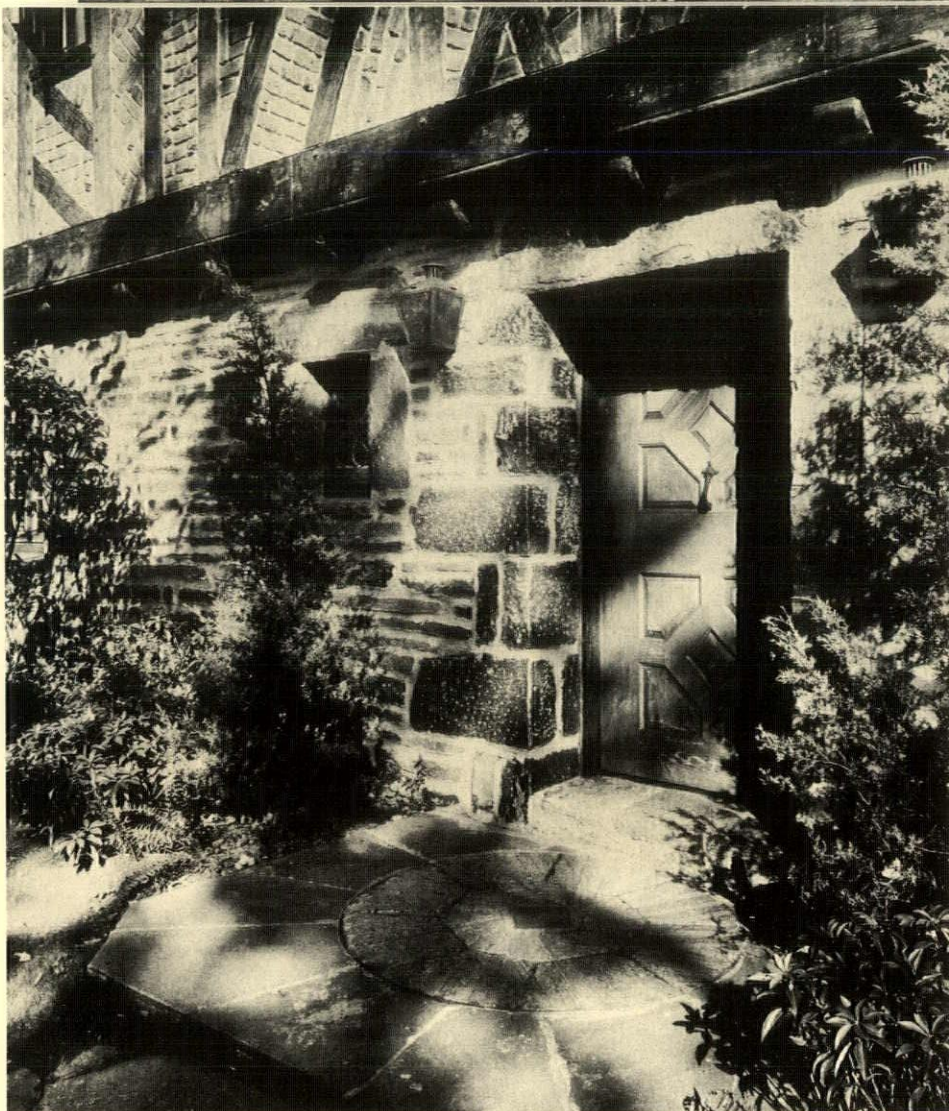
DECEMBER, 1934



Another view of the west front, looking toward the enclosed court. The half-timber work, with its brick nogging, is of structural timbers doweled and pinned together

« ARCHITECTURE »

DECEMBER, 1934



The east terrace, in which the paving of flagstones is laid on a sand bed, with grass seed sown in the joints. The lintel over the long window, being too long for the available stone, was built of reinforced concrete, its face roughly picked out

All of the exterior woodwork is of oak. The lamps flanking the entrance doorway were especially designed, as was all the hardware. The architect has used an old millstone in the paving before the entrance

◀ ARCHITECTURE ▶
DECEMBER, 1934



The entrance hall. Oak, stained warm brown, shellacked and waxed, has been used for the interior woodwork, with some exceptions. The plaster has a natural sand finish

« ARCHITECTURE »
DECEMBER, 1934



The dining-room as seen from the breakfast alcove. In the latter, pine boards with a molded edge have been used for the walls, combined with an oak trim. The cretonne hangings are of colors that tone in closely with the woodwork



The breakfast alcove as seen from the dining-room. Quarry tile in reds and browns have been used for the floor, and the chairs and table are old Swiss pieces

◀ ARCHITECTURE ▶
DECEMBER, 1934

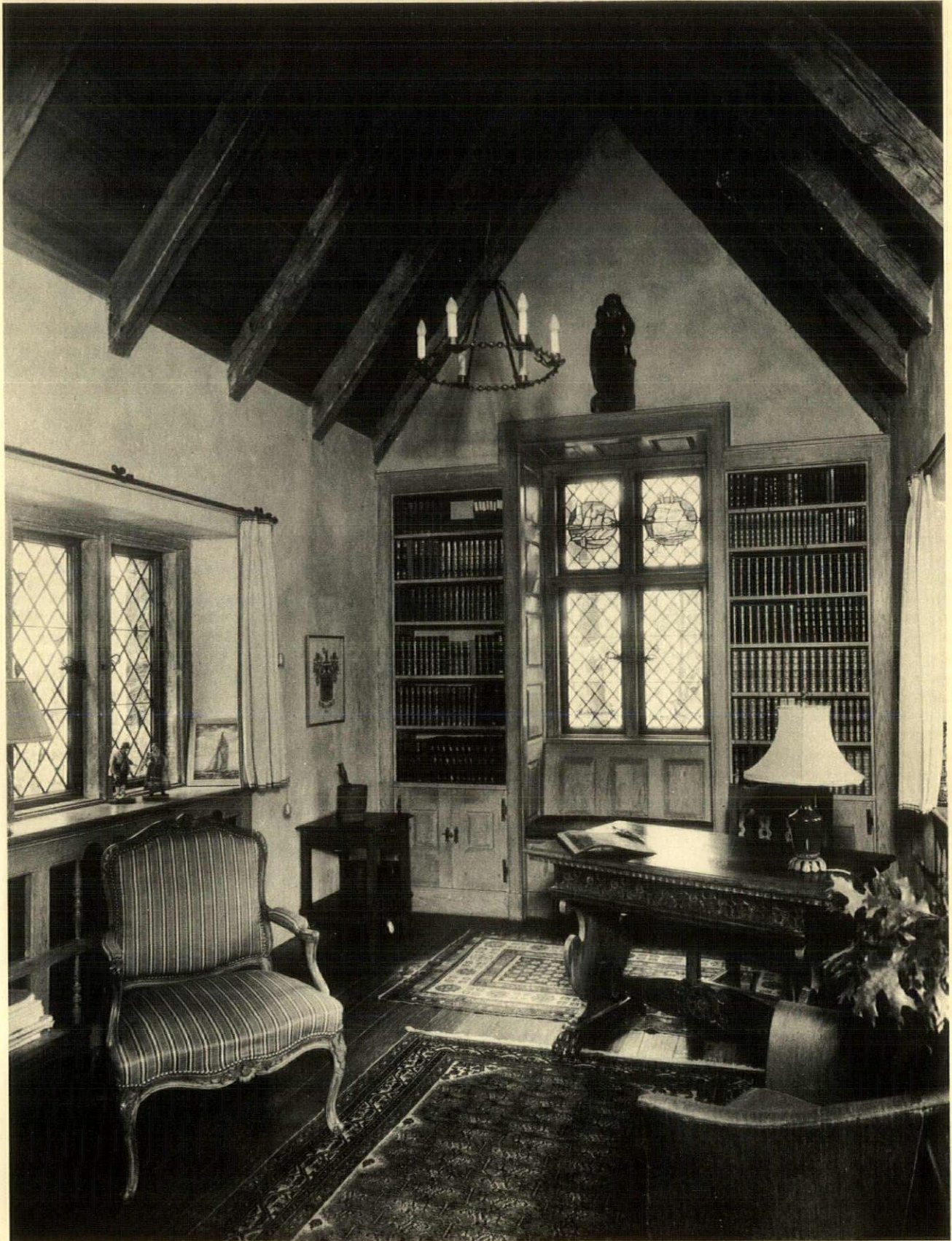


In the living-room one whole long side is panelled in pine. The floor is of oak in random-width boards, screwed down and plugged. Ceiling beams are of oak with a molded edge



A view from the library, looking across the end of the living-room into the entrance hall. The architect tooled a local stone for the fireplace lintel. Over the oak rafters are laid pine boards of random width, planed and stained

« ARCHITECTURE »
DECEMBER, 1934



Another view of the library. Oak has been used here for the trim, and the architect was able to procure some old oak to use with the new as rafters

« ARCHITECTURE »
DECEMBER, 1934

ONCE upon a time we heard of an architect who did a large country house, but lost money because he lavished unstinting time on all the minute details. He consoled himself by thinking that at least the job was worthy of him, even though it was hard on his family. After it was all complete, his final fee paid, and the wealthy client delighted with his domicile, a fire burned it to the ground. The client re-commissioned the architect to reproduce the house exactly as it had been. It was done, and the architect made such a handsome profit that he was able to take his family to Europe for the summer, just as though he had been a business man.

The moral of the story seems to be that this particular architect had the good fortune to do what every manufacturer does every day of his profitable existence. If every tenth house in the architect's office could be a duplicate, there would likely be a profit. Since that is improbable, perhaps every tenth of each job could be a "repeat," or built from stock details.

On any set of house plans one of the items which demands more lines per square inch, and more details per square foot of floor area, is the bathroom—plan and details. Yet if you study the matter it seems sensible to conclude that there is a peak point beyond which there is no sense in evolving custom bathrooms for each house. It is logical to reason that if a tub maker ran his business as does an architect when drawing the details for a bathroom, the former would not sell a stock product from his warehouse, but would make a special tub $\frac{1}{2}$ " wider and $\frac{3}{8}$ " longer than the previous one manufactured. Such a tub would be unprofitable to make, and the client would feel it excessively expensive to buy—even at a price less than its cost.

Surely it must be possible for the architect to start with certain stock bathrooms when the house is first being planned, and treat this space with the same hands-off respect which is accorded the space allotted the necessary area for a car in the garage, a range in the kitchen, or a bed in the bedrooms. Perhaps there should be seven types of bathrooms boiled down to stock plans and details, as shown on page 339, perhaps there should be ten. That is up to the architect's decision. But during the present interim when

Standardizing the Bathroom

By

Kenneth Edmunds

business is not rushing, it would seem good sense to draw up some stock details which will save time later. It is good policy in any case to keep one's hand in training.

Present indications all point to the greatest building activity of the immediate future being in the small-house field. Formerly it was deemed unprofitable for an architect to undertake any house costing less than \$10,000. There should be no reason why, with the proper thought and repetition of bathroom and kitchen details, trim, stairs, etc., the architect cannot do himself a good turn by specializing in small houses for even less than \$5,000, and do the community an even greater service. In the past the builder has seized the opportunity which the architect has scorned.

In the minds of most architects there is a certain stigma connected with resorting to stock details. When it comes to bathrooms this is a little difficult to understand. If the architect has no objections to using stock fixtures, why should he not employ stock overall dimensions? The time may not be far off when an entire bathroom will be sold as a stock product, and when that time comes the architect will doubtless use it without reservations. In the meantime there is no good reason why the architect should not evolve his own stock bathrooms, as far as possible, and when a new job comes in, merely have the stock details traced or blueprinted. If, between now and the time when the architect's office becomes busy, he were to evolve the best bathroom details of which he is capable, the bathrooms built from them later will doubtless be superior to custom-drawn jobs rushed out when the office force is working nights trying to keep abreast of pressing work.

The full-page drawing with bathroom plans is meant to be of practical help in getting out quarter-inch-scale plans. This page can be shoved under the working drawing

sheet and the fixtures traced. Each type is also drawn reversed to facilitate meeting most conditions which may arise. If there are rooms of unusual shapes, naturally the suggested plans as they stand will not fit, but the fixture sizes and clearances may be of help. It is left to the architect to draw up typical door and window-jamb details, various wall elevations showing electrical outlets, etc., with certain variables left blank, such as the type of heating panels.

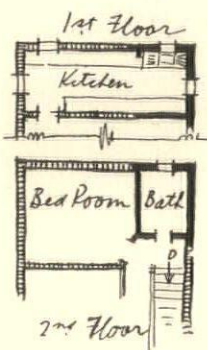
There are a number of house truisms which every architect knows, but well-known as they are, the majority of them frequently seem to slip the mind in a charette. The following paragraphs may serve as a useful check list at a rush moment, to be amplified as new ideas and materials are developed. Or, they may save time when a new and untried hand joins the office crew.

HOUSE PLAN

In the small house the proportion of the cost of plumbing to the entire total is so large that it is important to have the bathroom over the kitchen. In the large house this may be immaterial. Then too, as houses shed their basements, having only one nest of pipes to insulate below ground is less expensive than two. When sketch plans are being drawn, if one of the mandatory conditions the architect imposes upon himself is that of arranging bathroom over kitchen, it sometimes is helpful in determining where the second-floor hall shall be, and the stairs. The greater the excellence of a house plan, the smaller its second-floor hall. Any builder can produce a wasteful second floor, but a good architect should discard all schemes which do not have minimum hall area. When the bathroom is over the kitchen, usually it will work out best if the stair lands near the bathroom door. Therefore it is apparent

that from the very start on the first-floor plan, the stairs should be studied in relation to kitchen-bath (see marginal sketch below).

Ideally the pipes to the bathroom should be in a partition, not in an out-



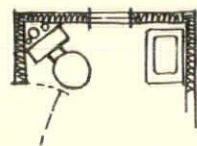
side wall. Recent kitchen recommendations favor one which is about 8' wide. This module will approximate the long dimension of the bathroom on the floor above, and simplify the partition layout by continuing that of the kitchen vertically to form the end of the bathroom.

BATHROOM PLAN

The most important fact to remember in laying out the fixtures is that the most economical job is one in which all three are on the same wall, as in type *A*, or in an easily piped sequence as in type *D*.

When the bathroom is between two rooms and each has a door into it, there is always the unsolved problem of how to make the person leaving the bath remember to unlock the other door. There should be some simple automatic device invented and marketed which would lock and unlock both simultaneously. This could be done electrically, but there would have to be a simple emergency method of releasing the lock in case of a short circuit or a discontinuance of the current. Until such a device can be specified, wherever possible it seems advisable to provide a corridor outside the bathroom instead of having two bedroom doors open into it.

Often, when the plumbing pipes cannot be housed in a partition, instead of being in the outside wall they can be condensed in the corner with the wall furred at 45° to hide them. In such a case it may work out advantageously to place the toilet on this 45° wall. If there is a door to the side of the fixture it can be nearer the corner of the room than though the toilet were at right-angles. The toilets in Pullmans are placed thus at a 45° angle because of the limited space.

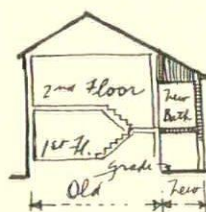


Minimum sizes are given on Figures 1 and 2—not an absolute minimum, but a reasonable dimension for adequate fixtures. In case of necessity, reference to plumbing catalogues will disclose that these dimensions can be whittled down still more. Minimum clearances are given on Figure 3. Figure 1 shows what is probably the minimum sized bathroom, with an arrangement which is perfectly practical even though a bit cramped. It would measure 5'-9" by 4'-10".

REMODELLING

Each house will present its own problems and possibilities for adding a bathroom or two. The following suggestions may serve as reminders:

- (1) Between bedrooms several arrangements are possible, such as those in the marginal sketches.
- (2) A new bathroom can be built



at a level with a stair landing and extending toward the outside, the space below it being an outside room for garden implements, bicycles, etc.

- (3) The basement may conveniently provide a shower bath, lavatory and toilet for the family with growing boys, particularly if the basement be adequately lighted and

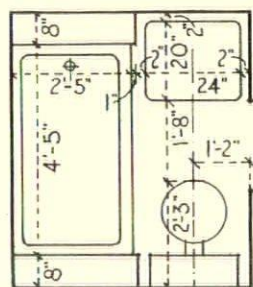
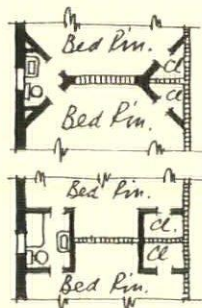


Figure 1

Figs. 1 and 2 show minimum (reasonable, not absolute) sizes for fixtures

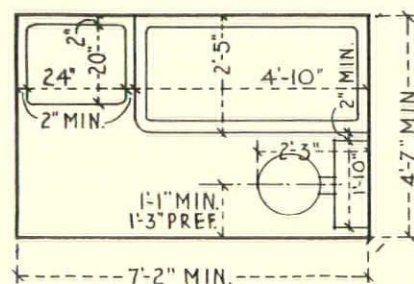


Figure 2

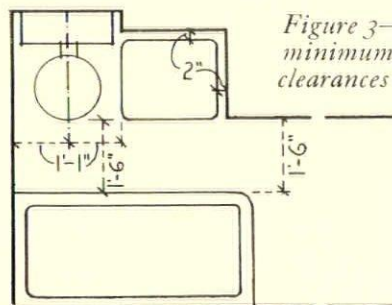


Figure 3—minimum clearances

well ventilated, and there is a recreation room there. While the location is not ideal, if there is no other place for a much-needed bathroom, it is better than none.

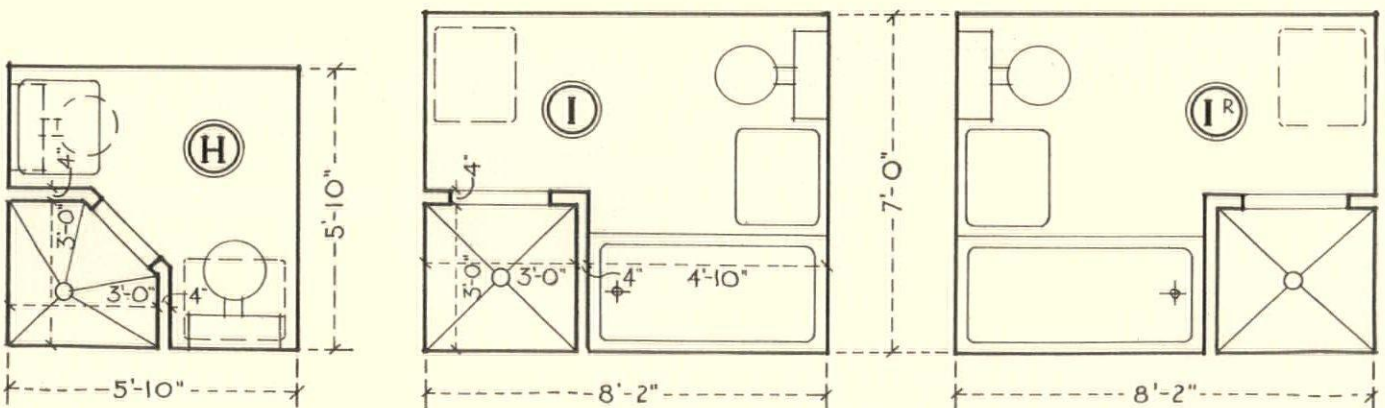
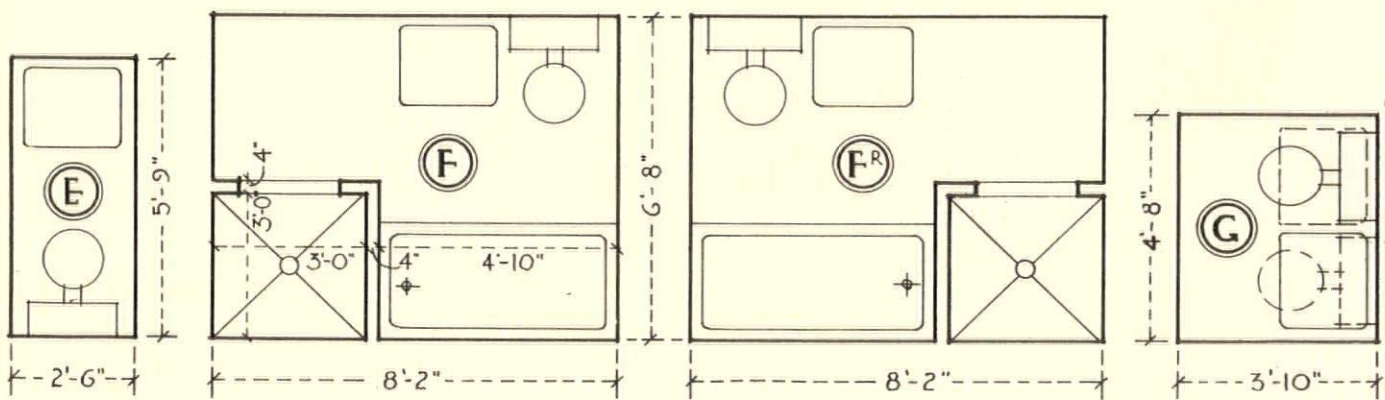
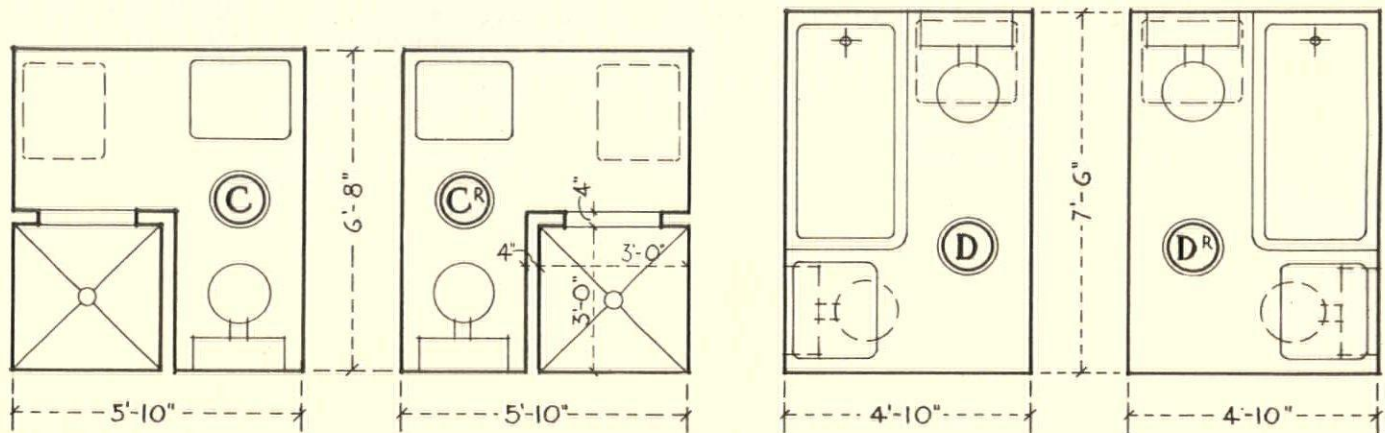
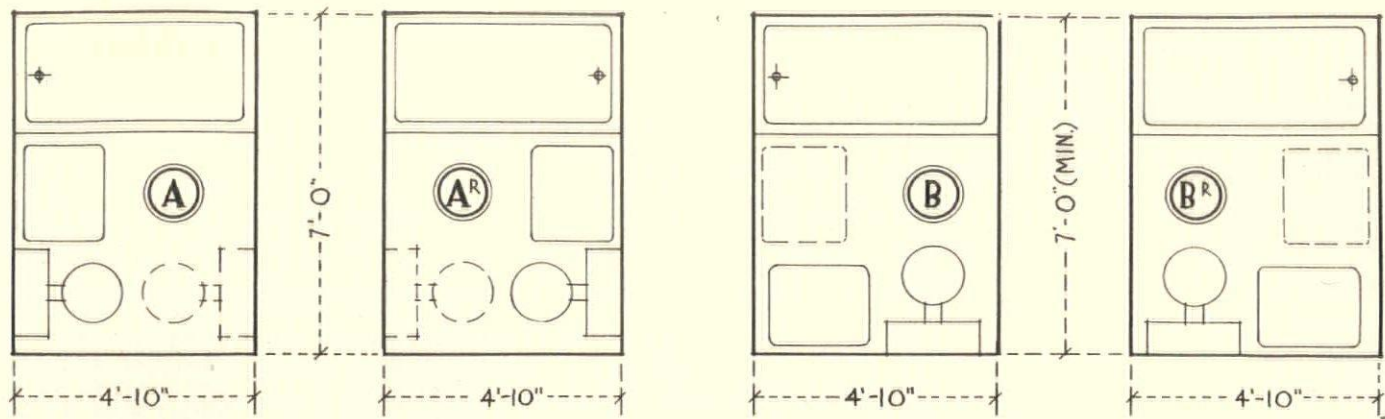
- (4) When installed in bedrooms, lavatories relieve bathroom usage to such an extent that an extra bathroom may not be needed if a toilet be added in the basement for outside help and emergencies. In this connection it is worth investigating the new pre-fabricated units which have been on the market for the last eighteen months. Needless to point out, it will be an advantage to have the lavatory in a wall recess or a closet so that it can be hidden by door or hanging.
- (5) Wash rooms on the first floor under stairs, or in a newly added ample vestibule, may be the only possible substitute for a full-fledged bathroom where none can be added on the second floor or off the stair landing.

BATHROOM DETAILS

A window should never be placed over a tub unless there is absolutely no other location possible. If a window *must* be there it is preferable to make it a casement, for when it sticks, as it is almost certain to, it is easier to push or pull open than to lift the window as is necessary with a double-hung sash.

For remodelling work where there is no room for a linen cupboard outside the bathroom, and where the latter is crowded, it may be possible to get a shallow one over the end of the tub. No one stands up at the head end of a tub. By the same token there can be a cupboard above the toilet tank.

The usual lock on a bathroom door is a thumb turn on the inside, below the knob latch, and only an escutcheon below the knob on the outside, into which fits a removable, emergency key. Every household with children sooner or later goes through the throes of looking madly for this emergency key while young Oswald has locked himself on the inside and threatens to drink up the contents of the medicine cabinet while standing on the edge of the lavatory. From personal experience it would seem that the old Colonial houses which had simply a latch for ordinary purposes of keeping the door closed, and a bolt on the inside well above the reach of children, solved the problem in the simplest manner, though it still left the pro-



SCALE: 1/4" = 1'-0"

« ARCHITECTURE »
DECEMBER, 1934

lem of how to aid one who has locked himself in the room and thereafter lost consciousness.

Moldings are as out of place in a bathroom as in a hospital. Doors should be perfectly flush on the inside. Trim should be eliminated, or reduced to a minimum.

Soundproofing is worth while if the living rooms of the house are adjacent to the bathroom.

One of the most difficult problems to solve is that of preventing leakage between floor and tub when the latter has been sunk in the floor. Water is apt to run down between the two and discolor the ceiling below.

FLOORS

The following may serve as a check list of possible materials:

(1) Tile—ceramic tile can now be obtained in colors, and is the most practical tile for floors. Quarry or similar tile can be used but is generally confined to kitchens. Glazed tile is dangerous and in any case will not wear well.

(2) Linoleum—particularly good for bathrooms, providing it is so laid with waterproof cement that no moisture will get under it. There are various grades and thicknesses, and a full line of colors and patterns. Stock strips about $\frac{5}{8}$ " and $1\frac{1}{2}$ " are also available.

(3) Rubber—a comfortable, resilient material, usually deemed better for a kitchen than a bath because of the detrimental effect of medicines, strong caustics, etc.

(4) Cork—an admirable material in appearance, but better on the walls than the floor because of the difficulty of maintaining a surface impervious to water and which will not spot. The color is unfortunately changed by waxing, and wherever chemicals spill. It is questionable whether it is absolutely sanitary for bathroom flooring.

(5) Asphalt tile—an inexpensive material not without its drawbacks as a bathroom floor, because oils stain it, as well as certain chemicals.

(6) Wood—not unusual in old houses or summer cottages, but presenting the difficult problem of making the surface waterproof so that the joists will not suffer, or the ceiling below. The paint used should be the variety recommended for decks or porches, which will resist water and alkalis. Shoe strips at the baseboard must be fitted with great care.

(7) Marble—a satisfactory floor so long as a porous variety is not used, because the latter will stain and change color.

(8) Cement—not to be used unless waterproofed. It is sometimes rejected by building inspectors because of porosity.

(9) Compositions—some of them, as one of magnesite, is particularly useful for alterations, and light in weight. In general, composition flooring must be laid only over its own type of screed, and not over concrete, for it may peel.

WALLS

Wall materials vary according to locality and desirability for different types of bathrooms, so the following ones are not compared to each other, but given as a check list:

(1) Cement—when free of alkalis it can be satisfactory for shower stalls, or as wainscot. Color can be mixed in the cement, or the surface painted afterward.

(2) Plaster—an economical material and still widely used from the floor upward for inexpensive work. It should be applied over metal lath or composition board to avoid cracks.

(3) Tile—a highly desirable material now that there are many types of texture and color from which to choose. The only drawback has been the tendency for occasional units to fall out, but this can be prevented by careful supervision at the time of erection.

(4) Marble—another highly desirable material, providing the client does not object to the cost. While the initial cost may be high, at least there are few if any upkeep expenses, and the effects possible are unsurpassable.

(5) Structural glass—like marble it is highly desirable, expensive, but making up in its lack of upkeep costs and its distinctive effects in color and design. Designs can be etched on it. When applied to plaster by means of a special cement, the plaster should first be given a coat of shellac.

(6) Steel—its surface is made to look like marble, wood, tile; also in geometric designs, plain colors, etc. It is a relatively new product, but of course will not crack when the building settles.

(7) Bakelite (Formica, Micarta, etc.)—a synthetic product usually laminated over wood, and supplied in finishes among which are plain colors, or effects imitative of wood,

marble, etc. It has a high polish and is impervious to anything that might ordinarily be used in a bathroom. While relatively new, it has withstood severe tests on exterior show-windows.

(8) Cork—a beautiful material in color and possible effects, varying in color from a deep chocolate to a pale tan. It can be applied directly to the plaster with special cement or mastic. Sound-deadening is one of its advantages.

(9) Linoleum—in itself a most satisfactory product, but it requires especial care to prevent moisture from getting behind it and causing trouble. A special paste is applied to the wall, $\frac{3}{4}$ " brads are nailed along the top, as well as a special dado cap when the linoleum is used as wainscoting. Corners also present a problem.

(10) Canvas, oilcloth, and their modern improvements—materials of the canvas variety should be imbedded in white lead and rolled on; some of the others are applied with ordinary wall-paper paste, but when moisture gets behind they may have a tendency to come off.

(11) Composition boards—the non-porous variety are best for a bathroom, but should be so worked out that joints are practically eliminated. Most boards come in long lengths and 4' widths, so that with careful planning the joints will occur only at the corners.

(12) Asbestos board—the finished product looks like anything but asbestos, since it imitates marble, tile, etc., or it comes in plain colors. In sheets it is nailed in place, joints are puttied, and a cap-molding is run along the top edge.

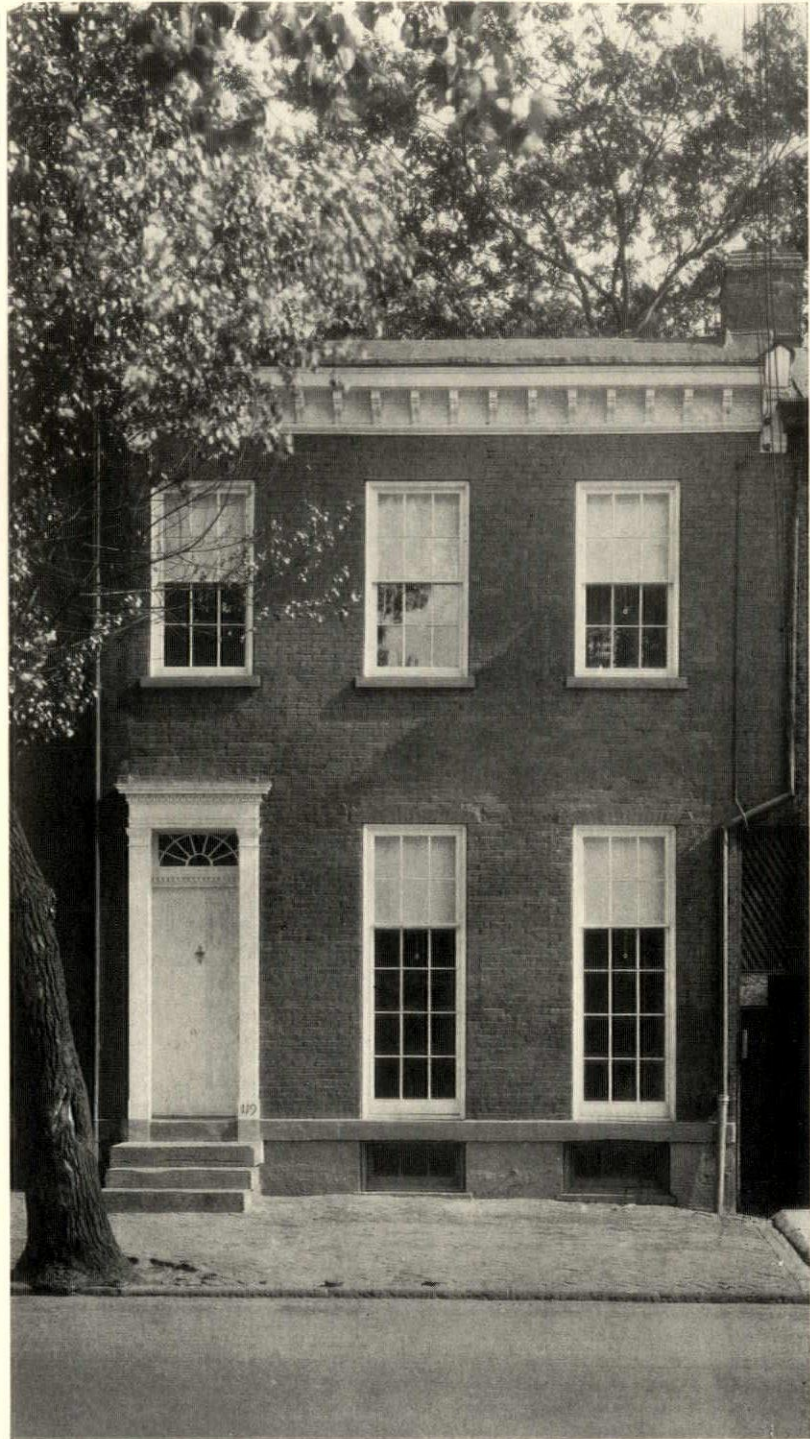
(13) Wall paper—its success will largely depend upon how well the paste adheres all over. It is sometimes varnished with good effect.

LIGHTING

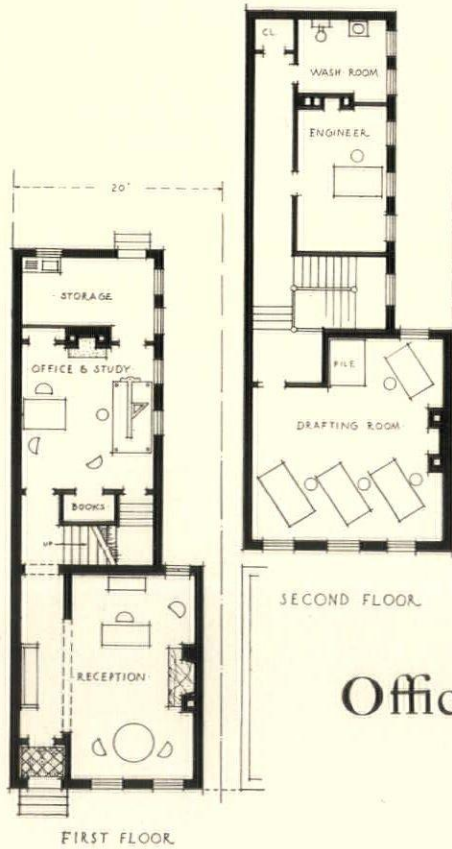
The height of luxury in lighting not so many years ago was to have a bracket on each side of the medicine cabinet. Within the last few years there have been many new developments, such as indirect lighting in a ceiling panel, adjustable and semi-indirect vertical lighting units at the sides of the medicine-cabinet mirror, light coming from the back of the mirror, horizontal semi-indirect lighting tubes for the top of the mirror, moisture-proof bulbs in the tub-shower recess, and an ultra-violet ceiling fixture.



The house as it was—the ordinary run-of-the-mine row house, for which Philadelphia, Pittsburgh, St. Louis, and other cities will have to answer on Judgment Day



Mr. Wolfe brought the façade back to an unpretentious respectability with surprisingly little change—new sash, removal of the applied wood heads, a new doorway, cleaned brickwork, and some white paint



Office of Lawrence Wolfe, Architect Pittsburgh, Pa.

« ARCHITECTURE »
DECEMBER, 1934

THE public in general resents weather. It is especially resentful of cold weather and hot weather.

Cold weather it treats with an aloof disapproval. There is a feeling, what with oil-burners and closed automobiles, that winter may be considered as under control. But summer!

Therefore schemes for the annihilation of hot weather receive respectful attention. The term "air-cooling" was soothing. The more perfected term, "air-conditioning," arouses unbridled enthusiasm, promising, as it does, not only frigidation but the complete emasculation of hot weather. How charming it would be for Mr. Average Citizen to sit back in his air-conditioned house and laughingly watch the fulminations of a torrid but comically ineffectual summer.

Yet there are some drawbacks to the frustration of heat and humidity. You can bench summer in theory but in practice it is apt to come back strong in the ninth inning and bat out a home run.

If climate is solely an engineering matter, air-conditioning is pure progress. If climate, however, is a device of nature for furnishing oxygen and sunshine, then air-conditioning is not an unmixed blessing.

The air-conditioning experts take a chunk of outside air, mix it with somewhat more than twice as much tired air people in the building have just finished breathing, launder it, freeze it, dry it, heat it up a little, and force the resulting concoction back into the building. This gives an atmosphere very pleasant to the skin, but it isn't fresh air.

The temptation will be, when and if air-conditioning becomes general, to hasten from one air-conditioned space to another—from office to restaurant, to theatre, and, mayhap, to air-conditioned home.

It is a delicious thought. But how about the big outdoors? What is summer for if it isn't to provide air and sunshine? Who is going to sit out of doors on terraces, or dig in gardens, or wham a tennis ball, or curse on greens, if he has been accustomed to sit by an air-duct? What epicure, trained to mechanical atmosphere, will go out into God's great uncooked air?

It's a rhetorical question. Perhaps there will be many who will. But the urge is going to be greater to stay indoors. Our comfortably heated buildings keep us housed

The Reflecting Pool

Erwin Bateman Morris

more and more, in winter. Air-conditioned places will increase the lure of indoors for summer.

Perhaps it is just an old-fashioned sentiment. But it seems wasteful to be under roof when one might be under sky. The joy of living is certainly increased when one can see sunshine and breathe hundred-percent air. There is the feeling of health and strength and vitality.

I look jealously at air-conditioning. It is bound to come and stay, and it is a precious comfort to the skin. But—in more ways than one—it is not so hot.

MR. LOUIS LABEAUME wrote me the other day to ask, "Were the great works of architecture, which we both admire, the manifestations of individual genius, or were they designed by Public Bureaus?"

There is a very interesting thought embodied in his question—a thought which is quite close to being an architectural principle.

The question refers, of course, to masterpieces, to those deathless structures which attain a success that could not be predicted at the time of their design and stand amid applause for generations—the grand slams, the holes-in-one.

The thought that naturally arises is: Is the production of such rare orchids the main object of architecture? Is an architect a cloistered genius producing masterpieces? Or is he an organizer of ideas, a researcher of materials, a marshaller of craftsmen, a person whose pencil strokes are the mere beginning of a series of steps requiring a considered understanding of stones and people?

I am not sure which of the above represents the highest aspiration of the architect, but I am inclined to believe that it is the steady producer of architecture and not the

grand-slam bidder who best fulfills his destiny.

Architectural masterpieces are to a considerable extent the result of fickle fortune. The McKim, Mead and Whites do not always design Columbia Libraries, the Charles Platts always Freer Galleries, the Shreve, Lamb and Harmons always Empire State Buildings.

Such architectural holes-in-one are the results of fortunate combinations of circumstances, of sympathetic environment, of successful blending in materials, of gentle weathering.

But architecture nowadays has come to be a thing of wide scope. It is a big business covering the co-ordination of many trades and sub-professions. The other day I was looking at Latrobe's Stephen Decatur house on Lafayette Square—grand old thing that it is—and thinking how simple the preparation of drawings for such a house could be—with no mechanical equipment, no fireproof framing, no steel sash, no wide variation of materials.

It is no longer the mere loving touch of the soft pencil. There enters into it organization. It is not genius alone, except insofar as genius is the infinite capacity for taking pains. It is the ability to cover many requirements and build them into architecture.

I like to think of the architect or the architectural organization not as a person or a team aiming at great glory and big head-lines, but as deriving keen satisfaction from the mere fact of co-ordinating the problem into its best architectural result.

If it is a sewage disposal plant, to which people would naturally not flock as a matter of cultural uplift but which has been nevertheless made a good piece of architecture, the architect has made his contribution to the community.

The Sullivan Joneses and the Louis Simonses, working with public architectural organizations, have their place. Sir Christopher Wren did most of his work as a salaried architect to the Crown. It is the organizations, no matter what their affiliation or background, which strive for the spread of architecture, that are important. I should rather contemplate ten buildings which by architectural processes had been stepped up from the mediocre to the good than one stepped from the good to the sublime.

« ARCHITECTURE »

DECEMBER, 1934

Saturday, September 29.—The Federal Housing Administration estimates that loans totaling a million dollars a day are being made under the plan for rehabilitation and minor improvements to homes. Just what effect this installment buying of improvements has had upon the profession is as yet undisclosed. It is a pity that architects are not better geared to the work of constant and close supervisory service, in which event they would have been kept busy at designing and supervising these small operations. The main promise of the National Housing Act, however, as it appears to me, still lies in another branch of its provisions—the providing of first mortgage money to the extent of 80 per cent of the value of the property, with an amortization plan covering twenty years, and insurance of the mortgage during that period. With that provision of the Act in effect, we should see a lot of new building next spring.

Monday, October 1.—Lunched with Charles Butler, Alfred Githens, and Frank Holden, hearing of the progress Githens and Wheeler (Baltimore librarian) are making with their book. It becomes clear that the whole basis of public library conduct—its planning, administration, maintenance—have changed radically since the shower of Carnegie libraries provided intellectual stimulation a generation ago. Githens says that a loft would serve better as the basis of a modern library than many of the elaborate monuments of a few decades ago. Flexibility is now the prime essential.

Tuesday, October 2.—The first unit of Knickerbocker Village was opened today with elaborate ceremonies before a gathering of five thousand interested spectators. Ex-Governor Al Smith, the Honorable Jesse H. Jones, Robert Moses, Aaron Rabinowitz—presiding—and most of the housing enthusiasts, were to be seen here and there in the throng. There has been a lot of argument about this project for which the R. F. C. made a big loan. The State Housing Authority approved the project, and the city waived some of its rights to make it possible. It is a twelve-story, elevator project, with rooms renting at about \$12.50. Naturally, at this rate it does not re-house the people who originally dwelt on this land. The half that is completed, however—eight hundred units—is ninety-eight per cent rented, which seems to indicate that economically the housing was needed in this locality, which happens to be a short walk from the City Hall and the financial district. What seems to have happened is that Mr. Fred F. French has replaced a block of the very worst slums with modern housing adapted to clerical workers in the downtown section.

Wednesday, October 3.—Lunched with Waldron Faulkner before his departure



The Editor's Diary

for Washington, where he is planning to establish another office. His thoughts these days are, however, largely on the subject of private schools, and he thinks there should be a book on the subject, which perhaps he himself will write. The subject of public schools has been fairly well covered, but the private school remains a problem that has to be worked out in each individual case.

Thursday, October 4.—Kenneth Murchison spoke to a luncheon gathering at the League today—the message of an architect transformed into a banker. Now that he has stepped out of the architectural field he sees the architect more clearly, and says that he is “composed of one part art, one part frozen music, and one part plumber.”

Saturday, October 6.—A recent feature article in *The Washington Post* lays the blame for our failure as a nation to solve the problem of low-cost housing and slum clearance upon three parties: organized labor, industry, and government. Organized labor demands too large a share of the building dollar. Industry, although aware of the benefits of mass production, has failed to present any semblance of a united front and a partnership with labor, which would re-employ building trade workers, create a demand for materials, and reduce costs. The government—federal, state, county, and municipal—has failed to enforce or enact public health laws, has hesitated to exercise condemnation rights, and has failed to act efficiently as a co-ordinator.

Monday, October 8.—Lunched with Ely Jacques Kahn, discussing his forthcoming book on design. He has some rather startling things to say about our president-day methods of teaching design—the result of his little jaunt around the world learning how they pass on knowledge and skill in other countries.

Thursday, October 11.—Thomas S. Holden, vice-president and chief statistician of the F. W. Dodge Corporation, inaugurated a new series of luncheon meetings at the League today on the general subject of the architect and the building industry. Mr. Holden had

some rather encouraging figures bearing upon the present unmistakable upward trend of building activity. Nevertheless, the most important impression I gained from his talk was a feeling of deep dissatisfaction with the attitude of the architectural profession in its relation to public works during the past two years. There are those who tell us that we should march upon Washington and demand our share in the public works program. It seems to me that that is just what we have been doing, albeit rather feebly, and as a result it is hardly surprising that many active forces in the administration regard the architects merely as another group of job hunters. It is somewhat analogous to a physician's going to the government and asking it for a yellow fever patient to treat. The medical profession does not do that. Instead, they offer the government the best fruits of their knowledge as to how yellow fever might be forever eliminated. If the architectural profession, instead of going as individuals, hat in hand, seeking post offices to design, had come forward with a constructive program for public works, the architect would stand in a much better light today than he does. It is quite conceivable that the profession might have gone to Washington, through the Institute possibly, with a program indicating that something much better could be done for this country than to build more post offices. Instead of seeking his own particular tidbit of public expenditures, the architect, if he had had the vision, might have shown the administration a way to civilize America.

Saturday, October 13.—While our hairs are graying or disappearing entirely, the next generation is stepping into the lists. The Architectural League of New York has on its list of candidates for membership Frederick G. Frost, Jr., Lee Lawrie, Jr., and Milton Lawrie.

Tuesday, October 16.—Dr. Carol Aro-novici presided over a gathering of housing officials and experts in the new library at Columbia today. There were pertinent remarks from Robert Kohn, Lewis Mumford, Henry Wright, Edward T. Hartman, Albert Mayer, Arthur Holden, and others, and the more I heard of this unassailable testimony, the more I was depressed by the overwhelming fact that for two years we have been talking much and accomplishing little. One speaker suggested that we might well start the discussion with a definition of low-cost housing. What is this elusive thing that we have talked so much about? There were several more or less facetious replies, one being, “the sort of housing we have never had and never will get.” I tried to phrase a definition myself: shelter that meets minimal requirements of decency for those who have never been able to afford such shelter.

Thursday, October 18.—Two days ago Mount Holyoke College touched off its new heating system, which marks a rather startling step away from the accepted type of central-station heating. The system consists of a battery of one hundred twenty electric oil furnaces—the stock type as used in house heating—a system in which any desired number of the units are operated at one time, as needed to supply the heating demands of the moment. Another startling departure from the usual practice lies in the fact that the steam risers, originating in the top of each unit, are immediately drawn down to a basement below the boiler room. The group as a whole has a total of about one thousand boiler horsepower, heating twenty-four buildings.

Monday, October 22.—*Better Homes in America* in co-operation with the Columbia Broadcasting System today inaugurated the series of broadcasts from the garage of the "Little House," built as a model on Park Avenue. It will be recalled that Roger H. Bullard and Clifford Wendehack designed a house for a building committee of the Association, to cost somewhere between six and nine thousand dollars, built anywhere in the United States, and meeting presumably the needs of the moderately small family. The house is almost finished—a curious anomaly on its present Park Avenue site, nestling in among large apartments. It promises to be the last word in ingenuity of plan and extent of science's contribution to the art of living. There is one thing I am afraid I can never forgive the architects—a fake chimney on one end of the building, put there apparently for the sake of symmetry of façade. I thought we had long since passed the day when one would go so far out of his way to be untrue in architecture.

Tuesday, October 23.—Charles M. Stotz and C. V. Starrett in from Pittsburgh with the results of two years' work representing a survey of the early architecture of western Pennsylvania. The western half of the State was combed through every back road and byway in the search for anything of significant value in architecture, built before 1860. The amount and quality of material found is amazing. For some mysterious reason, in our search of early American architectural monuments, we have skipped entirely over this part of the country, though there are houses ranking with Mount Pleasant Mansion near Philadelphia, reminiscent touches from Scotland, France, and England, as well as from the East Coast, and as most of us know, a fairly large bulk of work showing the Greek Revival influence. The results of this survey, made under the auspices of the Pittsburgh Chapter, A. I. A., and under C. M. Stotz's direction as chairman of the com-

mittee, should by all means be made a part of the recorded history of architecture in this country.

Thursday, October 25.—The architects of the Palace of the Soviets, Moscow, visited the League this afternoon on the occasion of an informal reception and tea in their honor. Of the three architects, Boris M. Iofan told us something of the tremendous scheme projected. Just as an example of what they are planning to do over there, there will be two auditoriums in the structure—one seating twenty thousand, the other six thousand. The total height of the building is to be 1,361 feet to the tip of the statue of Lenin which, in itself, is to be eighty meters high. Construction is scheduled to begin next year.

Harrison Gill and I went to a meeting of the New York Society of Craftsmen tonight, meeting under the chairmanship of its president, Maurice Heaton, and had a long and interesting discussion on the difference between a master craftsman and an industrial designer. A master craftsman conceives and makes with his own hands an object of use and beauty; some one buys it, and the craftsman is called upon to duplicate it for a friend of the purchaser. Perhaps he is called upon to make a hundred copies of this successful piece. Is he still a craftsman? If, in making this comparatively large quantity, he invokes the use of a machine or assistants, does he cease to be a craftsman? On the other hand, here is a man who draws on paper the representation of a glass goblet. He is striving for a beautiful form in line and mass. Having achieved this, he passes the drawing over to the glass maker to produce. The glass maker debates whether he will cast the glass or blow it, whether the material shall be clear, tinted, or fully colored. The man who originated the product may be called a designer, but he is certainly not a craftsman. In all the discussion there was no stress laid upon the fact that either one of these men is more valuable to civilization than the other, merely that there is a fundamental difference between them.



Friday, October 26.—Edward L. Bernays gave us a particularly pertinent bit of advice yesterday when he spoke before the architects at luncheon in the League club house. A fundamental principle of public relations technique is to have someone else tell the world how good you are—"we are advertised by our loving friends"—all of which bears out the conviction I expressed the other day to the effect that the architectural profession has done itself no good whatever by perpetually clamoring at Washington for its share of the loot.

Monday, October 29.—Dear old England has just opened an exhibition of mechanical gadgets. The *New York Times* correspondent tells us that there are rubber collar buttons attached to the shirt, reversible neckties, automatic dust-brushes, window cleaners, boiled egg decapitators, and a lot more of the fruits of man's ingenuity and everlasting search for comfort. Nevertheless, we see no signs and hear no news of the Englishman making any improvement in the way he carries coal up stairs to heat his house with an open fire—if you care to call it heated.

Wednesday, October 31.—Spent most of the day in the semi-annual meeting of The Producer's Council, on which occasion were discussed many matters of vital interest to the building industry.

At luncheon we were instructed in the amazingly manifold uses of cork products. In the afternoon J. C. Bebb, president of the Council, emphasized the necessity for maintaining in our public and private buildings a high standard of materials—there is obvious danger in the present insistence by public officials upon building within arbitrary unit costs. J. C. Knapp, vice-president of the Otis Elevator Company, read an excellent paper on obsolescence insurance which contains a message that every architect should hear. We are printing this in an early issue. Thomas S. Holden gave us a picture of the vast possibilities lying just ahead of the building industry. The session moved on to its formal dinner and evening session, in which, under Mr. Bebb's toastmastership, Robert H. Catherine, assistant deputy administrator of the Federal Housing Administration, told us many of the details of Titles II and III of the National Housing Act which are shortly to be made public. M. J. Beirn, vice-president of the American Radiator-Standard Sanitary Corporation, spoke enthusiastically about the results of his company's well-organized efforts to make of Title I of the Housing Act a business opportunity. Frederick L. Ackerman pointed out that it seems likely, according to the present setup, that loans will be made under Title II for housing projects on the basis of the technical skill shown in their development. This is a right-about-face, for since 1889, when a competition produced the famous dumbbell plan, up through various competitions in this field, it is now recognized that these buildings were obsolete when they were erected. Maximum coverage was an essential to secure a maximum loan, thereby defrauding the public of light and air which the technical skill would have been able and eager to furnish. In these loans now to be made and insured, the first essential is a high degree of technical skill, producing a maximum of light and air and a minimum of coverage under the other bounds of cost and public needs.

THE NINETY-EIGHTH IN A SERIES OF COLLECTIONS OF PHOTOGRAPHS
ILLUSTRATING VARIOUS MINOR ARCHITECTURAL DETAILS

ARCHITECTURE'S PORTFOLIO OF MODERN LIGHTING FIXTURES

*Subjects of previous portfolios are listed below
at left and right of page*

❖ 1926
DORMER WINDOWS
SHUTTERS AND BLINDS

❖ 1927
ENGLISH PANELLING
GEORGIAN STAIRWAYS
STONE MASONRY TEXTURES
ENGLISH CHIMNEYS
FANLIGHTS AND OVERDOORS
TEXTURES OF BRICKWORK
IRON RAILINGS
DOOR HARDWARE
PALLADIAN MOTIVES
GABLE ENDS
COLONIAL TOP-RAILINGS
CIRCULAR AND OVAL WINDOWS

❖ 1928
BUILT-IN BOOKCASES
CHIMNEY TOPS
DOOR HOODS
BAY WINDOWS
CUPOLAS
GARDEN GATES
STAIR ENDS
BALCONIES
GARDEN WALLS
ARCADES
PLASTER CEILINGS
CORNICES OF WOOD

❖ 1929
DOORWAY LIGHTING
ENGLISH FIREPLACES
GATE-POST TOPS
GARDEN STEPS
RAIN LEADER HEADS
GARDEN POOLS
QUOINS
INTERIOR PAVING
BELT COURSES
KEYSTONES
AIDS TO FENESTRATION
BALUSTRADES

❖ 1930
SPANDRELS
CHANCEL FURNITURE
BUSINESS BUILDING ENTRANCES
GARDEN SHELTERS
ELEVATOR DOORS
ENTRANCE PORCHES
PATIOS
TREILLAGE
FLAGPOLE HOLDERS



*Below are the subjects of
forthcoming Portfolios*

Circular Gothic Windows
JANUARY

Tile Roofs
FEBRUARY

Molded Brick
MARCH

Dormer Windows
APRIL

Entrance Seats
MAY

Overdoors, Interior
JUNE

*Photographs showing interesting
examples under any of these head-
ings will be welcomed by the Edi-
tor, though it should be noted that
these respective issues are made up
about six weeks in advance of
publication date.*

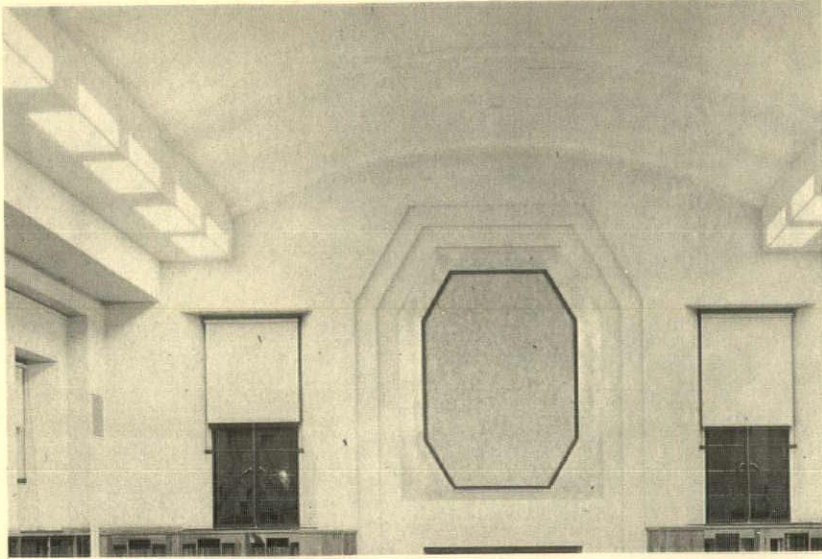
1930 ❖
CASEMENT WINDOWS
FENCES OF WOOD
GOTHIC DOORWAYS

1931 ❖
BANKING-ROOM CHECK DESKS
SECOND-STORY PORCHES
TOWER CLOCKS
ALTARS
GARAGE DOORS
MAIL-CHUTE BOXES
WEATHER-VANES
BANK ENTRANCES
URNS
WINDOW GRILLES
CHINA CUPBOARDS
PARAPETS

1932 ❖
RADIATOR ENCLOSURES
INTERIOR CLOCKS
OUTSIDE STAIRWAYS
LEADED GLASS MEDALLIONS
EXTERIOR DOORS OF WOOD
METAL FENCES
HANGING SIGNS
WOOD CEILINGS
MARQUISES
WALL SHEATHING
FRENCH STONEMASONRY
OVER-MANTEL TREATMENTS

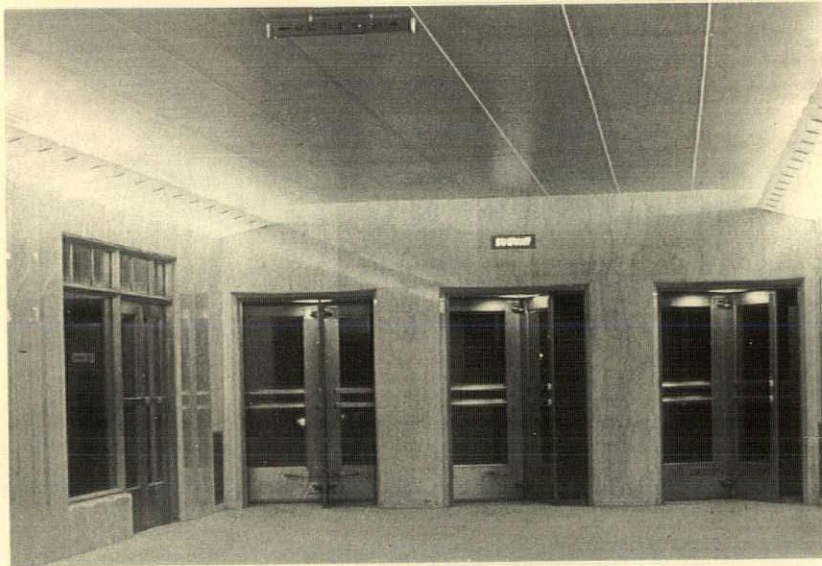
1933 ❖
BANK SCREENS
INTERIOR DOORS
METAL STAIR RAILINGS
VERANDAS
THE EAGLE IN SCULPTURE
EAVES RETURNS ON MASONRY
GABLES
EXTERIOR LETTERING
ENTRANCE DRIVEWAYS
CORBELS
FEW ENDS
GOTHIC NICHES
CURTAIN TREATMENT AT
WINDOWS

1934 ❖
EXTERIOR PLASTERWORK
CHURCH DOORS
FOUNTAINS
MODERN ORNAMENT
RUSTICATION
ORGAN CASES
GARDEN FURNITURE
WINDOW HEADS, EXTERIOR
SPIRES
BUSINESS BUILDING LOBBIES
ROOF TRUSSES

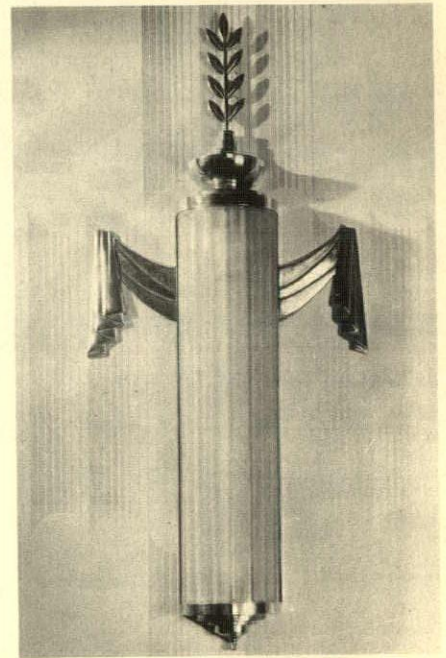
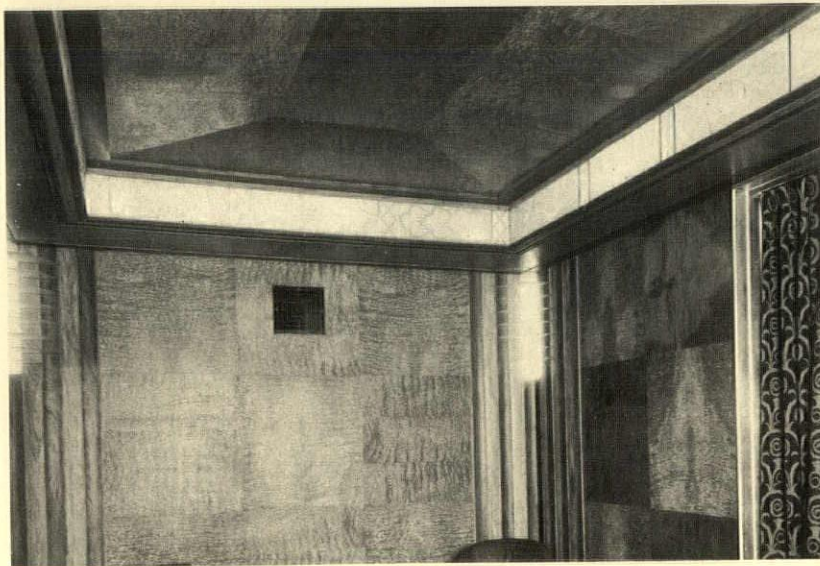


*Winchester (Mass.) Public Library
Robert Coit;
Kilham, Hopkins & Greeley*

*Goelet Building, New York City
E. H. Faile & Company*



*Irving Trust Company, New York
Voorhees, Gmelin & Walker
Kantack & Company, Inc.*

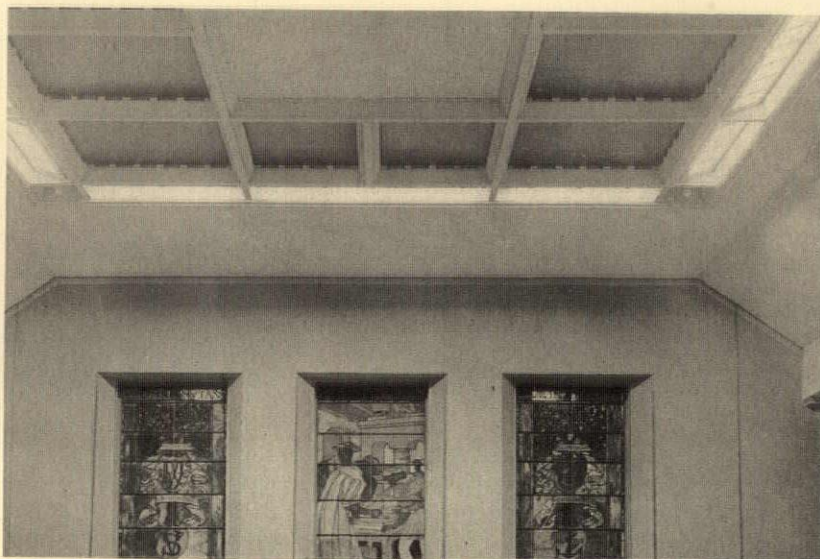
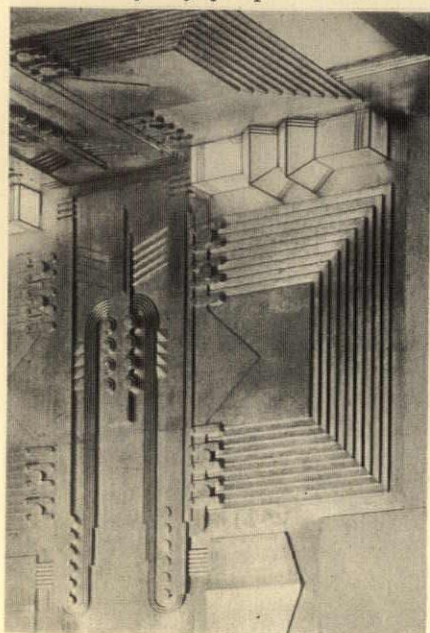


*Lurette V. A. Guild
Chase Brass & Copper
Company, Inc.*

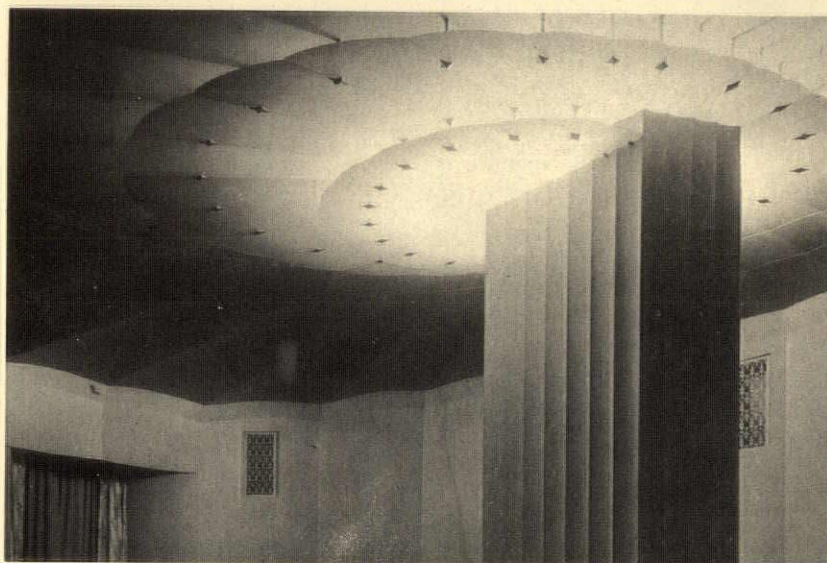
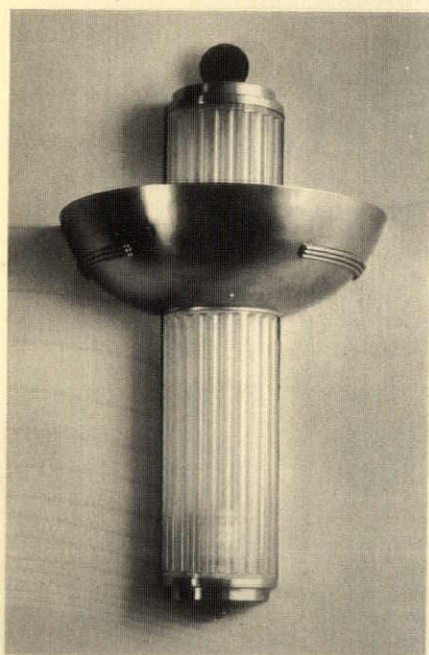
*Paramount Theatre,
Oakland, Calif.
J. R. Miller & T. L. Pflueger*

*Winchester (Mass.) Public Library
Robert Coit;
Kilham, Hopkins & Greeley*

*Holland Plaza Building,
New York City
The Firm of Ely Jacques Kahn*

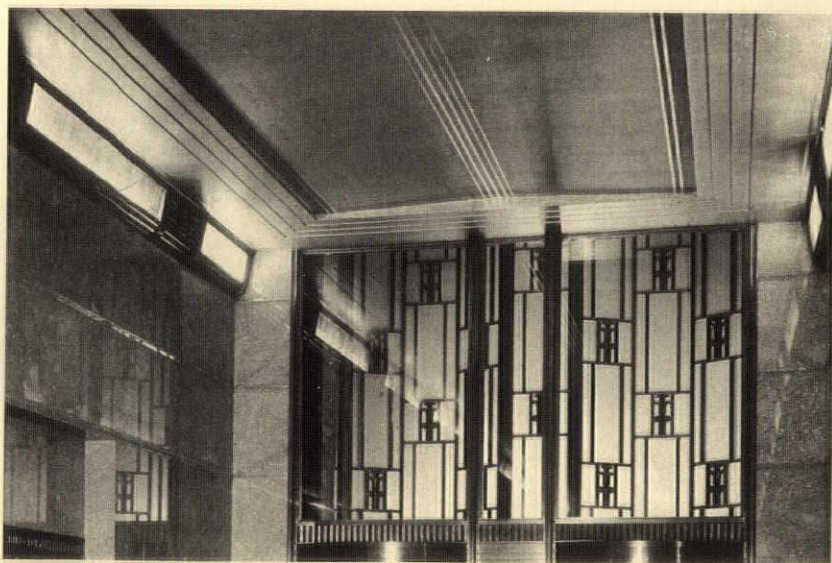


*Irving Trust Company, New York
Voorhees, Gmelin & Walker
Kantack & Company, Inc.*



*Lurelle V. A. Guild
Chase Brass & Copper
Company, Inc.*

*Bankers Trust Company Building,
New York City
Shreve, Lamb & Harmon*

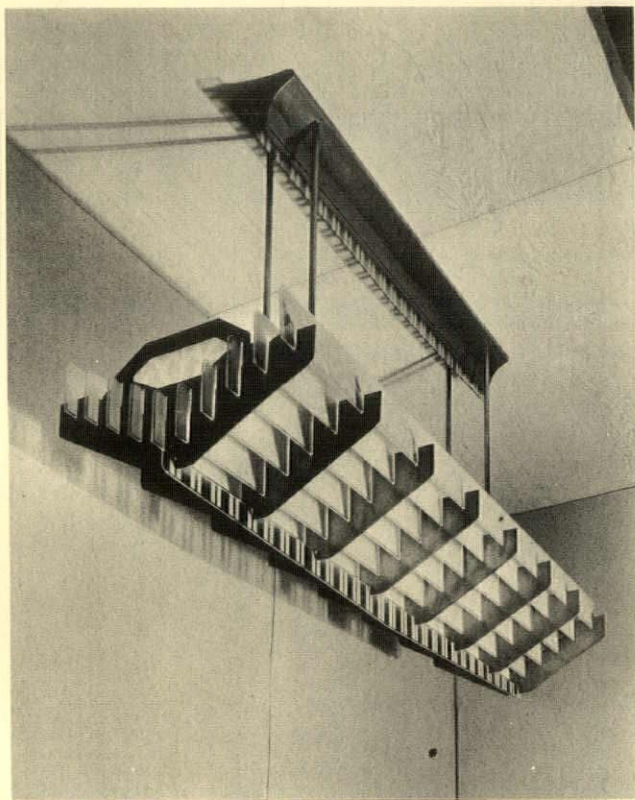


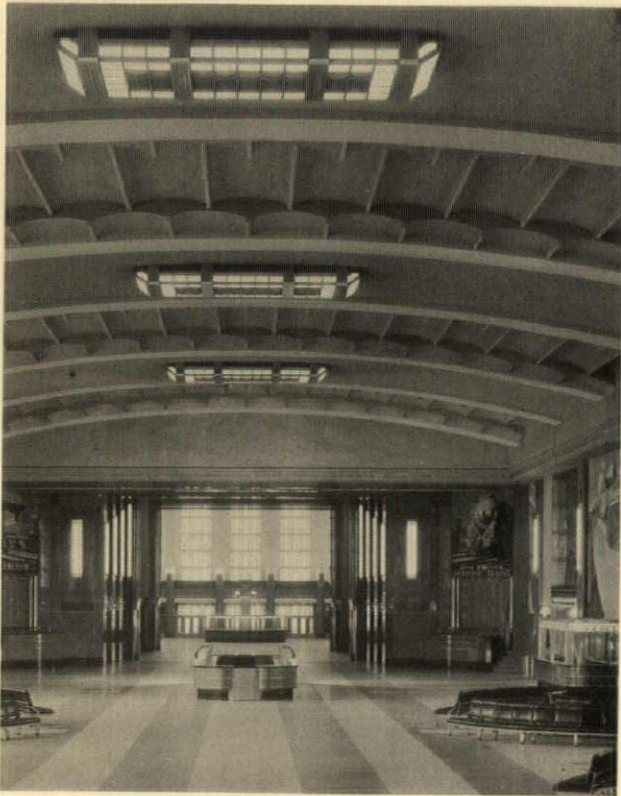


*Paramount Theatre, Oakland, Calif.
 J. R. Miller & T. L. Tflueger
 State Office Building, Bay City, Mich.
 Joseph Goddeyne
 Maurice Heaton*



*Constitution Hall of the D. A. R.,
 Washington, D. C.
 Office of John Russell Pope
 Paramount Theatre, Oakland, Calif.
 J. R. Miller & T. L. Pflueger*





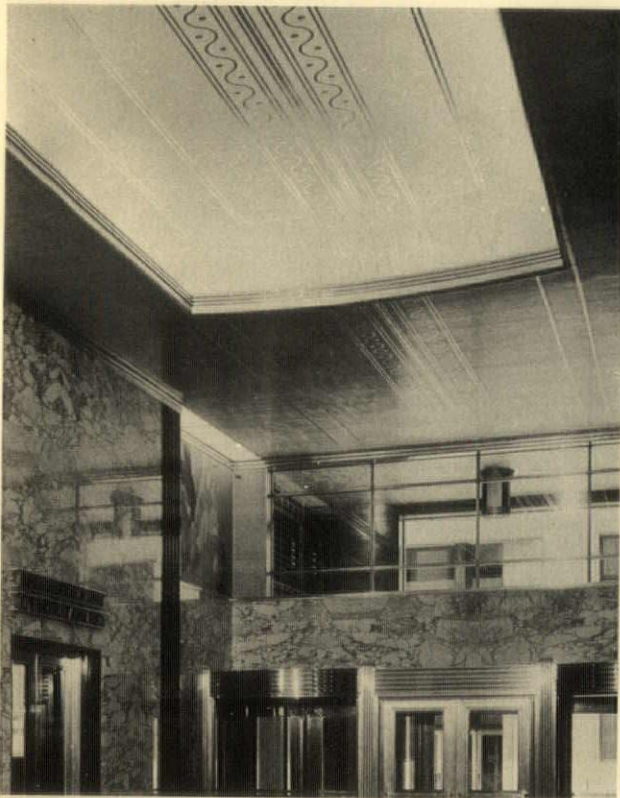
*Cincinnati (Ohio) Union Terminal
Fellheimer & Wagner*

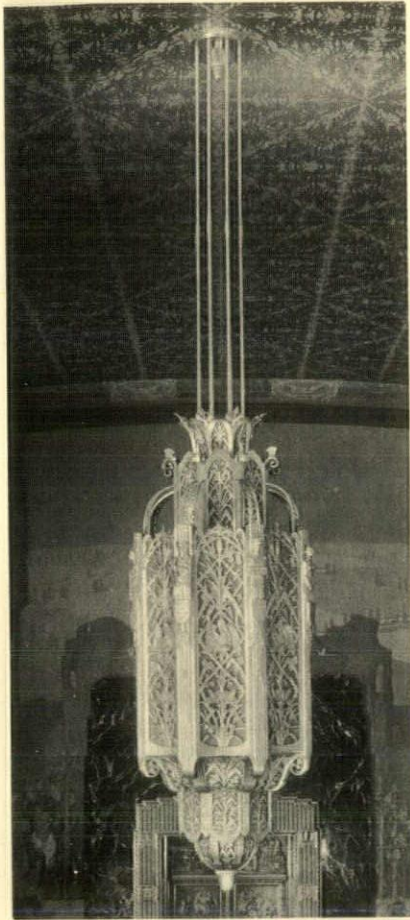


*Fidelity Bank Building, Kansas City, Mo.
Hoit, Price & Barnes*

*Insurance Company of North America, New York City
Shreve, Lamb & Harmon*

*Yardley & Company, Ltd., New York City
The Firm of Ely Jacques Kahn*

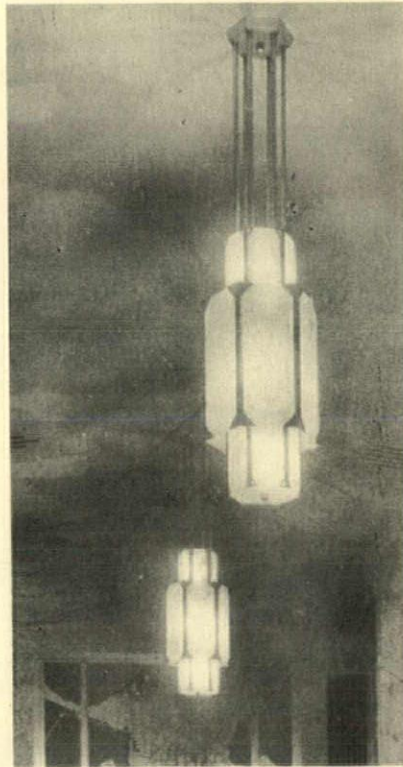




Louisiana State Capitol,
Baton Rouge
Weiss, Dreyfous & Seiferth

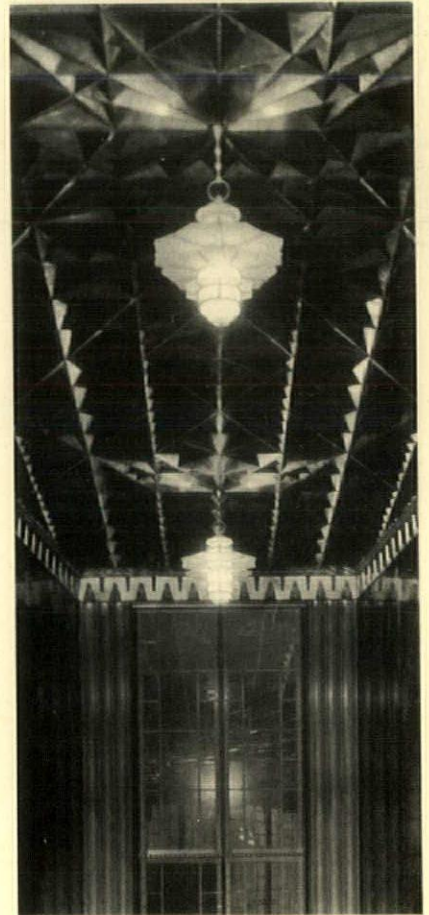


Paramount Theatre,
Oakland, Calif.
J. R. Miller & T. L. Pflueger

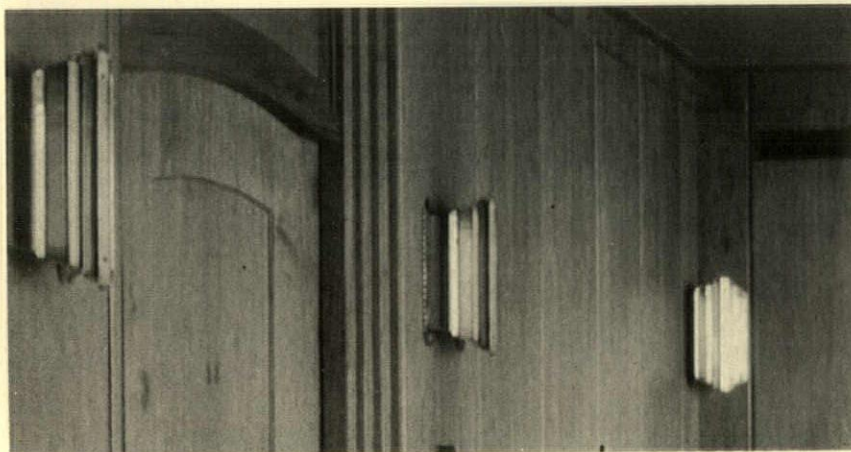


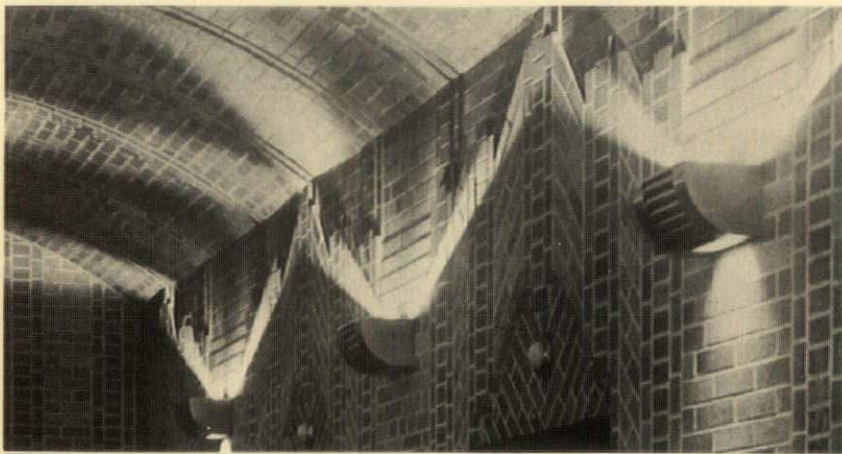
75 Federal Street, Boston, Mass.
Thomas M. James Company

San Francisco Stock Exchange
J. R. Miller & T. L. Pflueger



Conference Room of
Holabird & Root,
Chicago, Ill.
Holabird & Root

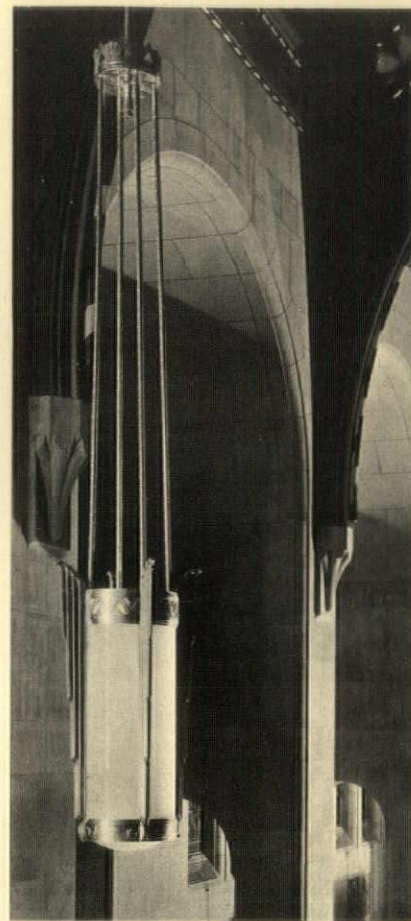
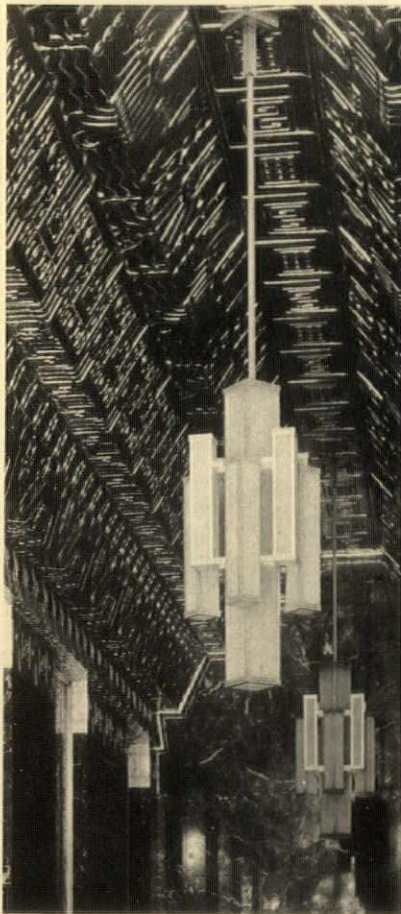




*Western Union Building,
New York City
Voorhees, Gmelin & Walker*

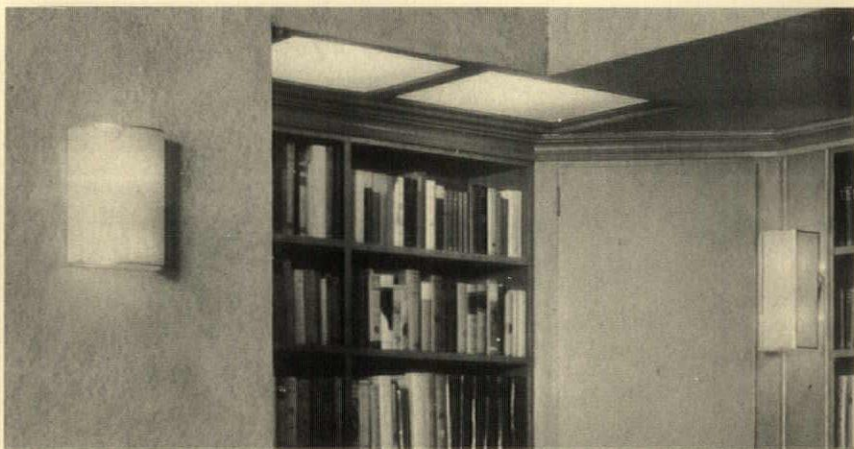
*First National Bank Building,
Yonkers, N. Y.
Cambridge Wheatley*

*"Four-fifty Sutter,"
San Francisco, Calif.
J. R. Miller & T. L. Pflueger*



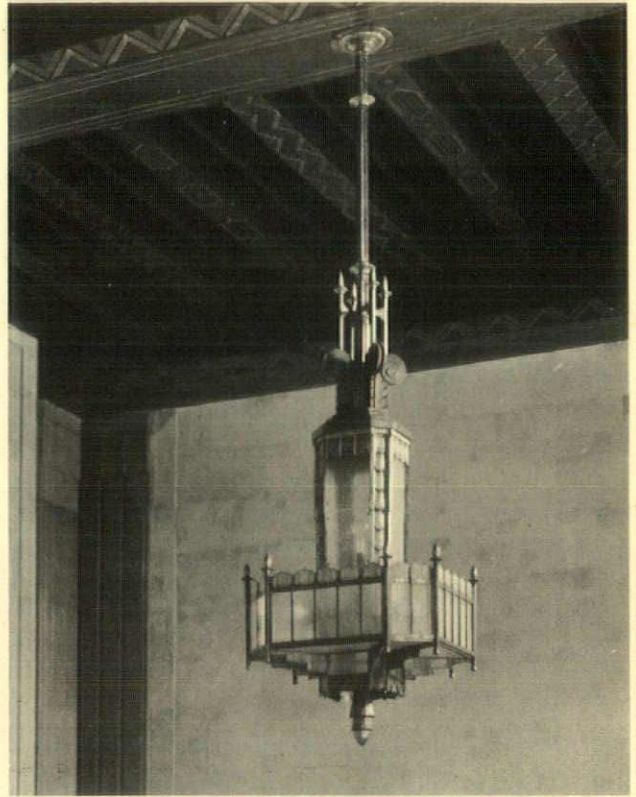
*Church of St. Katharine of Sienna,
Baltimore, Md.
Henry D. Dagit & Sons
The Iron-Craftsmen*

*Modern Library Offices,
New York City
Lucian Bernhard*





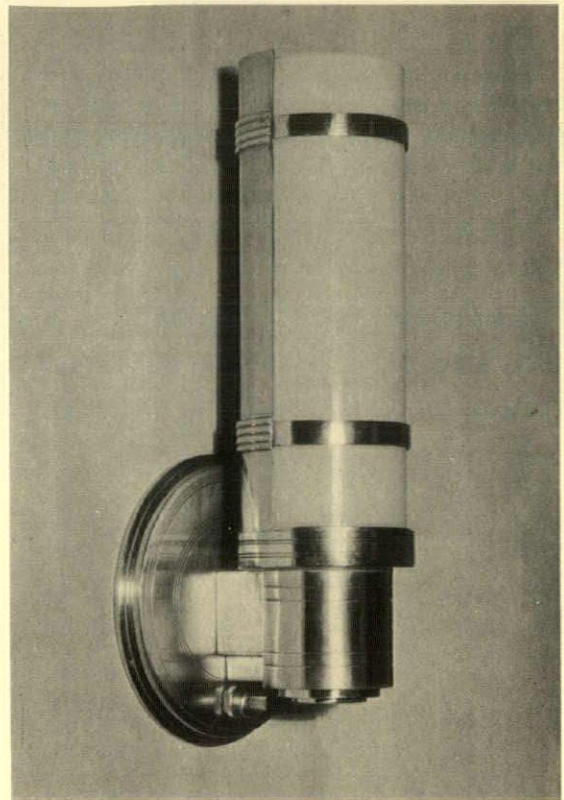
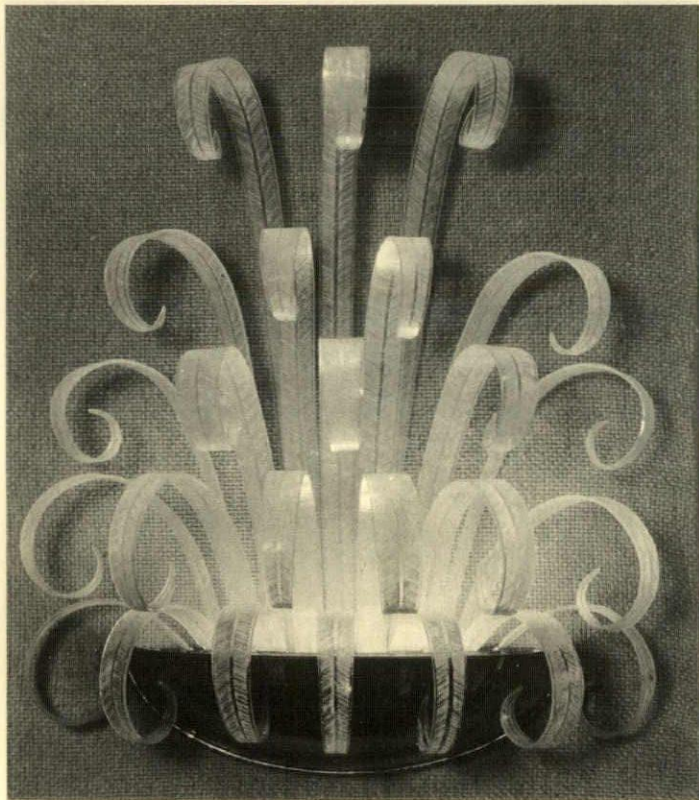
*Louisiana State Capitol, Baton Rouge
Weiss, Dreyfous & Seiferth*

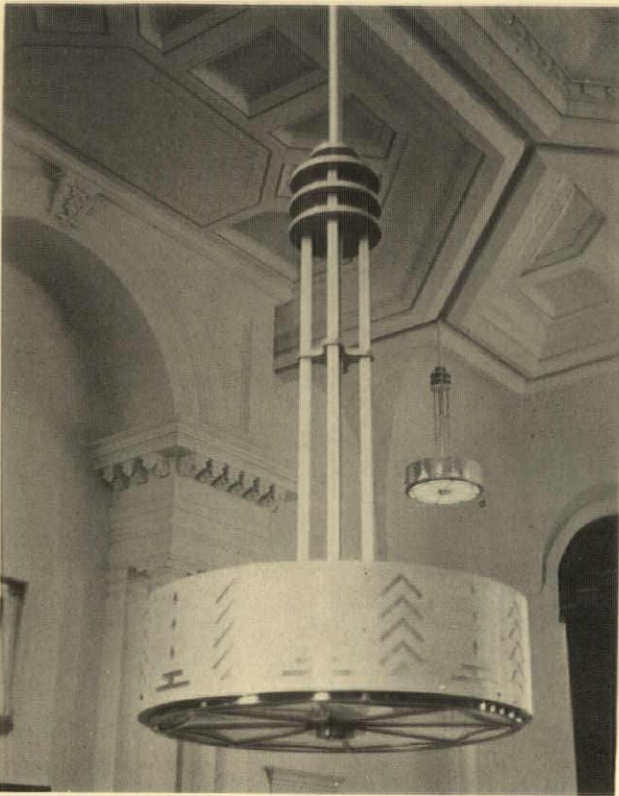


*Martin Maloney Memorial Clinic, Philadelphia, Pa.
Tilden, Register & Pepper
The Iron-Craftsmen*

*State Office Building, Bay City, Mich.
Joseph Goddeyne
Maurice Heaton*

*William Cook
Warman & Cook, Inc.*





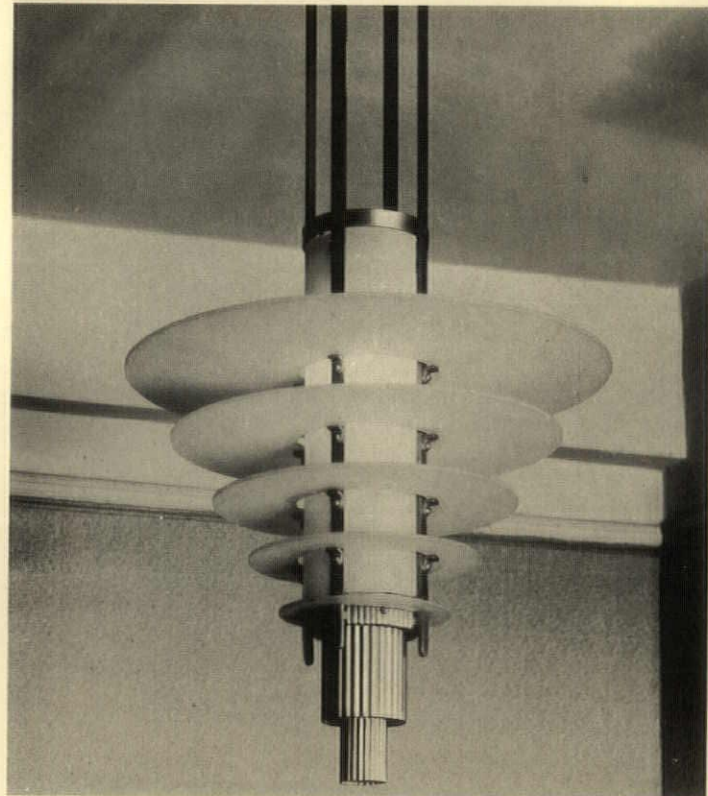
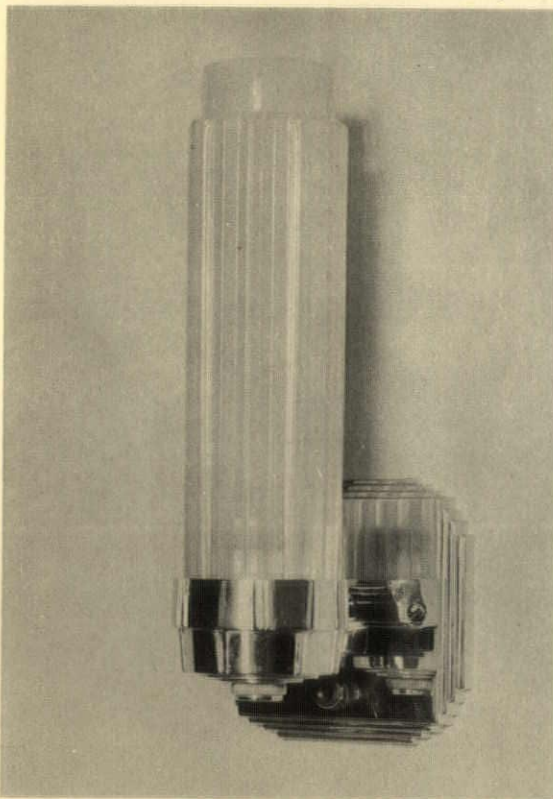
*Northumberland County Court House, Sunbury, Pa.
Davis & Rice*

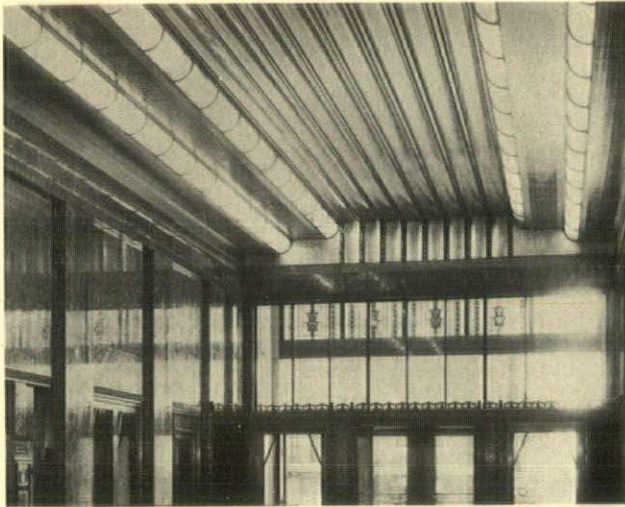


*Business Office
Metropolitan Museum Exhibition, 1929
Raymond M. Hood*

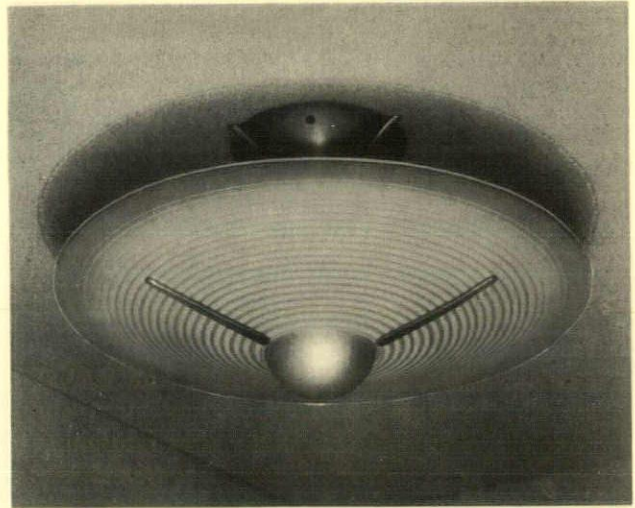
*William Cook
Warman & Cook, Inc.*

*Andrew Crowell
Black & Boyd Manufacturing Company*

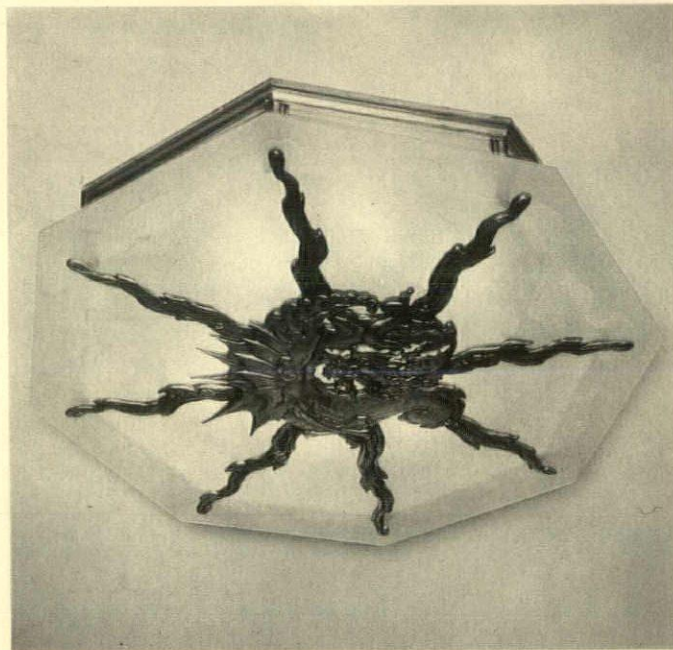




*New Center Building,
Detroit, Mich.
Albert Kahn, Inc.*



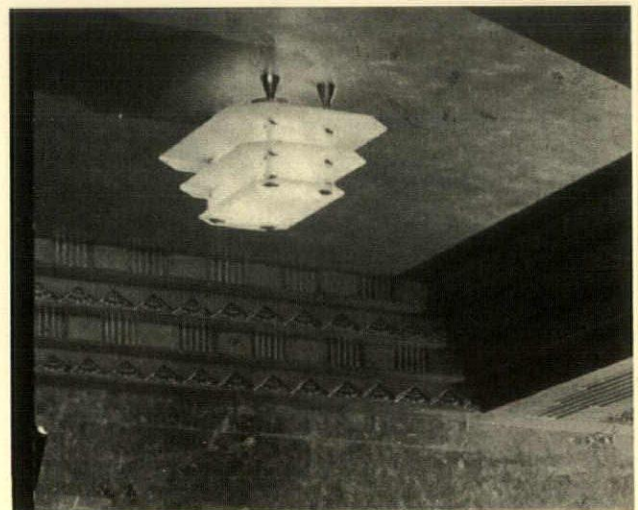
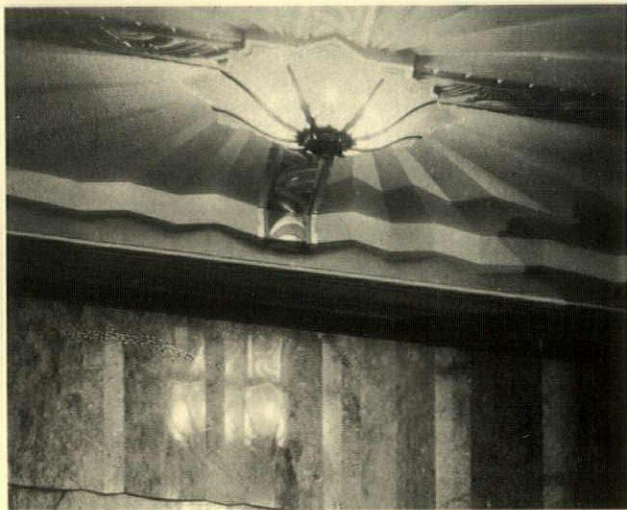
*State Office Building,
Bay City, Mich.
Joseph Goddeyne
Maurice Heaton*

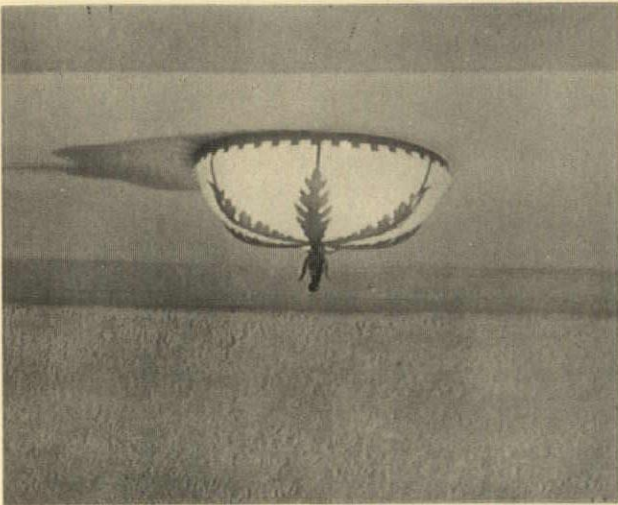


*The Worcester (Mass.)
Memorial Auditorium
L. W. Briggs Co.,
Frederick C. Hirons
Cox, Nostrand &
Gunnison*

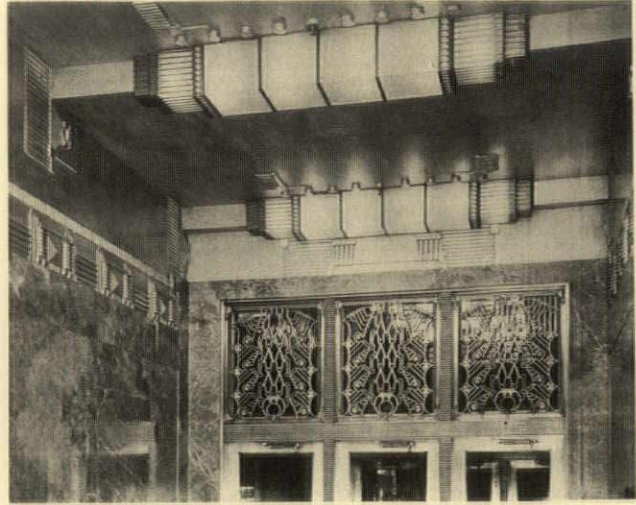
*Sixty Wall Tower,
New York City
Clinton & Russell;
Holton & George*

*Lefcourt National
Building,
New York City
Shreve & Lamb*

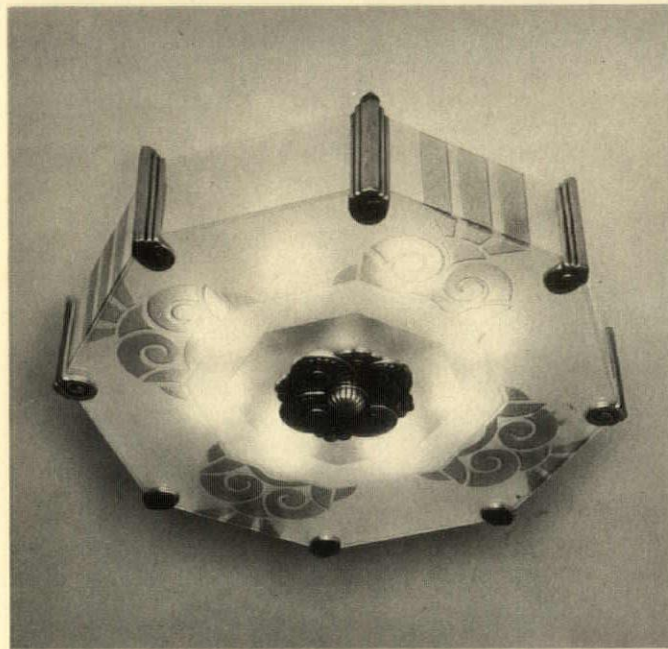




*West Side Y. M. C. A.,
New York City
Dwight James Baum*



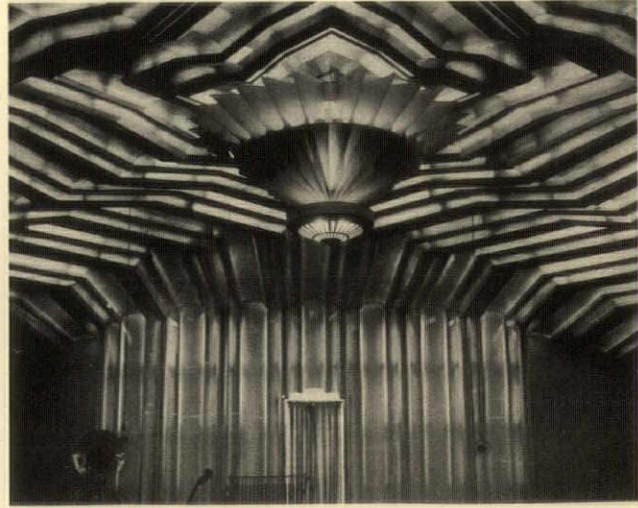
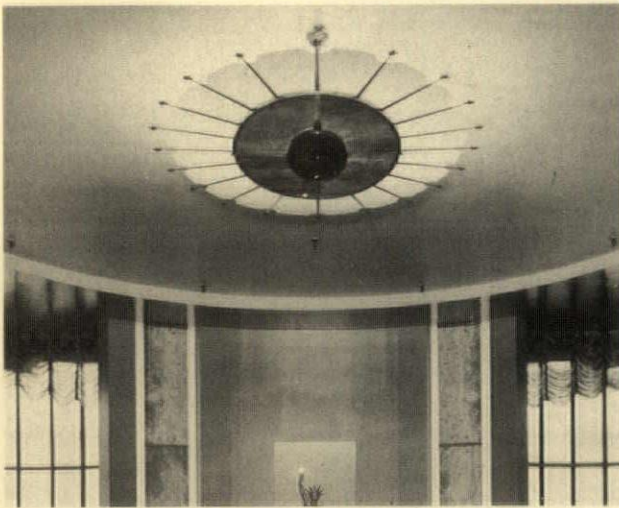
*Office Building,
29th Street and
Fifth Avenue,
New York City
The Firm of
Ely Jacques Kahn*

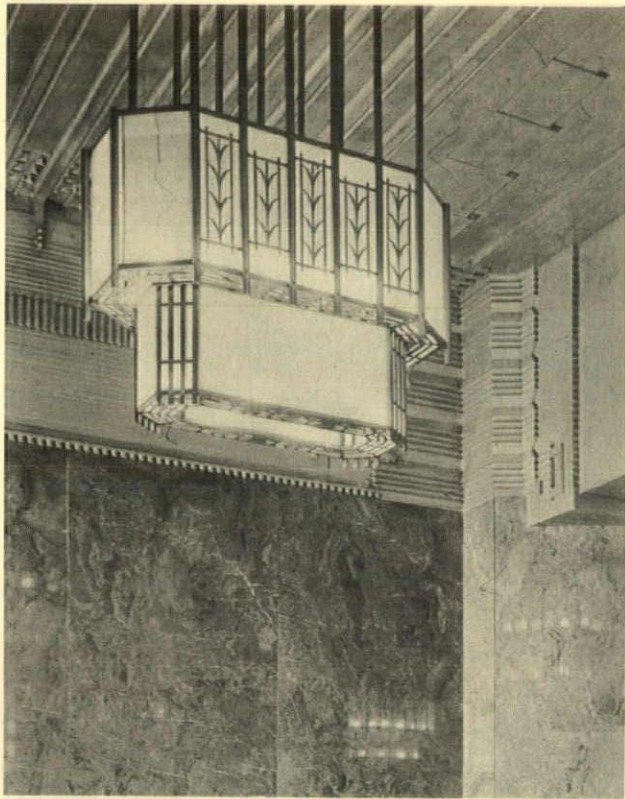


*The Worcester (Mass.)
Memorial Auditorium
L. W. Briggs Co.,
Frederic C. Hiron
Cox, Nostrand &
Gunnison*

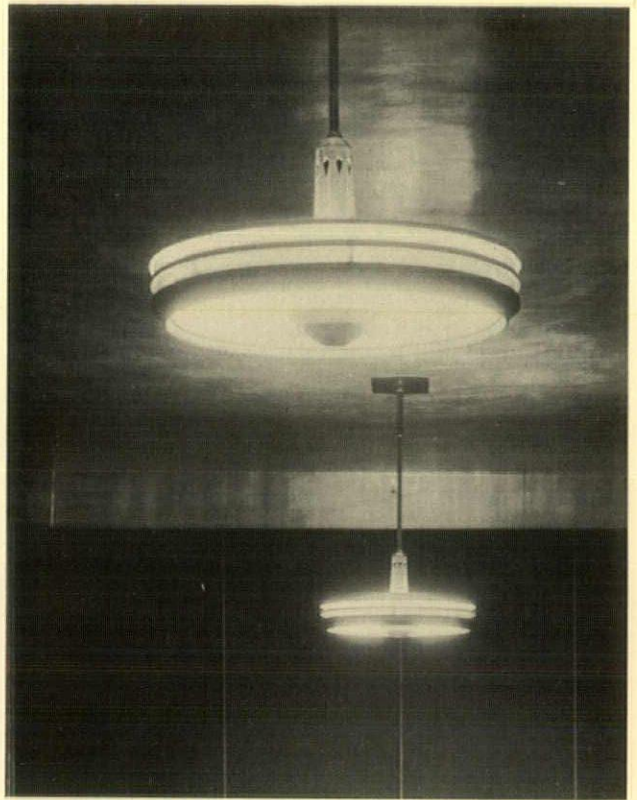
*Wanamaker's Men's
Store,
Philadelphia, Pa.
John T. Windrim*

*Bal Tabarin,
San Francisco, Calif.
J. R. Miller &
T. L. Pflueger*





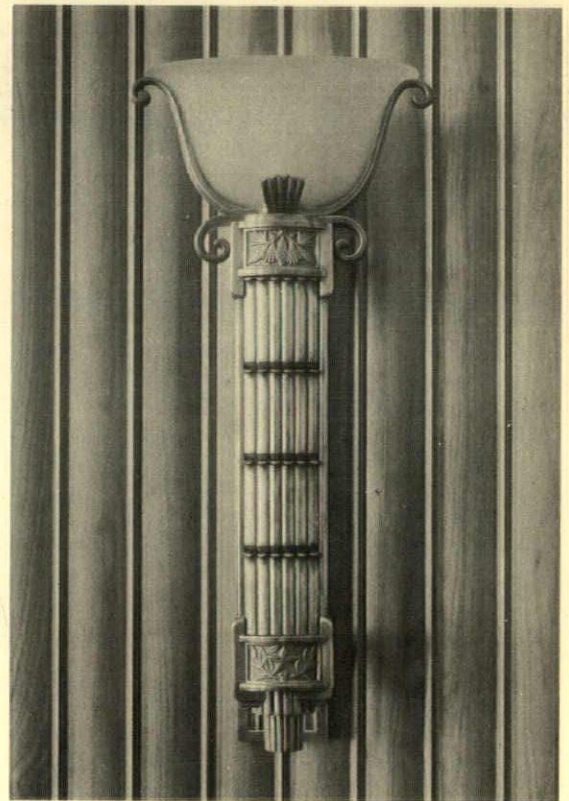
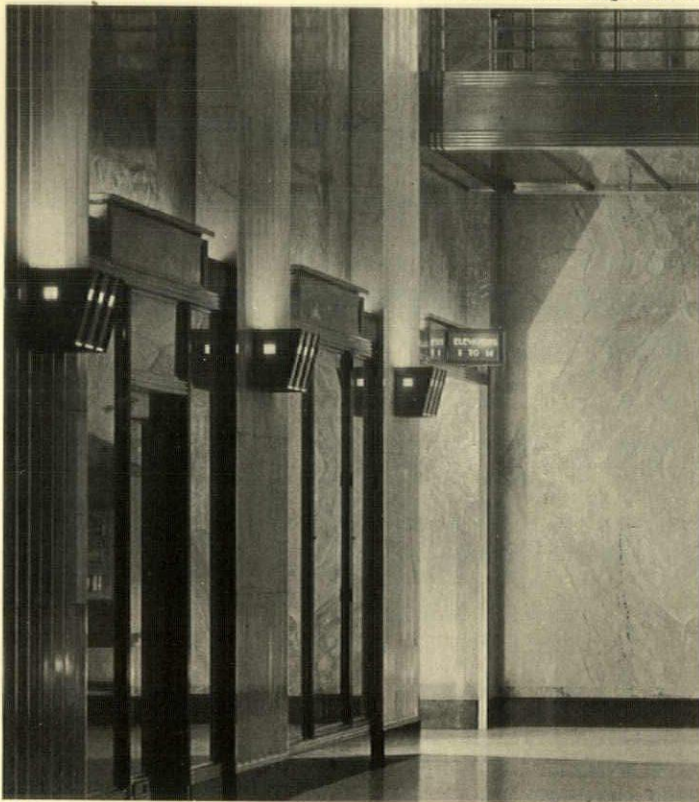
*Squibb Building, New York City
The Firm of Ely Jacques Kahn*



*Irving Trust Company Building, New York City
Voorhees, Gmelin & Walker
Kantack & Company, Inc.*

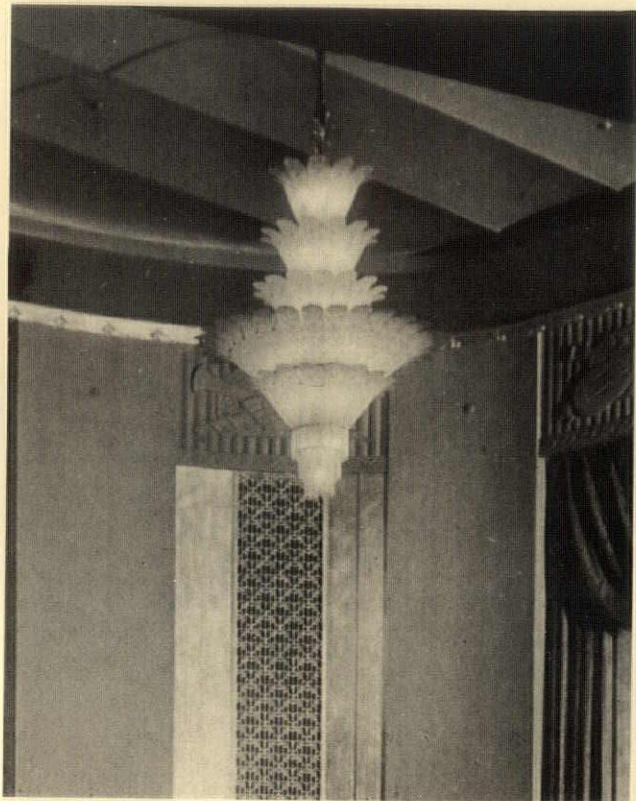
*Field Building, Chicago, Ill.
Graham, Anderson, Probst & White
The Frink Corporation*

*Louisiana State Capitol, Baton Rouge
Weiss, Dreyfous & Seiferth*





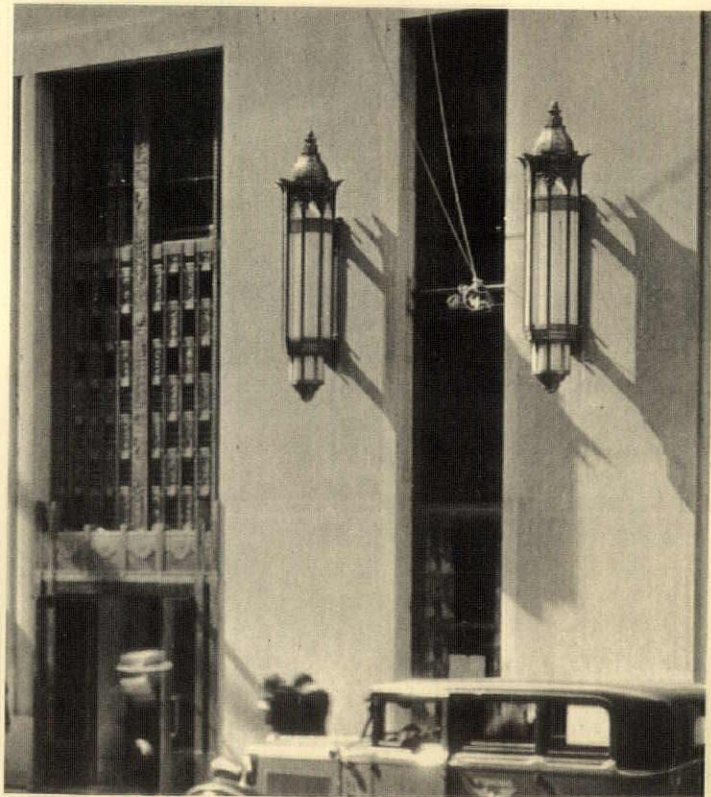
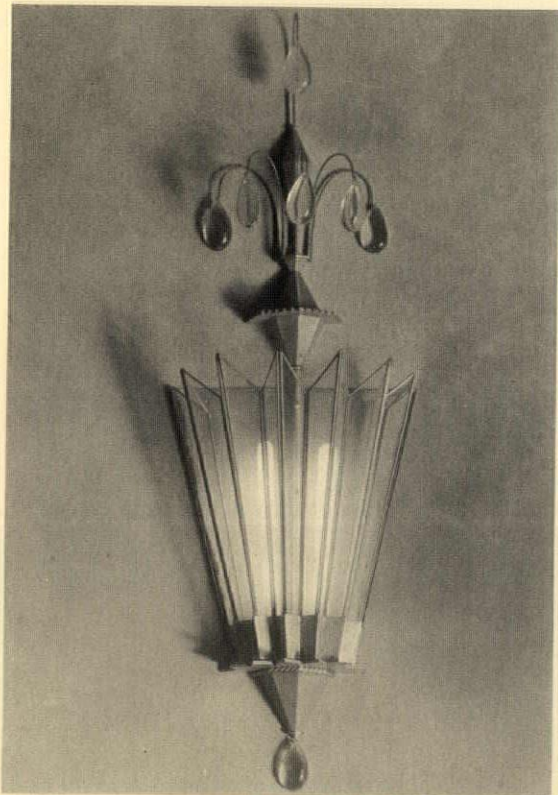
*Christian Science Chapel, Glen Cove, N. Y.
Delano & Aldrich*

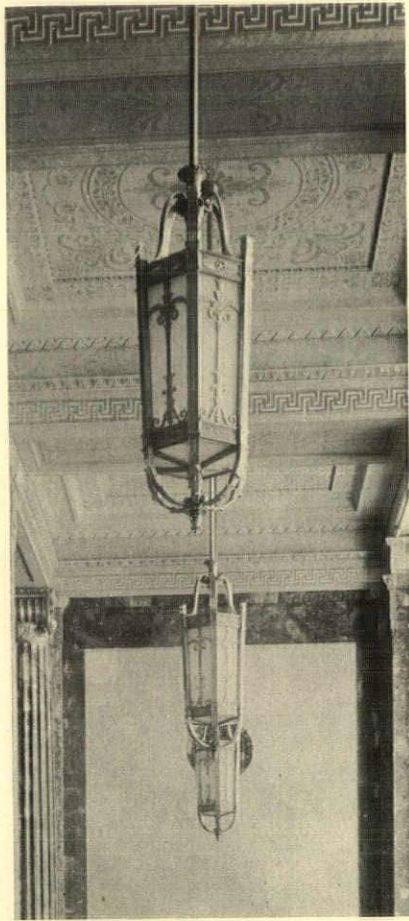


*Women's Club, Chicago, Ill.
Holabird & Root*

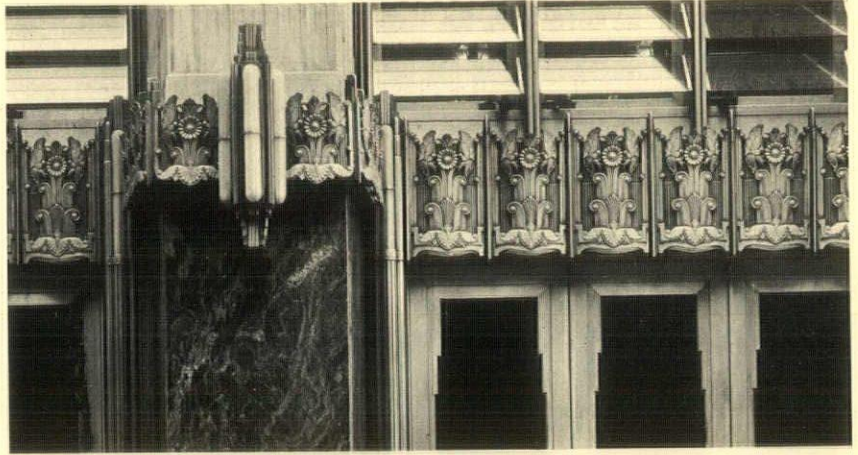
*Premier Catering Company, Los Angeles, Calif.
Julius Davidson*

*The Waldorf-Astoria Hotel, New York City
Schultze & Weaver*





*Louisiana State Capitol,
Baton Rouge
Weiss, Dreyfous & Seiferth*

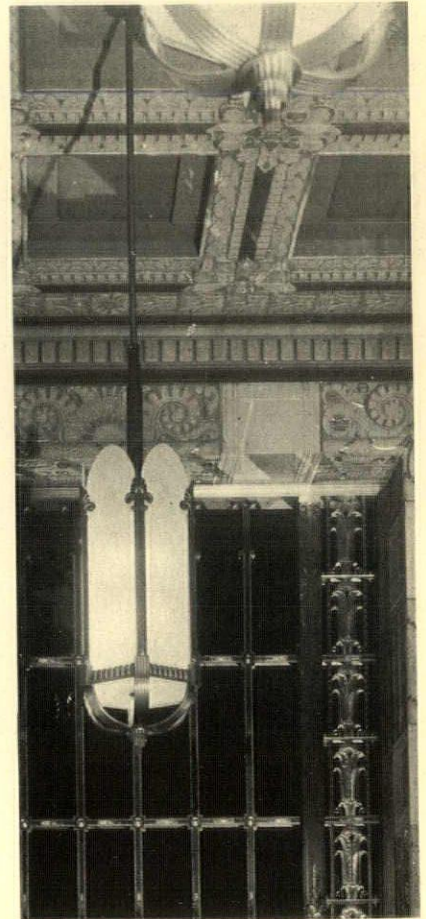


*Sixty Wall Tower, New York City
Clinton & Russell;
Holton & George*

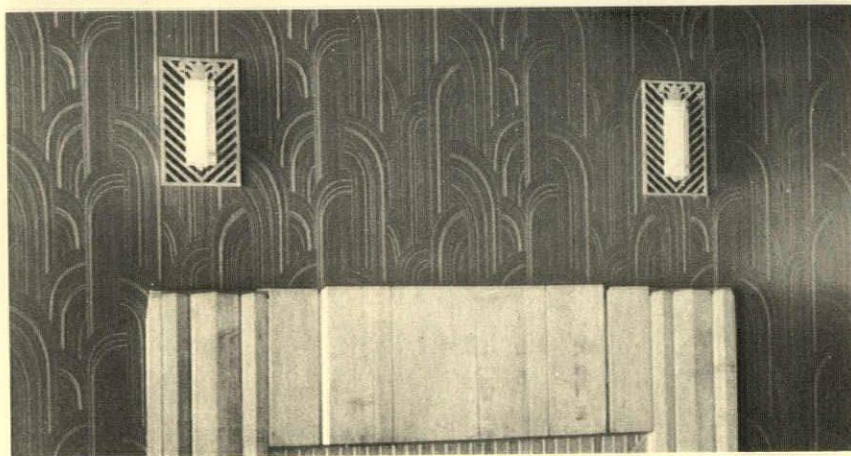


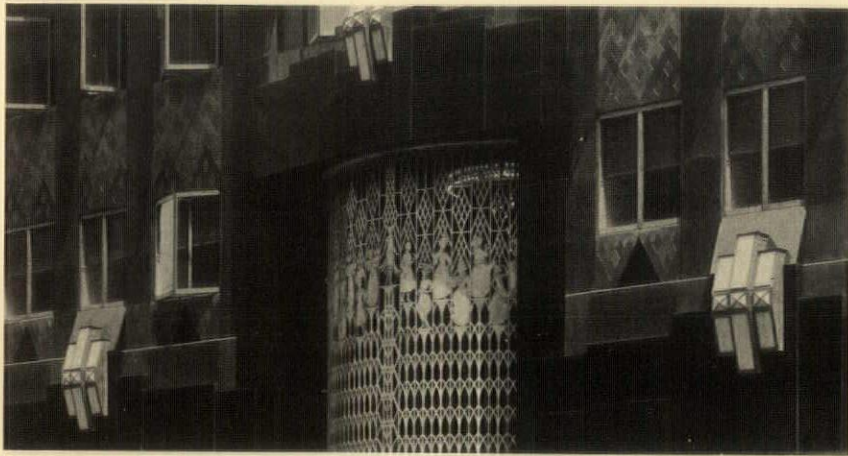
*Lurelle V. A. Guild
Chase Brass & Copper
Company, Inc.*

*Fidelity Bank Building,
Kansas City, Mo.
Hoit, Price & Barnes*



*Seaman House Y. M. C. A.,
New York City
Shreve, Lamb & Harmon*

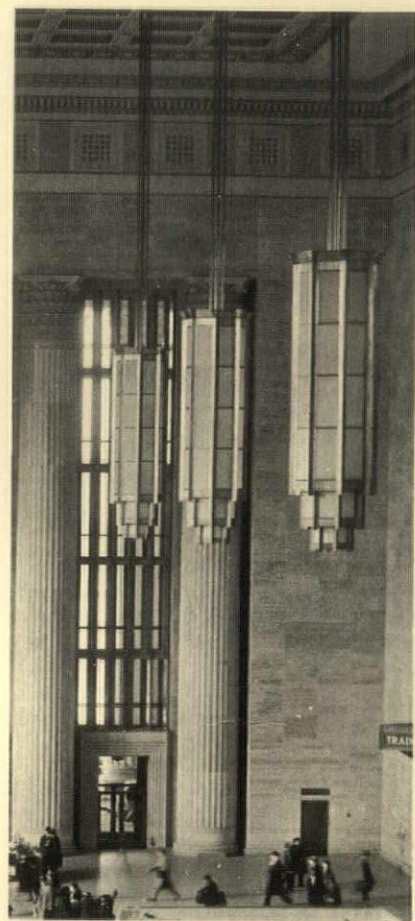
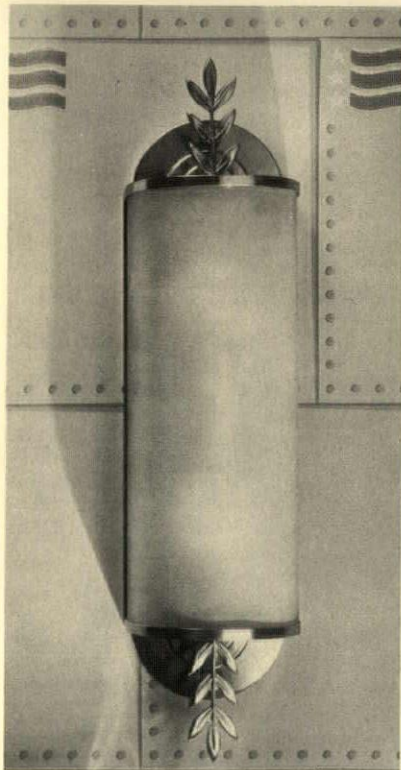
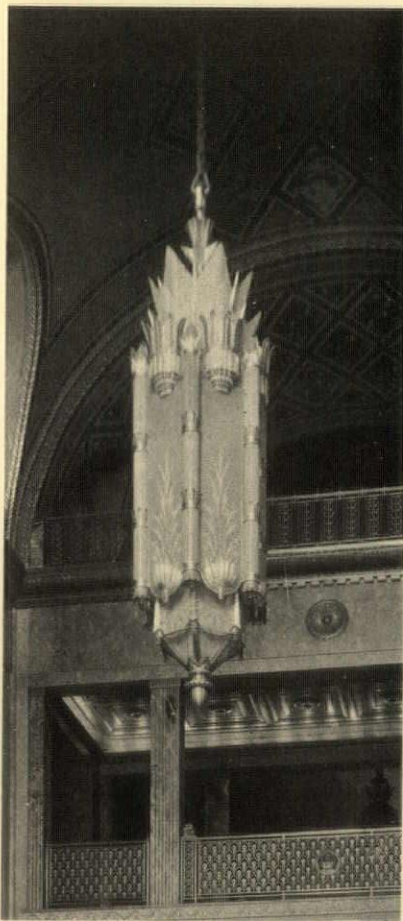




*Bedell's Store, New York City
Joseph Urban*

*Lurelle V. A. Guild
Chase Brass & Copper
Company, Inc.*

*Fisher Building, Detroit, Mich.
Albert Kahn, Inc.*



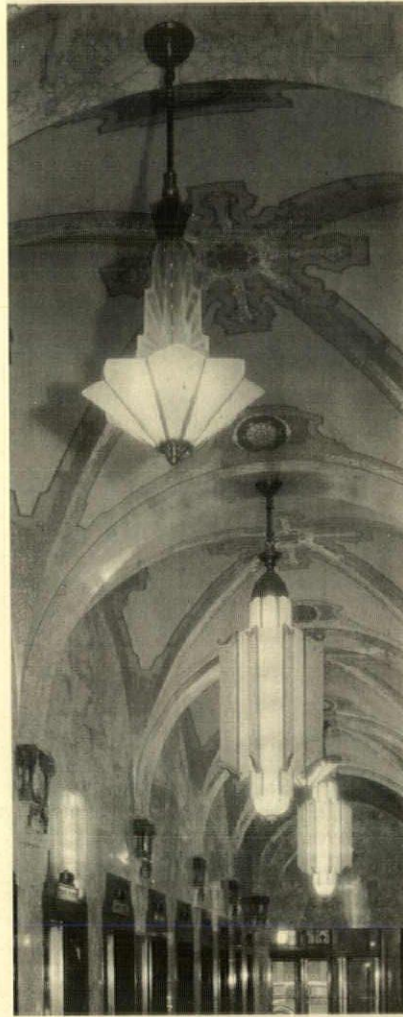
*Pennsylvania Railroad Terminal,
Philadelphia, Pa.
Graham, Anderson, Probst &
White*

*Almus Pratt Evans's apartment,
New York City
Evans, Moore & Woodbridge*

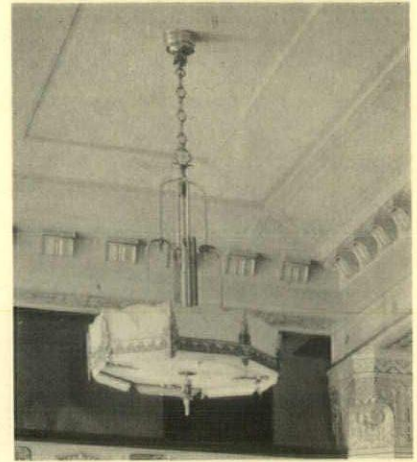




*Louisiana State Capitol,
Baton Rouge
Weiss, Dreyfous & Seiferth*

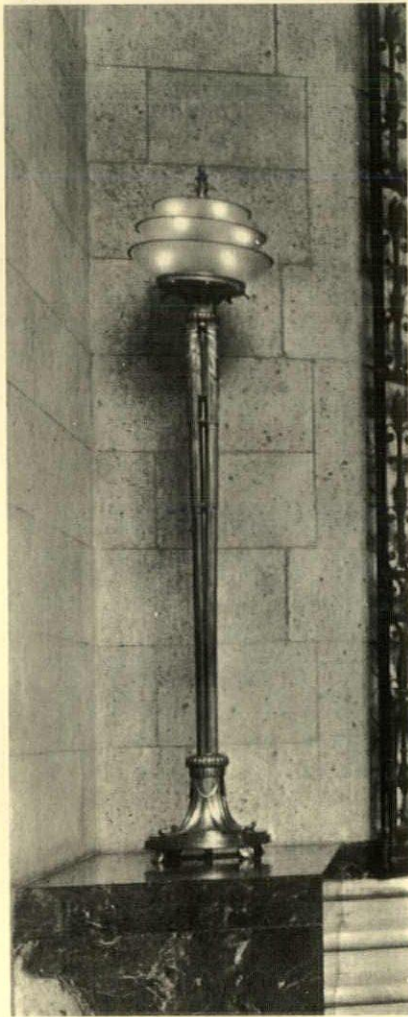


*Harriman Building,
New York City
Cross & Cross*

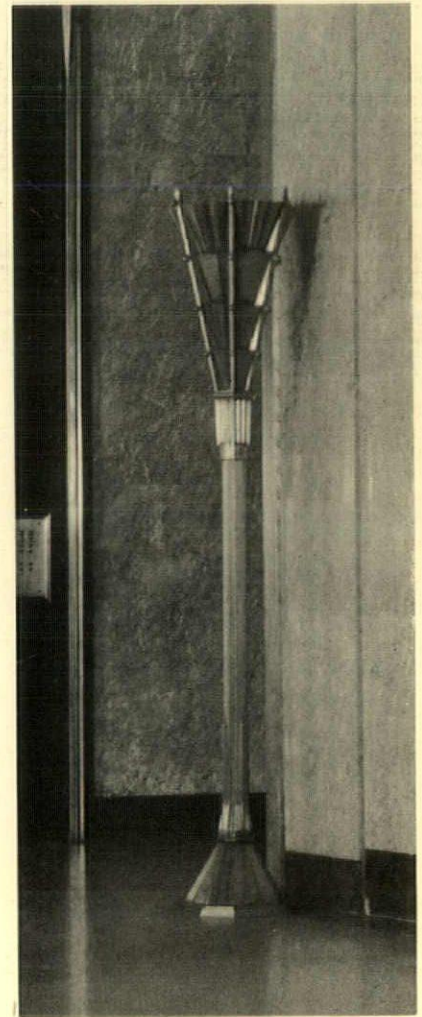


*Bank of Hollywood, California
Aleck Curlett*

*Baltimore (Md.) Trust Building
Taylor & Fisher*



*N. J. Bell Telephone Company
Building, Newark
Voorhees, Gmelin & Walker*



*William Cook
Warman & Cook, Inc.*



NEWS OF THE NEWEST PRODUCTS

Members of the architectural profession may secure without cost any or all of the literature reviewed on this and the following page. ARCHITECTURE will see that the latest information on the newest materials and services is sent you. Fill in the file numbers of items desired on the prepaid mailing card below and mail.

— NOTE —
For your convenience ARCHITECTURE will see that at your request any data or literature pertaining to any advertised product presented in this issue is sent you. Use request card below.

ILLUMINATION HANDBOOK

F. 372. A new and simplified method of designing floodlighting installations, known as the "Lumens in the Beam" method, and a simpler way of presenting data for the design of interior lighting installations, features the new illumination handbook which the Westinghouse Lamp Company has just announced. Complete information is provided on every phase of lighting design for the home, office, store, and factory. Tables of design data are necessarily concise and complete and have been revised in such a manner that all essential information is available. Bulletin A-63865 will tell you more about the handbook.



"ALL-STEEL" CABLE EQUALIZER

F. 373. John W. Kiesling & Son, Inc., of Brooklyn, have a bulletin explaining how their "All-Steel" Cable Equalizer fulfills the nine necessary requirements of cable equalizer: 1. Range of Equalization; 2. Uniform Distribution of Tension; 3. Operation with Minimum Friction; 4. Should Require No Servicing or Attention; 5. Required Factor of Safety; 6. Manufacturers' Guarantee; 7. Simple to Install; 8. Low Overhead Room; 9. Fit Standard Car Construction. This bulletin also contains a blue print showing front and side elevations.



DOUBLE CONE VENTILATORS

F. 374. Complete renewal of air is accomplished under the most difficult and unusual conditions by installing "Royal" Double Cone Ventilators, a product of the Royal Ventilator Company. Superior and exclusive construction features include lapped seams, wired edges, and galvanized malleable iron or copper stays so arranged as not to interfere with the passage of air currents, and standing seams which give two thicknesses of metal instead of one. Especially adapted for foundries, powerhouses, factories, and schools.



ELEVATORS FOR ALL PURPOSES

F. 375. We will have the Energy Elevator Company's pamphlet, showing working drawings, specifications, and prices of their electric freight and sidewalk elevators, outrigger hoists, hand elevators, automobile and invalid elevators sent you upon request. This pamphlet also includes safety gates and cornerpost cars.



FINISHING LIME THAT SATISFIES

F. 376. From Maine to California, plasterers who take pride in producing a better job and who appreciate the ease with which it may be done, prefer Ohio White Finish, a product of the Ohio Hydrate & Supply Company. The natural purity of the dolomitic limestone as it comes from the quarry, plus modern methods of manufacture, results in a Hydrated Lime 99½ per cent pure. It is carefully milled to prevent pits and pops and to absorb readily the water in soaking. May we send you further data on this finish which is guaranteed to meet the specifications of the American Society for Testing Materials?

CONVECTOFIN TAKES THE PLACE OF RADIATORS

F. 377. Convectofin is a completely built-in convection heater which may be placed within the wall construction or against the wall surface, in various combinations of type and style. The typical Convectofin consists of a copper fin-and-tube heating element, supported on brackets inside of a furniture steel cabinet and behind a panel having an air inlet and a heat outlet grille. Bulletin No. 6 of the Commodore Heaters Corporation describes this in detail, its construction and installation features, and contains tables of effective heating capacities.



AMPLE HOT WATER AT LOWEST COST

F. 378. The Excelso Double Coil Indirect Water Heater, showing the exclusive Excelso Removable Coil Construction, all copper and brass waterways, and Patented Ground Joint Brass Connections, is described in a folder, put out by the Excelso Products Corporation. A copy, showing sectional views and giving data on construction, installation, and performance will be sent you if you will check this number on the card. The manufacturers say that their Indirect Water Heater, connected to steam, vapor, or hot water heating boiler, will produce ample domestic hot-water supply day and night at the lowest known cost, just as long as the heating plant is in operation.



NORTON FLOORS

F. 379. The Norton Company, of Worcester, Mass., have booklets showing the various types of Norton Floors and their broad adaptability—how they are solving the slipping hazard and providing exceptional resistance to wear in a wide variety of places, indoors and out, from department stores and swimming pools to industrial plants. One of the booklets is before us and contains interesting examples of the uses of Alundum in Alundum Aggregate for terrazzo in stair tile, floor tile, Ceramic Mosaic tile, etc. We shall be glad to have full information regarding the Norton Floors sent you.



STEEL AGE UNITS

F. 380. The Cory-Jamestown Manufacturing Corporation have a very complete and useful catalogue of their steel office equipment, featuring a few built-to-order installations. Cabinets, desks, drawers, counters, chairs are included, with illustrations, descriptions, and dimensions. Their Engineering Department is at your disposal where special problems are handled efficiently by men of ability and long experience.



CABOT'S COLLOPAGES

F. 381. Samuel Cabot, Inc., manufacturing chemists, make Collopakes, the pigments of which are processed in an entirely different way from those in ordinary paints and the manifold advantages of Collopakes result from this difference. A sheet showing the laboratory tests demonstrating the radical and valuable differences between this product and ordinary paints will be sent upon request. These are the Settling, Filter, Capillary, and Cream Separator tests.

WHITE HOUSE STEEL UNITS

F. 382. Janes & Kirtland show, in their catalogue No. 6, why good taste and design in kitchen and pantry equipment need not be sacrificed for efficiency when using White House Units. These sectional steel units have been installed in many of America's outstanding residences, apartments, hospitals, and industrial plants and this catalogue goes into detail regarding construction, finish, fittings, arrangement, installation, detail of designs and sizes.



ENAMELED BRICK

F. 383. We have a most valuable booklet, put out by the American Enameled Brick Company, going into detail as to various types of brick manufactured by the company, standard and special shapes, properties and special features, specifications, color plates, diagrams and photographs of installations—in short, just about all the working information regarding enameled brick that could be compiled in ten pages. You will need one of these.



INNOVATION IN WALL TILE

F. 384. The Aetco Tile Bulletin No. 23 shows a color plate of Reflecta Tile, made by the American Encaustic Tiling Company. This tile may be obtained in semi-matt and bright glaze colors, and the patterns and dimensions are included in the bulletin. This company has a service department for architects and will be glad to help you in any special tiling problems.



CAST GLASS

F. 385. Architectural Cast Glass is made to the architect's special designs by the Steuben Division of the Corning Glass Works and the

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designer is almost unlimited in his creative scope. All glass is made in specially constructed moulds, and the designs and moulds are proprietary to the architect or owner and not used again without special permission. The company has sent us a most interesting booklet with illustrations, diagrams, and full information on the various uses in the treatment and finishing of cast glass for interiors and exteriors, fixtures and pylons, and as grilles for ventilation and diffusion of light. Check this on the card. It will be extremely valuable.



HARMONY BETWEEN FLOOR AND WALL

F. 386. Congoleum-Nairn, Inc., have an abridged catalogue of Sealex floor and wall materials, illustrations, color charts, specifications, and valuable weight, gauge, and color tables. These new materials make a most fascinating contribution to practical floor and wall decoration and will be welcomed by every decorator striving to achieve new, beautiful, and lasting effects.



HANDBOOK OF VENTILATING

F. 387. The ILG Electric Company, of Chicago, have sent us their new condensed catalogue and handbook of ventilating, heating, cooling, and air-conditioning equipment. Purposely made pocket size, this booklet is crammed with usable information for architects and engineers.



WINTER CONSTRUCTION

F. 388. In winter, more than at any other season of the year, it pays to develop high concrete strengths at early periods. Through a basic improvement in process of manufacture, "Incor" 24-Hour Cement cures or hardens five times as fast as ordinary Portland cement. The International Cement Corporation have a pamphlet going into details as to the precautions needed, in cool and sub-freezing weather and how "Incor" Cement reduces winter costs and makes summer schedules possible in cold weather. Tables of heat protection requirements and age-strength diagrams are included.



KOPPERS ROOFING

F. 389. In a graphically illustrated catalogue of their roofing materials, The Koppers Products Company, of Pittsburgh, tells you why you

should choose Koppers coal tar pitch materials for roofing. A consolidated table of specifications is included.



OIL HEAT AND AIR CONDITIONING

F. 390. Gar-Wood Industries, Inc., have sent us a copy of their new architect's catalogue, containing full information on their Boiler-Burner Unit, Model "R" Boiler-Burner Unit, Tempered-Aire-Furnace Burner Filter Blower Unit, Indirect Air Conditioning Cabinet, Conversion Oil Burner Units, and Automatic Oil Fired Water Heater.



MASONITE BOARDS

F. 391. In the Masonite Corporation's latest catalogue on Quatrboard, Presdwood, Temptrite, and Insulating Lath are details as to uses and installation, heat loss and condensation charts, construction details, and specifications. A catalogue to which you will refer in all problems of insulation, condensation, or acoustics.



"H & H" WIRING DEVICES

F. 392. The listings in this new Hart & Hegeman catalogue bring up to date the complete "H & H" line of wiring devices—recognized leaders for forty-four years. In the past few years this company has designed, developed, and manufactured many new wiring devices, built for a specific need to give the user the utmost convenience from his electric installation. One will be sent you if you check this number on the return card.



WOODEN TRUSSES

F. 393. A turn toward truth in architecture concerning real timbers has resulted in an increasing number of specifications calling for exposed timber trusses. To meet this, McKeown Bros. Co. have issued several folders showing installations of real timber trusses, furnished by them, and these may be secured for your files.



DELCO-HEAT DATA

F. 394. The Delco Appliance Corporation, of Rochester, are presenting their Delco-Heat products in a complete data book for architects and builders. These oil-burners, boilers, and conditioners are described in detail, with color plates, specifications, and blue prints.



GUTH GLO

F. 395. Is the newest development in lighting science, giving very efficient indirect illumination with light distribution exceptionally uniform through 180° zones, both vertical and horizontal. The Edwin F. Guth Company, of St. Louis, give construction details and prices and show practical applications of this type of reflected lighting under balconies and low ceilings, in banking-rooms and auditoriums, in their new booklet. Guth Glo units can also be equipped with Neon tubes for many exterior purposes.



GAS CUTTING OF STRUCTURAL STEEL

F. 396. A valuable addition to oxy-acetylene literature is "Recommended Practices for Gas Cutting of Structural Steel," just announced by the Linde Air Products Company of New York. This is the first complete and authoritative treatment of this subject, and for the first time sets up qualification tests for the predetermination of good workmanship from the standpoint of dimensional accuracy and smoothness of cuts. These tests, of course, apply only to hand blow-pipes, and are for the present restricted to the plain low carbon steels. This booklet is certain to become a standard reference work on this subject, as it combines under one cover the ma-

terial in current regulations as given in bulletins issued by various prominent regulatory bodies. Hence, it will be welcomed by engineers, contractors, architects, supervisors, and inspectors as a reliable means of gauging and controlling the quality and safety of cutting operations.



SHEET IRON—A PRIMER

F. 397. The Fifth Edition of Republic Steel's "Sheet Iron—A Primer" is now ready for distribution to architects and engineers. This primer, referred to by the company as Bulletin 127, contains 64 pages and is profusely illustrated. In simple, non-technical language it tells the step-by-step story of modern manufacture of sheet iron, tracing production from the ore mine to the final inspection of the completed sheet. It contains gauge tables and an interesting glossary of metallurgical terms.

ADVERTISERS' LITERATURE

	PAGE
A. 189. Bethlehem Steel Corp., Inc. Key to Important Economies . . .	15
A. 190. Bigelow-Sanford Carpet Company A Broad and Flexible Service . . .	11
A. 191. Brunswick - Balke - Collender Co., The Brunswick Craftsmanship and Service Fixtures . . .	4th Cover
A. 192. Byers Company, A. M. Use of Genuine Wrought-Iron Pipe in Heating Systems . . .	2d Cover
A. 193. Carnegie Steel Company Efficient Framing Enters the Building Picture . . .	6
A. 194. Cutler Mail Chute Company Modernize with Cutler . . .	16
A. 195. Faber, Inc., A. W. Castell in First Place . . .	16
A. 196. Faber Pencil Company, Eberhard Kleenit for Cleaning . . .	5
A. 197. Faber Pencil Company, Eberhard Microtomic Van Dyke Pencils and Fixatone . . .	14
A. 198. Johnson Service Company Automatic Temperature Control Systems . . .	18
A. 199. Koh-I-Noor Pencil Company Ideal Crayon for Modern Effects . . .	17
A. 200. Libbey-Owens-Ford Glass Company Single A Strength and Double A Strength . . .	7
A. 201. Otis Elevator Company Modern Elevator Practice in Office Buildings . . .	13
A. 202. Prometheus Electric Corp. Bathroom Electric Heater . . .	17
A. 203. Ruberoid Company, The Built-Up Roofing . . .	3d Cover
A. 204. Smyser-Royer Company Cast-Iron Verandas . . .	17
A. 205. Taylor Company, The Halsey W. Sanitary Fountains . . .	16
A. 206. Youngstown Sheet & Tube Company Permanence and Beauty . . .	8

ARCHITECTURE

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When you wish the advice of expert Carpet Counsel, write or telephone Contract Department, Bigelow-Sanford Carpet Co., Inc., 140 Madison Ave., New York, New York.

BRANCH OFFICES AND SHOWROOMS IN 25 CITIES



R. G. Hanford, Architect, executed the plans for the recently opened Ionian and Sapphire Rooms in the Deshler-Wallick Hotel, Columbus, Ohio. Both of these beautiful new rooms—like all public spaces, corridors and guests rooms in this fine hotel—are carpeted by the Bigelow Weavers. In the past 35 years, Wallick hotels have purchased more than 200,000 yards of Bigelow carpet!

THE BULLETIN - BOARD *Continued*

(Continued from page 4)

year's competition was a wayside inn, and the judges were: William F. Brooks of Hartford, Edward B. Caldwell of Bridgeport, T. Merrill Prentice of New York, Professor Jean Labatut of Princeton, and Professor Frederic C. Hirons of Yale.

A NEW TECHNICAL ALLIANCE

A NEW organization of architects and engineers has recently been formed in Westchester County, N. Y.—The Architectural and Engineering Alliance. There are now three hundred eighty-six members, including, for the most part, licensed architects and engineers, but also some unlicensed men of architectural or engineering training and employment. The object of the society primarily is to promote and stimulate construction, and to obtain adequate remuneration for its members. The organization will strive to make clearer to the public the real need for professional and technical skill in all building and public works. The Alliance suggests the formation of other chapters in cities or counties, and Harry H. Bassford, treasurer and chairman of the Expansion Committee, will be glad to correspond with bodies considering the possibility of organization in this way. His address is Post Office Box 1001, White Plains, N. Y.

PWA

A SUMMARY of allocations made by the Public Works Administration during the first year of its existence is as follows:

Loans and grants to States, cities, counties, railroad companies and others for non-Federal projects.....	\$ 759,549,693
Federal aid road system construction by States.....	400,000,000
Roads in parks, forests, Indian reservations and other public domain.....	50,000,000
Relief highways being built by States.....	7,431,000
Civil Works Administration..	400,000,000
Civilian Conservation Camps	323,362,315
Naval vessels.....	2,38,000,000
Emergency Housing Corporation of PWA.....	127,564,500
Farm Credit Administration..	100,000,000
Tennessee Valley Authority..	50,000,000
Surplus Relief Corporation..	25,000,000
Power and reclamation projects constructed by Reclamation Bureau.....	103,535,000
Subsistence homesteads.....	25,000,000
Soil erosion prevention.....	10,000,000
Forest service for improvements in national forests...	15,967,745
Indian service for day schools and other improvements on reservations.....	15,034,550

Airplanes for army and navy.....	15,000,000
Army motorization.....	10,000,000
Shore construction at navy yards and stations.....	31,598,924
Coast Guard for new cutters, patrol boats, airplanes and shore station construction..	25,031,372
Public buildings.....	67,427,288
Flood control on Mississippi, Ohio and other rivers.....	73,921,500
General river and harbor work	179,924,208
Construction at army posts, seacoast defenses and other military establishments....	77,924,920
National park service for improvements to parks and public buildings.....	16,097,350
Miscellaneous allotments to bureaus and departments of the Federal Government....	146,291,503

Total..... \$3,293,662,170

Secretary Ickes announced on August 12, 1934, that virtually all of the \$3,700,000,000 fund had been depleted by allocation and PWA is now looking to the Reconstruction Finance Corporation for additional funds for loans on non-federal projects. Under the late deficiency act the RFC is authorized to purchase securities now held by PWA up to \$25,000,000 worth at one time. No new applications are being received.

A. S. T. M.

DR. HERMANN VON SCHRENK, consulting timber engineer, St. Louis, Mo., and senior vice-president of the American Society for Testing Materials, has been elected to the office of president. This action was taken by the Executive Committee to fill the vacancy caused by the death of W. H. Bassett, who passed away on July 21 soon after he took office as head of the society.

The vacancy created by Doctor von Schrenk's election was filled by the appointment of H. S. Vassar, as senior vice-president; Mr. Vassar having been elected a vice-president last June.

A. C. Fieldner, chief engineer, Experiment Stations Division, U. S. Bureau of Mines, Washington, D. C., has been elected junior vice-president. No action was taken to fill the unexpired term of Mr. Fieldner as a member of the Executive Committee.

HENRY SPROATT, 1866-1934

HENRY SPROATT, whose firm, Sproatt & Rolph of Toronto, is known not only in his own country, but widely here in the United States, died October 4 after a brief

illness. Dr. Sproatt was born in Toronto, June 14, 1866. After attending the Collegiate Institute at Collingwood, Ont., he studied architecture under Arthur R. Denison, beginning in 1882. In 1886 he came to New York to continue his studies for two years.

After travel in France and Italy he took up his practice in Canada as a member of the firm, Darling, Curry, Sproatt & Pearson. It was in 1899 that he formed his partnership with Ernest R. Rolph. Dr. Sproatt in 1920 received the degree of Doctor of Laws from Toronto University.

He was a Fellow of the Royal Institute of British Architects and the Royal Institute of Canadian Architects.

PENROSE V. STOUT, 1887-1934

PENROSE VASS STOUT, New York architect, died in Boston on October 24, after having been stricken in a heart attack soon after delivering a lecture. Mr. Stout was born at Montgomery, Ala., and was graduated from the Alabama Polytechnic Institute at Auburn in 1909.

His early practice was in Pensacola, Fla., and in New York City until the beginning of the war. Mr. Stout enlisted in March, 1917, in the infantry and subsequently was commissioned a first lieutenant and transferred to the air service. He was awarded the Distinguished Service Cross for extraordinary heroism in action near Charney, France.

Since the war Mr. Stout has been practising in New York, Virginia, and the Carolinas. He was a member of the American Institute of Architects.

PERSONAL

J. Andre Fouilhoux announces that, following the death of Raymond M. Hood, he will assume the unfinished business of the firm of Hood & Fouilhoux, and continue the practice of architecture at 40 West 40th Street, New York City. Work in process will be carried through under the firm name of Hood & Fouilhoux, and new work under the name of J. Andre Fouilhoux.

Waldron Faulkner, architect, announces the opening of his new office for the general practice of architecture at 917 Fifteenth Street, Washington, D. C. Mr. Faulkner's New York City office remains at 101 Park Avenue.

WHAT IS MODERN ELEVATOR PRACTICE IN OFFICE BUILDINGS?

SIGNAL Control Elevators, first installed in the Standard Oil Building in New York City and since furnished by the Otis Elevator Company for over 350 other high-class office buildings, are now so generally recognized as the accepted standard for modern office buildings that, in recent years, few such buildings have been equipped with any other type of control. Improvements and simplification in design and construction have not only materially reduced the cost of Signal Control but have added so greatly to its flexibility that its field of application has been rapidly extended to embrace the six-story office building as well as the towering skyscraper.

The tremendous advantages of Signal Control from the standpoint of both quantity and quality of elevator service have been so thoroughly established that to install anything but Signal Control in even a moderate-size office building is to risk elevator obsolescence before the building is completed.

For all but intermittent service elevators in low-rise office buildings, gearless machines with Unit Multi-Voltage and two-way self-leveling are taken for granted by most owners, architects and tenants of modern office buildings. Maximum smoothness, convenience and passenger-handling ability require in addition Otis Signal Control which, with recent refinements, now offers the following outstanding characteristics:

1. The pressing of a hall button by a prospective passenger automatically stops the first available car traveling in the desired direction.

2. An audible gong and a hall signal lantern advise the waiting passenger which car will stop and sufficiently in advance of the arrival of the car to permit the passenger to move without unusual haste to the proper opening. The interval by which the light precedes the arrival of the car is adjustable within ample limits to permit each installation to be arranged with that light interval best suited to the requirements of the building. This is a notable advance in the Elevator Art and is accomplished without sacrificing the all-important requirement that only the light corresponding to the car that is to stop shall be illuminated.

3. The car and hatchway doors open automatically as the car stops level with the floor.

4. The car stops automatically at the floor corresponding to the button pressed by the attendant in the car.

5. Excellent service is assured independently of the skill or memory of the operator. False stops are eliminated and the possibility of failing to stop for a waiting passenger is avoided.

6. The control is so arranged that when desired the cars will stop and reverse automatically at the point of highest call. During the morning peak period this new and important improvement adds considerably to the passenger-handling capacity of the elevators, as the time required to travel unnecessarily above the highest point for which there is a car or hall call is completely eliminated—round-trip time is reduced and more trips from the ground floor can be made during the period of intensive service.

This same arrangement, which also includes a buzzer in the car, makes every car available for night service without the additional complication of a night service annunciator.

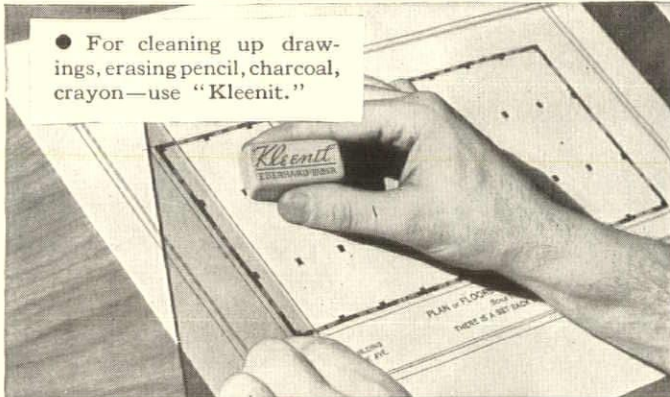
7. To assure the maximum service of which an elevator installation is capable, it is necessary that they be dispatched with the proper interval and in proper sequence—all of which is accomplished with a minimum of attention on the part of the starter by the Otis Scheduling Device.

The number, capacity and speed of elevators required to provide adequate elevator service in a modern office building can best be determined by taking advantage of the wealth of information assembled by Otis Engineers and based upon extensive tests in existing buildings. All Otis offices are equipped to give complete and detailed information on the subject of proper elevator equipment for all types of buildings, and this service is available to architects and engineers without obligation.

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In the office, studio, school and at home, you will find dozens of uses for "Kleenit." Use it for cleaning up books, woodwork, wall paper and fabrics. 10¢ and 25¢.

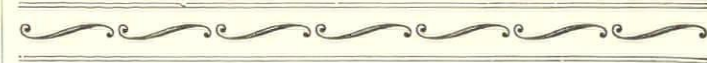
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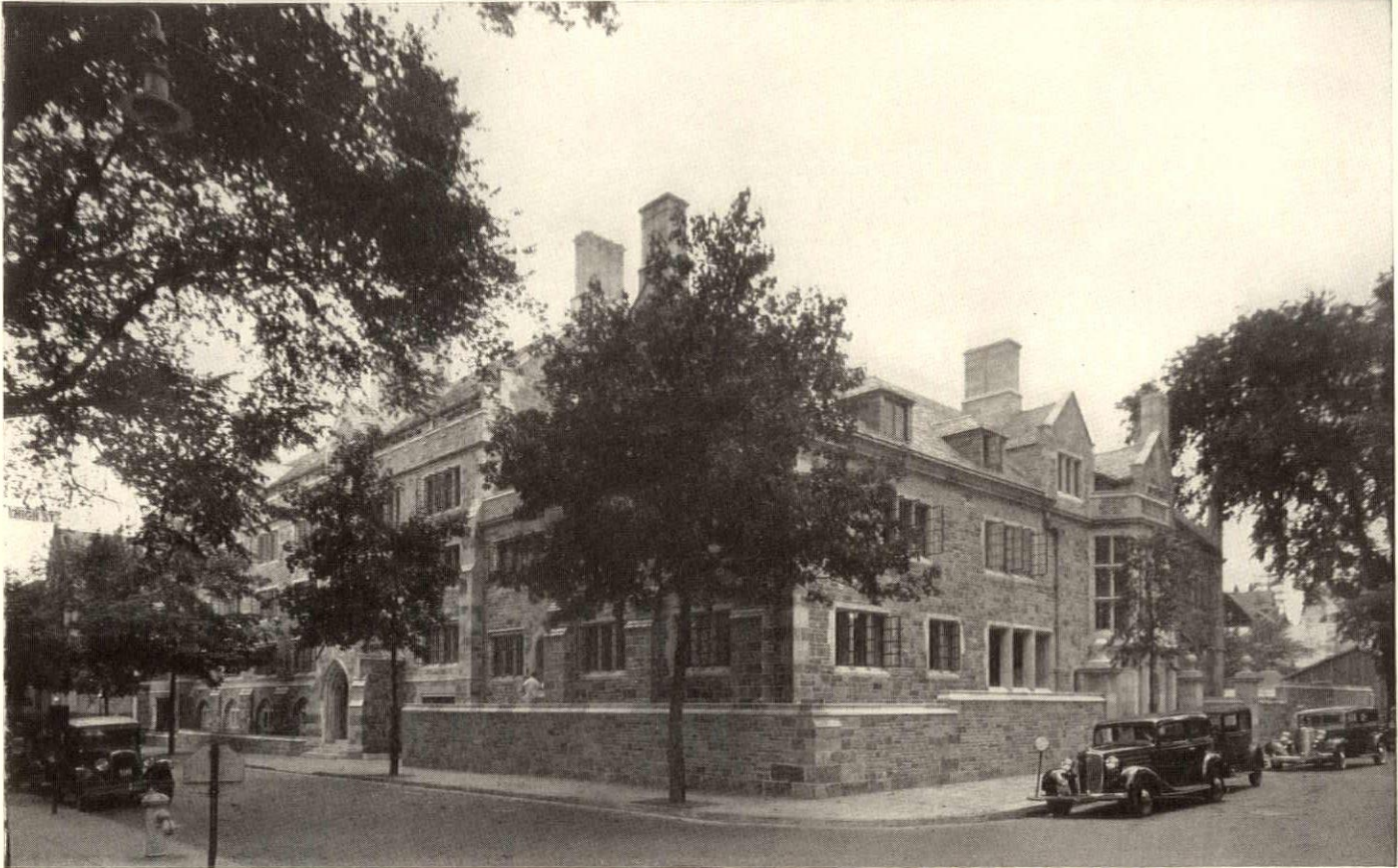
ADVERTISERS' INDEX

	PAGE
Bethlehem Steel Corp., Inc.	15
Bigelow-Sanford Carpet Company	11
Brunswick-Balke-Collender Co., The	4th Cover
Byers Company, A. M.	2d Cover
Carnegie Steel Company	6
Cutler Mail Chute Company	16
Faber, Inc., A. W.	16
Faber Pencil Company, Eberhard	5, 14
Johnson Service Company	18
Koh-I-Noor Pencil Company	17
Libbey-Owens-Ford Glass Company	7
Otis Elevator Company	13
Prometheus Electric Corp.	17
Ruberoid Company, The	3d Cover
Smyser-Royer Company	17
Taylor Company, The Halsey W.	16
Youngstown Sheet & Tube Company	8

REFER TO COLORED INSERT FOR REVIEWS OF THE LATEST LITERATURE ON BUILDING PRODUCTS



The Key to important economies in designing steel structures



One of the five buildings comprising the new Berkeley Dormitories at Yale University, New Haven, Conn. Bethlehem Light Sections were used throughout the floor systems of these buildings. James Gamble Rogers, Architect; Gunvald Aus Co., Engineers; Marc Eidlitz and Son, Inc., General Contractors; Lehigh Structural Steel Co., Fabricators.

BETHLEHEM Light Sections—beams, columns, joists and stanchions—round out Bethlehem's line of structural shapes. They simplify the problem of working out designs that use steel most effectively.

Wherever rigidity and relatively close spacing of the structural members are required, in locations where the load does not call for the use of the heavier shapes, Bethlehem Light Sections bring decided savings. Their economies are especially marked in buildings with comparatively light live floor-loads. Beams of the depth dictated by deflection limits can be spaced closely enough to permit an economical thickness of floor slab, without using more steel than is needed to carry the load.

Similarly, Bethlehem Light Sections are often the logical ones for purlins in roof construction, for ceiling beams, for columns in upper stories where loads are lighter, for struts between columns.

It is suggested that you give full consideration to the possibilities in the use of Bethlehem Light Sections on your next building. They are the key to important economies in the design of many types of steel structures.

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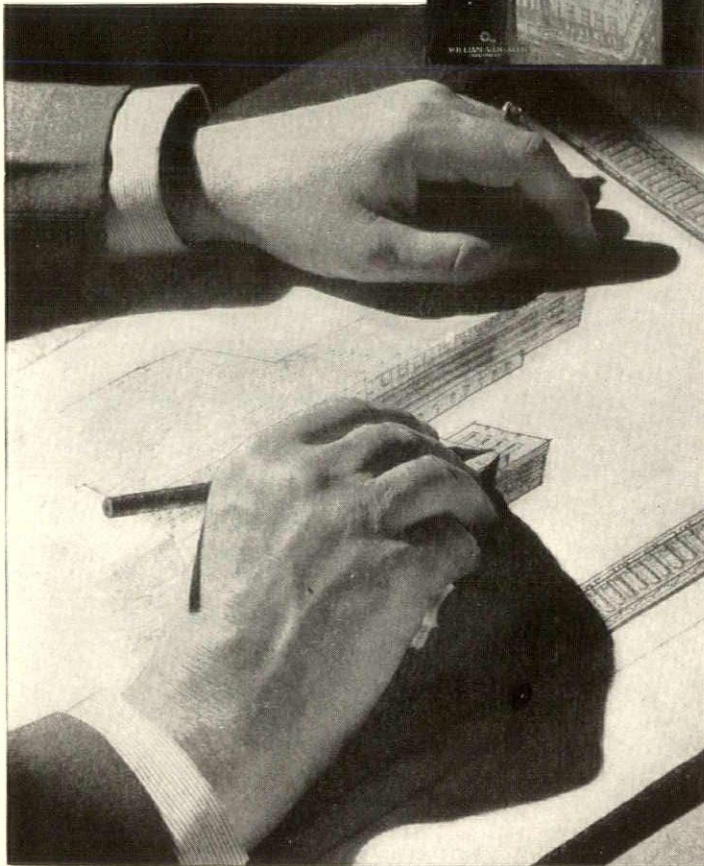
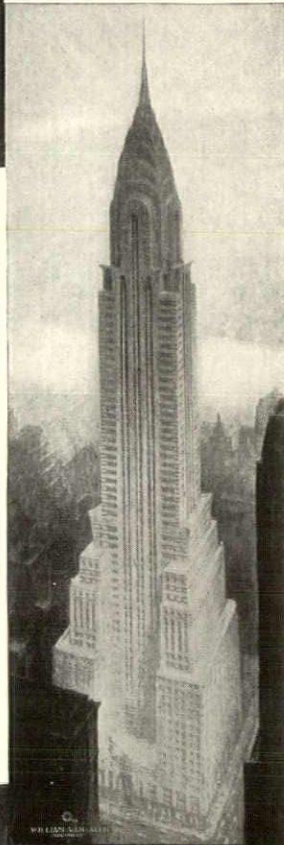


PHOTO BY
F. X. CLEARY

William Van Alen,
Architect for the
Chrysler Building

**"I have used Castell
drawing pencils for
30 years"**. . William Van Alen

It is not surprising to find the famous A. W. Faber "Castell" drawing pencil in the hands of the man who started the architectural world with his commercial monument to Mr. Chrysler. At the outset of his career Mr. Van Alen discovered "Castell", which has maintained first place in the fine drawing pencil field for many years.

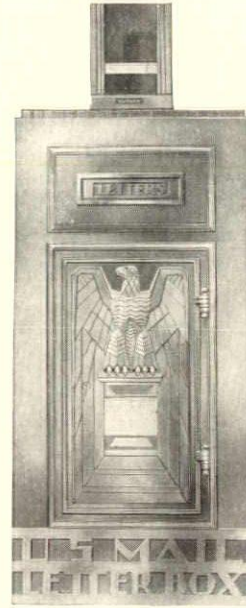


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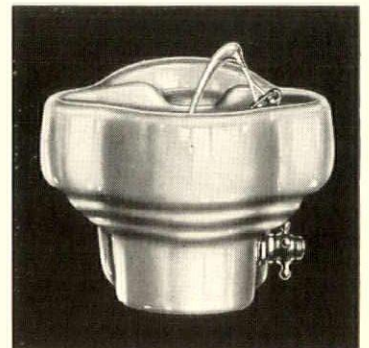
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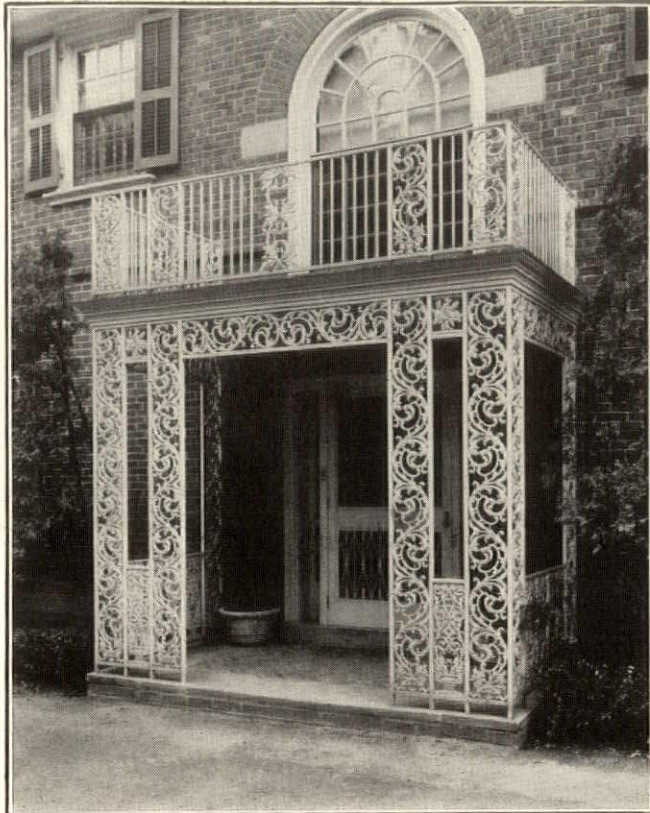
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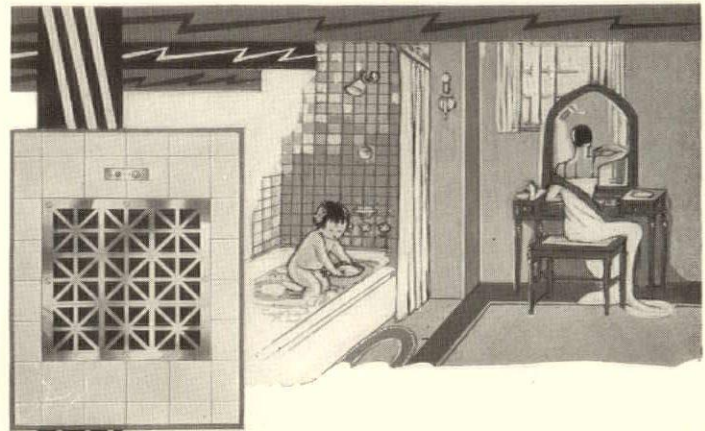
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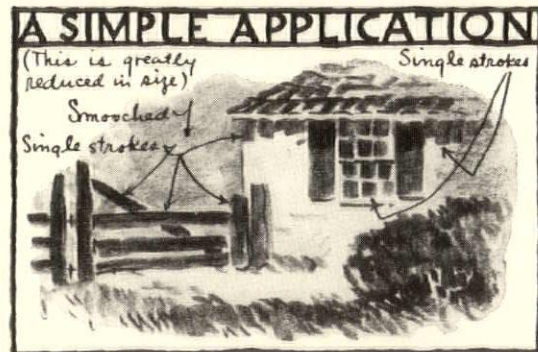
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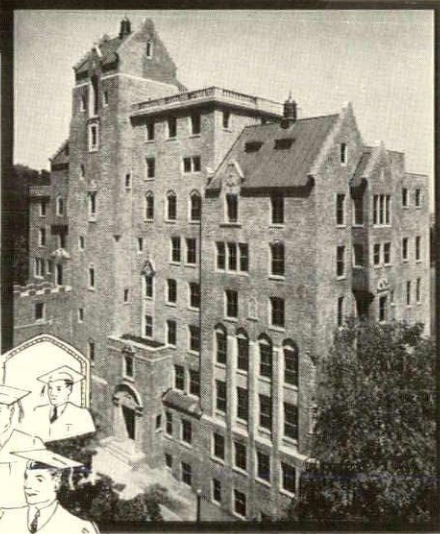


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INDEX

*The pagination of the volume is divided as follows: July, 1-60; Aug., 61-120; Sept., 121-180;
Oct., 181-240; Nov., 241-300; Dec., 301-360*

- American Red Cross Bldg., window detail in molded brick, New York City; Delano & Aldrich, archts.: 163
- Andrews, Charles E., bridge engr.; Glenn B. Woodruff, engr. of design; Timothy L. Pflueger, Arthur Brown, Jr., John J. Donovan, consulting archts.; C. H. Purcell, chief engr.: San Francisco-Oakland Bay Bridge: Some Details: 39
- Animal Frieze, New York State Theodore Roosevelt Memorial, The; Edward Field Sanford, Jr., sculptor; Office of John Russell Pope, archt.; Carving by John Donnelly: 31
- Architect in the Body Social, The, by B. Charney Vladeck: 257
- Architectural Education, The Challenge to, by Matlack Price: 311
- Architectural League Exhibit, The New York: July *Frontis.*, 2
- Architectural News in Photographs: 74, 210, 316
- Architectural Observer, The: 145
- Architecture?, Can Germany Turn Back the Clock in, by John B. Rodgers: 61
- Architecture Dead?, Is, by Edwin Bateman Morris: 1
- Armory, proposed, Minneapolis, Minn.; P. C. Bettenburg, archt. and engr.: 317
- Arsta Bridge, The, Stockholm, from the water-color by Floyd Yewell: Aug. *Frontis.*
- Art Institute of Chicago, winning competitive design; Holabird & Root, archts.: 210
- Asam, The Brothers, by Lawrence Grant White: 7
- Auditoriums: Municipal Auditorium and Community Centre Bldg., St. Louis, Mo.: 74
- Bar, Joseph Urban room, Congress Hotel, Chicago; Scott & Teegen, archts.: 317
- Bard College, proposed, Columbia University; Evans, Moore & Woodbridge, archts.: 210

- Bartels, W. F.: Better Practice: Clay Products, Cinder and Gypsum Blocks: 35. Flooring: 99. Carpentry: 149. Heating: 269. Heating, cont.: 323
- Barthmaier, Eugene V., archt.: Alterations in house of James T. Haviland, Wayne, Pa.: 159
- Barzaghi, Arthur J., engr.; Bowden & Russell, assoc. archts.: A Co-operative Slum Clearance Study: 43
- Bathroom, Standardizing the, by Kenneth Edmunds: 337
- Bebb & Gould, John Graham, assoc. archts.: United States Marine Hospital, Seattle, Wash.: 75
- Bennett, Willard H.: Modular Masonry and the Small House: 215
- Bessell, Wesley Sherwood, archt.: House of Frank La Forge, Darien, Conn.: 89
- Bettenburg, P. C., archt. and engr.: Proposed armory, Minneapolis, Minn.: 317
- Better Practice, by W. F. Bartels: Clay Products, Cinder and Gypsum Blocks: 35. Flooring: 99. Carpentry: 149. Heating: 269. Heating, cont.: 323
- Blanche, Herbert, landscape archt.: Stone bridge in Enfield Glen State Park: 174
- Book Reviews: 73, 148, 212, 318
- Boston's Prado; Arthur A. Shurcliff, landscape architect: 307
- Bowden & Russell, assoc. archts.; Arthur J. Barzaghi, engr.: A Co-operative Slum Clearance Study: 43
- Bridges: San Francisco-Oakland Bay: Some Details: 39. The Arsta, Stockholm: Aug. *Frontis*. Cedar Street, Peoria Ill.: 74. Shark River, Avon, N. J.: 75. On Southern State Parkway, Long Island, N. Y.: 146. In Garden of Misses Righter, Bedford Hills, N. Y.: 147. In Enfield Glen State Park: 147. Old Bridge at Avignon: Dec. *Frontis*.
- British Bldg., roof garden, Rockefeller Center, New York City; Reinhard & Hofmeister; Corbett, Harrison & MacMurray; Hood & Foulhoux, archts.: 210
- Brooklyn Museum, Brooklyn, N. Y.; Department of Parks, City of New York; Aymar Embury II, consulting archt.; Gilmore D. Clarke, consulting landscape archt.: 74
- Brookman, Herman, archt.: House of Tom Greene, Jr., Portland, Ore.: 273. House of Lee S. Elliot, Portland, Ore.: 274. House of Herman Brookman, Portland, Ore.: 276. House of Dr. Dorwin L. Palmer, Portland, Ore.: 278. House of V. H. Jorgenson, Portland, Ore.: 279. House of J. McHolland, Portland, Ore.: 279. House of Mrs. Emma Stein, Portland, Ore.: 280
- Brothers Asam, The, by Lawrence Grant White: 7
- Brown, Jr., Arthur, John J. Donovan, Timothy L. Pflueger, consulting archts.; C. H. Purcell, chief engr.; Charles E. Andrews, bridge engr.; Glenn B. Woodruff, engr. of design: San Francisco-Oakland Bay Bridge: Some Details: 39
- Building, The Opportunity in, by Clarence M. Woolley: 46
- Bullard, Roger H., archt.; Arthur Loomis Harmon, assoc. archt.: Chapel at Kent School, Kent, Conn.: 83
- Bullard, Roger H. and Clifford C. Wendehack, archts.: "Little House" of Better Homes in America, New York City: 316
- Cambridge University Library; Sir Giles Gilbert Scott, archt.: 316
- Can Germany Turn Back the Clock in Architecture?, by John B. Rodgers: 61
- Carpentry: Better Practice, by W. F. Bartels: 149
- Cedar Street Bridge, Peoria, Ill.; Designed by Strauss Engineering Corp.: 74
- Challenge to Architectural Education, The, by Matlack Price: 311
- Chapel at Kent School, Kent, Conn.; Roger H. Bullard, archt.; Arthur Loomis Harmon, assoc. archt.: 83
- Chapel and Crematorium, Copenhagen, Denmark; Edvard Thomsen and Frits Schlegel, archts.: 319
- Churches: Chartres Cathedral: 76. Chapel at Kent School, Kent, Conn.: 83. National City Christian, Washington, D. C.: 251
- Clarke, Gilmore D., consulting landscape archt.: Brooklyn Museum, Brooklyn, N. Y.: 74. Proposed Zoological Bldg., Staten Island, N. Y.: 75
- Clay Products, Cinder and Gypsum Blocks: Better Practice, by W. F. Bartels: 35
- Cliff dwellings, Rio de los Frijoles, N. M.: 258
- Clute, Eugene: Today's Craftsmanship in Combining Metals: 203. Window Panes of Translucent Stone: 241. A New Approach to Lighting Design: 301
- Concrete, A New Craftsmanship in, by John J. Earley: 129
- Constitution Hall of the D. A. R., Washington, D. C.; Office of John Russell Pope, archt.: 13
- Contacts: 45
- Co-operative Slum Clearance Study, A.; Arthur J. Barzaghi, engr.; Bowden & Russell, assoc. archts.: 43
- Corbett, Harrison & MacMurray; Hood & Foulhoux; Reinhard & Hofmeister, archts.: British Bldg. roof garden, Rockefeller Center, New York City: 210
- Cortissoz, Royal: An Appreciation, Cass Gilbert: 34
- Craftsmanship in Combining Metals, Today's, by Eugene Clute: 203
- Craftsmanship in Concrete, A New, by John J. Earley: 129
- Crematorium and Chapel, Copenhagen, Denmark; Edvard Thomsen and Frits Schlegel, archts.: 319
- Cresson, Margaret French, sculptor: Portrait of Daniel Chester French, Hall of Remembrances for American Artists, New York University: 211
- Crisp, Herbert and James R. Edmunds, Jr.; Horace W. Peaslee, assoc. archts.: Preliminary perspective showing restoration of State House, St. Mary's, Md.: 211
- Delano & Aldrich, archts.: Window detail in molded brick, American Red Cross Bldg., New York City: 163
- Delano & Aldrich, archts.; Victor Laloux, consulting archt.: The New U. S. Government Building in Paris: 121
- Department of Parks, City of New York; Aymar Embury II, consulting archt.: Brooklyn Museum, Brooklyn, N. Y.: 74. Proposed Zoological Bldg., Staten Island, N. Y.: 75
- Department of Public Works, City of Los Angeles; P. K. Schabarum, archt.: Valley Municipal Bldg., Van Nuys, Calif.: 247
- Donnelly, John, carver: The Animal Frieze, New York State Theodore Roosevelt Memorial, New York City: 31
- Donovan, John J., Timothy L. Pflueger, Arthur Brown, Jr., consulting archts.; C. H. Purcell, chief engr.; Charles E. Andrews, bridge engr.; Glenn B. Woodruff, engr. of design: San Francisco-Oakland Bay Bridge: Some Details: 39
- Earley, John J.: A New Craftsmanship in Concrete: 129
- Editor's Diary, The: 41, 105, 157, 221, 281, 343
- Edmunds, Jr., James R. and Herbert Crisp; Horace W. Peaslee, assoc. archts.: Preliminary perspective showing restoration of State House, St. Mary's, Md.: 211
- Edmunds, Kenneth: Standardizing the Bathroom: 337
- Education, The Challenge to Architectural, by Matlack Price: 311
- Edwards & Sayward, archts.: University Housing Project, Atlanta, Ga.: 283
- Embury II, Aymar, consulting archt.; Department of Parks, City of New York: Brooklyn Museum, Brooklyn, N. Y.: 74. Proposed Zoological Bldg., Staten Island, N. Y.: 75
- Entrance doorway, House of Byron Dexter, Croton-on-Hudson, N. Y.; Harvey Stevenson & Eastman Studds, archts.: 223
- Epstein A., structural engr.: Proposed International Amphitheater, Chicago Stock Yards: 316
- Etchings; Of Malcolm Osborne, R. A.; R. E.: 76. Grand Canal, America, 1933: Oct. *Frontis*. The Port of Calvi, Corsica: Nov. *Frontis*.
- Etchings of Malcolm Osborne, R. A., R. E., The, by Gerald K. Geerlings: 77
- Evans, Moore & Woodbridge, archts.: Proposed Bard College, Columbia University: 210
- Evers, Albert J.: Is This a New Deal or a Raw Deal for Architects?: 189
- Farm Group for Herbert N. Straus, Red Bank, N. J.; Alfred Hopkins & Assoc., archts.; Martha Brookes Hutcheson, landscape archt.: 65
- Favorite Features: 71, 163, 223
- Field Bldg., Chicago; Graham, Anderson, Probst & White, archts.: 74
- Finland's New House of Parliament, Helsingfors; J. S. Siren, archt.: 195
- Flooring: Better Practice, by W. F. Bartels: 99
- Ford Exposition Bldg., proposed, Century of Progress Exposition, Chicago; Albert Kahn, Inc., archts.: 75
- Forster, Frank J., archt.: House of George G. Bass, Greenwich, Conn.: 327
- French, Daniel Chester, Portrait of, Hall of Remembrances for American Artists, New York University; Margaret French Cresson, sculptor: 211
- Furniture, Garden: A Portfolio of: 47
- Garden Furniture: A Portfolio of: 47
- Garden Terminals; From a collection of photographs by, William Pitkin, Jr. and Seward H. Mott: 259
- Geerlings Gerald K.: The Etchings of Malcolm Osborne, R. A., R. E.: 77
- Giddens, Philip H.: Dry-point etching, The Port of Calvi, Corsica: Nov. *Frontis*.
- Gilbert, Cass, An Appreciation by Royal Cortissoz: 34
- Gill, Harrison: Simplifying Small House Practice: 219
- Goodkind, Morris, bridge engr.: N. J. State Highway Commission: Shark River Bridge, Avon, N. J.: 75
- Graham, Anderson, Probst & White, archts.: Field Bldg., Chicago: 74. Pennsylvania Railroad Terminal, Philadelphia: 137
- Graham, John, Bebb & Gould, assoc. archts.: United States Marine Hospital, Seattle, Wash.: 75

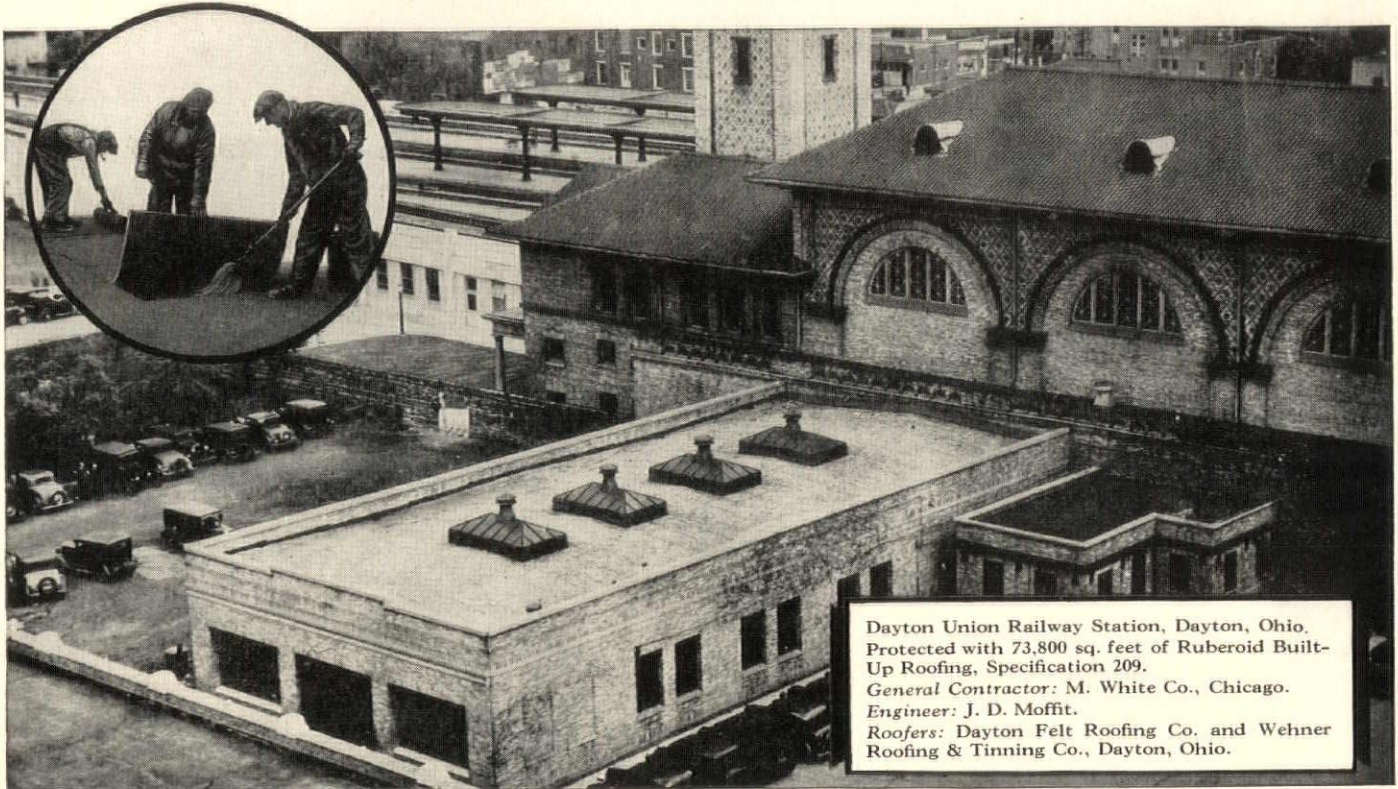
INDEX—ARCHITECTURE—VOL. LXX

- Grand Canal, America, 1933, from the drypoint, by Gerald K. Geerlings: Oct. *Frontis*.
- Greeley, W. Roger: Is This a New Deal or a Raw Deal for Architects?: 190
- Guest Editor, Charles Dana Loomis: Is This a New Deal or a Raw Deal for Architects?: 181
- Harmon, Arthur Loomis, assoc. archt.; Roger H. Bullard, archt.: Chapel at Kent School, Kent, Conn.: 83
- Headquarters Bldg., Governors Island, N. Y.; Lorimer Rich, archt.: 211
- Heating: Better Practice, by W. F. Bartels: 269, 323
- Hennig, R. F., archt.: House built by Omaha's Junior Chamber of Commerce: 211
- Holabird & Root, archts.: Winning competitive design & art institute of Chicago: 210. Model of superintendent's residence, Morton Arboretum, Lisle, Ill.: 317
- Hood, Raymond Mathewson, An Appreciation by Ely Jacques Kahn: 194
- Hood & Fouilhoux; Reinhard & Hofmeister; Corbett, Harrison & MacMurray, archts.: British Bldg. roof garden, Rockefeller Center, New York City: 210
- Hopkins & Assoc., Alfred, archts.: Farm Group for Herbert N. Straus, Red Bank, N. J.: 65. Entrance to Men's Quarters, Straus Farm Group, Red Bank, N. J.: 71
- Hospitals: United States Marine, Seattle, Wash.: 75
- Houses: Murals in ballroom, Bossert, Brooklyn, N. Y.: 316. Bar, Joseph Urban room, Congress, Chicago: 316
- House built by Omaha's Junior Chamber of Commerce; R. F. Hennig, archt.: 211
- House of Parliament, Finland's New, Helsingfors; J. S. Siren, archt.: 195
- Houses: A Co-operative Slum Clearance Study, 43. Farm Group for Herbert N. Straus, Red Bank, N. J.: 65. Reconstructed Insurance Co's. low-cost housing development, Newark, N. J.: 74. Reconstructed Palace of the Royal Governors, Williamsburg, Va.: 75. Of Frank La Forge, Darien, Conn.: 89. Of Gilbert Bloss, Palos Verdes, Calif.: 103. Of James T. Haviland, alterations, Wayne, Pa.: 159. At Omaha, Neb.: 211. At Chicago Fair: 211. Cliff dwellings, Rio de los Frijoles, N. M.: 258. Of Tom Greene, Portland, Ore.: 273. Of Lee S. Elliot, Portland, Ore.: 274. Of Herman Brookman, Portland, Ore.: 276. Of Dr. Dorwin L. Palmer, Portland, Ore.: 278. Of V. H. Jorgenson, Portland, Ore.: 279. Of J. McHolland, Portland, Ore.: 279. Of Mrs. Emma Stein, Portland, Ore.: 280. "Little House" of Better Homes in America, New York City: 316. Model of superintendent's, Morton Arboretum, Lisle, Ill.: 317. Of George G. Bass, Greenwich, Conn.: 327
- Housing Project, University, Atlanta, Ga.; Edwards & Sayward, archts.: 283
- Housing Projects, A Measuring Rod for, by John Ihlder: 213
- Hutcheson, Martha Brookes, landscape archt.: Farm Group for Herbert N. Straus, Red Bank, N. J.: 65
- Ihlder, John: A Measuring Rod for Housing Projects: 213
- Indoor Sports Bldg., proposed, University of Minnesota; Clarence H. Johnston, archt.: 317
- International Amphitheater, proposed, Chicago Stock Yards; A. Epstein, structural engr.: 316
- Is Architecture Dead? by Edwin Bateman Morris: 1
- Is This a New Deal or a Raw Deal for Architects?: 181. By Philip L. Small: 183. By Harvey A. Schwab: 187. By Louis La Beaume: 188. By Albert J. Evers: 189. By W. Roger Greeley: 190. By Charles Dana Loomis: 191
- Johnston, Clarence H., archt.: Proposed Indoor Sports Bldg., University of Minnesota: 317
- Jones Beach State Park, Long Island, N. Y.; Long Island State Park Commission, Department of Architecture; H. A. Magoon, designer: 23
- Jones, Helen Swift, landscape archt.: Stone bridge in garden of Misses Righter, Bedford Hills, N. Y.: 147
- Kahn, Inc., Albert, archts.: Proposed Ford Exposition Bldg., Century of Progress Exposition, Chicago: 75
- Kahn, Ely Jacques: An Appreciation: Raymond Mathewson Hood: 194
- Keck, George Fred, archt.: House at Chicago Fair: 211
- Kelley, H. Roy, archt.: House of Gilbert Bloss, Palos Verdes, Calif.: 103
- Kent School, Chapel at, Kent, Conn.; Roger H. Bullard, archt.; Arthur Loomis Harmon, assoc. archt.: 83
- Kruse, Albert: Four lithographs of New Castle, Del.: 153
- La Beaume, Louis: Is This a New Deal or a Raw Deal for Architects?: 188
- La Beaume & Klein, archts.: Municipal Auditorium and Community Centre Bldg., St. Louis, Mo.: 74. Proposed memorial to Thomas Jefferson and our National Expansion, St. Louis, Mo.: 211
- Laloux, Victor, archt.; Delano & Aldrich, archts.: The New U. S. Government Building in Paris: 121
- Libraries: Cambridge University: 316. Public, Cornwall-on-Hudson, N. Y.: 316
- Lighting Design, A New Approach to, by Eugene Clute: 301
- Lighting Fixtures, Modern: A Portfolio of: 345
- Lithographs of New Castle, Del., by Albert Kruse: 153
- "Little House," Better Homes in America, New York City; Roger H. Bullard and Clifford C. Wendehack, archts.: 316
- Lobbies, Business Bldg.: A Portfolio of: 225
- Long Island State Park Commission: Four small bridges on Southern State Parkway, Long Island, N. Y.: 146
- Long Island State Park Commission, Department of Architecture; H. A. Magoon, designer: Jones Beach State Park, Long Island, N. Y.: 23
- Loomis, Charles Dana: Is This a New Deal or a Raw Deal for Architects?: 191
- Loven, Carl K.: Pencil rendering, Private Memorial: July *Frontis*. Pencil drawing, Montreuil-sur-Mer, France: Sept. *Frontis*. Pencil drawing, Old Bridge at Avignon: Dec. *Frontis*.
- Magoon, H. A., designer; Long Island State Park Commission, Department of Architecture: Jones Beach State Park, Long Island, N. Y.: 23
- Manship, Paul, sculptor: Paul J. Rainey Memorial Gates, New York Zoological Park, New York City: 133
- Masonry and the Small House, Modular, by Willard H. Bennett: 215
- Matthiessen, Erad A., archt.: Public Library, Cornwall-on-Hudson, N. Y.: 316
- Mayall, R. Newton: Wood Grilles, Santiago de Cuba, measured and drawn by: 261
- McDonald Observatory, Mt. Locke, Tex.; Warner & Swasey Co., designers and engr.: 210
- Measuring Rod for Housing Projects, A, by John Ihlder: 213
- Memorials: Pencil rendering: July *Frontis*. The Animal Frieze, New York State Theodore Roosevelt Mem., New York City: 31. Paul J. Rainey Mem. Gates, New York Zoological Park, New York City: 133. "Victory," Payne Whitney Mem. Gymnasium, Yale University: 210. Portrait of Daniel Chester French, Hall of Remembrances for American Artists, New York University: 211. Proposed Mem. to Thomas Jefferson and our National Expansion, St. Louis, Mo.: 211. Model of superintendent's residence, Morton Arboretum, Lisle, Ill.: 317. Portico (unfinished) Theodore Roosevelt Mem. Wing, Museum of Natural History, New York City: 317
- Metals, Today's Craftsmanship in Combining, by Eugene Clute: 203
- Modern Lighting Fixtures: A Portfolio of: 345
- Modular Construction Marches On: 45
- Modular Masonry and the Small House, by Willard H. Bennett: 215
- Montreuil-sur-Mer, France, from the pencil drawing by Carl K. Loven: Sept. *Frontis*.
- Morris, Edwin Bateman: Is Architecture Dead?: 1. The Reflecting Pool: 209, 342
- Morton Arboretum, Model of superintendent's residence for, Lisle, Ill.: Holabird & Root, archts.: 317
- Municipal Auditorium and Community Centre Bldg., St. Louis, Mo.; La Beaume & Klein, archts.: 74
- Murals in ballroom, Hotel Bossert, Brooklyn, N. Y.; Gretl Urban, painter: 317
- Museum: The Animal Frieze, New York State Theodore Roosevelt Memorial, New York City: 31. Brooklyn, N. Y.: 74. Portico (unfinished) Theodore Roosevelt Memorial Wing, Museum of Natural History, New York City: 317
- N. J. State Highway Commission; Morris Goodkind, bridge engr.: Shark River Bridge, Avon, N. J.: 75
- National City Christian Church, Washington, D. C.; Office of John Russell Pope, archt.: 251
- New Approach to Lighting Design, A, by Eugene Clute: 301
- New Castle, Del., Four lithographs of, by Albert Kruse: 153
- Nimmons, Carr & Wright, archts.: Proposed Sears, Roebuck & Co. Bldg., Chicago: 75
- Office Buildings: Field, Chicago: 74. The New U. S. Government Bldg. in Paris: 121. British Bldg. roof garden, Rockefeller Center, New York City: 210. Valley Municipal Bldg., Van Nuys, Calif.: 247
- Old Bridge at Avignon, from the pencil drawing by Carl K. Loven: Dec. *Frontis*.
- Opportunity in Building, The, by Clarence M. Woolley: 46
- Osborne, R.A., R.E., The Etchings of Malcolm, by Gerald K. Geerlings: 76
- Palace of the Royal Governors, Reconstructed, Williamsburg, Va.; Perry, Shaw & Hepburn, archts.: 75

INDEX—ARCHITECTURE—VOLUME LXX

- Park, Jones Beach State, Long Island, N. Y.; Long Island State Park Commission, Department of Architecture; H. A. Magoon, designer: 23
- Paul J. Rainey Memorial Gates, New York Zoological Park, New York City; Paul Manship, sculptor: 133
- Peaslee, Horace W.; Herbert Crisp and James R. Edmunds, Jr., assoc. archts.: Preliminary perspective showing restoration of State House, St. Mary's, Md.: 211
- Pencil Renderings: Private Memorial: July *Frontis*. Montreuil-sur-Mer, France: Sept. *Frontis*. Old Bridge at Avignon, Dec. *Frontis*.
- Pennsylvania Railroad Terminal, Philadelphia; Graham, Anderson, Probst & White, archts.: 137
- Perry, Shaw & Hepburn, archts.: Reconstructed Palace of the Royal Governors, Williamsburg, Va.: 75
- Pflueger, Timothy L., Arthur Brown, Jr., John J. Donovan, consulting archts.; C. H. Purcell, chief engr.; Charles E. Andrews, bridge engr.; Glenn B. Woodruff, engr. of design: San Francisco-Oakland Bay Bridge: Some Details: 39
- Pope, Office of John Russell, archt.: Constitution Hall of the D. A. R., Washington, D. C.: 13. The Animal Frieze, New York State Theodore Roosevelt Memorial, New York City: 31. National City Christian Church, Washington, D. C.: 251. Portico (unfinished) Theodore Roosevelt Memorial Wing, Museum of Natural History, New York City: 317
- Port of Calvi, Corsica, The, from the dry-point etching by Philip H. Giddens: Nov. *Frontis*.
- Portfolios: Garden Furniture: 47. Window Heads, Exterior: 107. Spires: 165. Business Building Lobbies: 225. Roof Trusses: 285. Modern Lighting Fixtures: 345
- Price, Matlack: The Challenge to Architectural Education: 311
- Private Memorial, from pencil rendering by Carl K. Loven: July *Frontis*.
- Prudential Insurance Co's. low-cost housing development, Newark, N. J.; Edmund C. Stout, archt.: 74
- Purcell, C. H., chief engr.; Charles E. Andrews, bridge engr.; Glenn B. Woodruff, engr. of design; Timothy L. Pflueger, Arthur Brown, Jr., John J. Donovan, consulting archts.: San Francisco-Oakland Bay Bridge: Some Details: 39
- Reflecting Pool, The, by Edwin Bateman Morris: 209, 342
- Reinhard & Hofmeister; Corbett, Harrison & MacMurray; Hood & Foulhoux, archts.: British Bldg. roof garden, Rockefeller Center, New York City: 210
- Rich, Lorimer, archt.: Headquarters Bldg., Governors Island, N. Y.: 211
- Rodgers, John B.: Can Germany Turn Back the Clock in Architecture?: 61
- Roof Trusses: A Portfolio of: 285
- Roosevelt Memorial, New York State Theodore, The Animal Frieze, New York City; Edward Field Sanford, Jr., sculptor; Office of John Russell Pope, archt.; Carving by John Donnelly: 31
- Roosevelt Memorial Wing, Theodore, Portico (unfinished) Museum of Natural History, New York City; Office of John Russell Pope, archt.: 317
- Royal Institute of British Archts. Bldg., London; G. Grey Wornum, archt.; James Woodford, sculptor of the doors: 318
- Sanford, Jr., Edward Field, sculptor: The Animal Frieze, New York State Theodore Roosevelt Memorial, New York City: 31. "Victory," Payne Whitney Memorial Gymnasium, Yale University: 210
- San Francisco-Oakland Bay Bridge: Some Details: C. H. Purcell, chief engr.; Charles E. Andrews, bridge engr.; Glenn B. Woodruff, engr. of design; Timothy L. Pflueger, Arthur Brown, Jr., John J. Donovan, consulting archts.: 39
- Schabarum, P. K., archt.; Dept. of Public Works, City of Los Angeles: Valley Municipal Bldg., Van Nuys, Calif.: 247
- Schlegel, Frits and Edvard Thomsen, archts.: Chapel and Crematorium, Copenhagen, Denmark: 319
- Schools and Colleges: Chapel at Kent School, Kent, Conn.: 83. Proposed Bard College, Columbia University: 210. Cambridge University Library: 316. Proposed Indoor Sports Bldg., University of Minn.: 317
- Schwab, Harvey A.: Is This a New Deal or a Raw Deal for Architects?: 187
- Scott, Sir Giles Gilbert, archt.: Cambridge University Library: 316
- Scott & Teegen, archts.: Bar, Joseph Urban room, Congress Hotel, Chicago: 317
- Sears, Roebuck & Co. Bldg., proposed, Chicago; Nimmons, Carr & Wright, archts.: 75
- Shark River Bridge, Avon, N. J.; Morris Goodkind, bridge engr.; N. J. State Highway Commission: 75
- Shops: Sears, Roebuck & Co., proposed, Chicago: 75
- Shurcliff, Arthur A., landscape architect: Boston's Prado: 307
- Simplifying Small House Practice, by Harrison Gill: 219
- Siren, J. S.: archt.: Finland's New House of Parliament, Helsingfors: 195
- Small, Philip L.: Is This a New Deal or a Raw Deal for Architects?: 183
- Spires: A Portfolio of: 165
- Standardizing the Bathroom, by Kenneth Edmunds: 337
- State House, St. Mary's, Md.; Preliminary perspective showing restoration of; Herbert Crisp and James R. Edmunds, Jr.; Horace W. Peaslee, assoc. archts.: 211
- Stevenson, Harvey & Eastman Studts, archts.: Entrance doorway, House of Byron Dexter, Croton-on-Hudson, N. Y.: 223
- Stout, Edmund C., archt.: Prudential Insurance Co's. low-cost housing development, Newark, N. J.: 74
- Straus Farm Group, Entrance to Men's Quarters, Red Bank, N. J.; Alfred Hopkins & Assoc.; archts.: 71
- Strauss Engineering Corp., designers: Cedar Street Bridge, Peoria, Ill.: 74
- Terminals, Garden; From a collection of photographs by William Pitkin, Jr. and Seward H. Mott: 259
- Thomsen, Edvard and Frits Schlegel, archts.: Chapel and Crematorium, Copenhagen, Denmark: 319
- Today's Craftsmanship in Combining Metals, by Eugene Clute: 203
- U. S. Government Building in Paris, The new; Delano & Aldrich, archts.; Victor Laloux, consulting archt.: 121
- United States Marine Hospital, Seattle, Wash.; Bebb & Gould, John Graham, assoc. archts.: 75
- University Housing Project, Atlanta, Ga.; Edwards & Sayward, archts.: 283
- Urban, Gretl, painter: Murals in ballroom, Hotel Bossert, Brooklyn, N. Y.: 317
- Valley Municipal Bldg., Van Nuys, Calif.; Dept. of Public Works, City of Los Angeles; P. K. Schabarum, archt.: 247
- "Victory," Payne Whitney Memorial Gymnasium, Yale University; Edward Field Sanford, Jr., sculptor: 210
- Vladeck, B. Charney: The Architect in the Body Social: 257
- Warner & Swasey Co., designers and engr.: McDonald Observatory, Mt. Locke, Tex.: 210
- Water-color: The Arsta Bridge, Stockholm: Aug. *Frontis*.
- Wendehack, Clifford C. and Roger H. Bullard, archts.: "Little House" of Better Homes in America, New York City: 316
- White, Lawrence Grant: The Brothers Asam: 7
- Window Heads, Exterior: A Portfolio of: 107
- Window Panes of Translucent Stone, by Eugene Clute: 241
- Wolfe, Lawrence, archt.: Office of: 341
- Wood Grilles, Santiago de Cuba, measured and drawn by R. Newton Mayall: 261
- Woodford, James, sculptor: Doors of Royal Institute of British Archts. Bldg., London: 318
- Woodruff, Glenn B., engr. of design; Timothy L. Pflueger, Arthur Brown, Jr., John J. Donovan, consulting archts.; C. H. Purcell, chief engr.; Charles E. Andrews, bridge engr.: San Francisco-Oakland Bay Bridge: Some Details: 39
- Woolley, Clarence M.: The Opportunity in Building: 46
- Wornum, G. Grey, archt.: Royal Institute of British Archts. Bldg., London: 318
- Yewell, Floyd: Water-color, The Arsta Bridge, Stockholm: Aug. *Frontis*.
- Zoological Bldg., proposed, Staten Island, N. Y.; Designed by Department of Parks, City of New York; Aymar Embury II, consulting archt.; Gilmore D. Clark, consulting landscape archt.: 75

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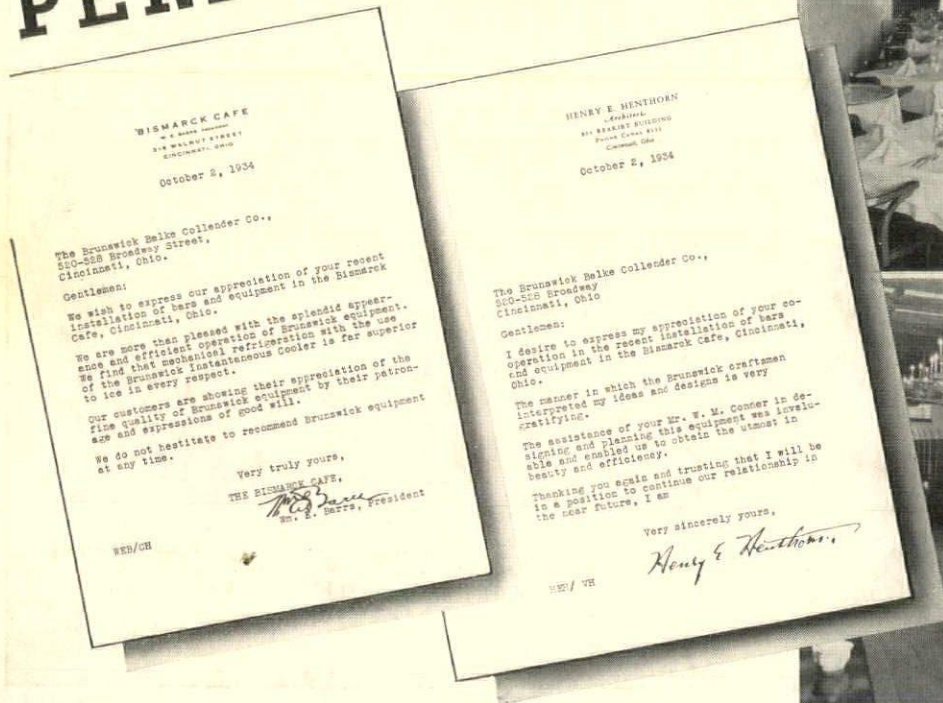

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