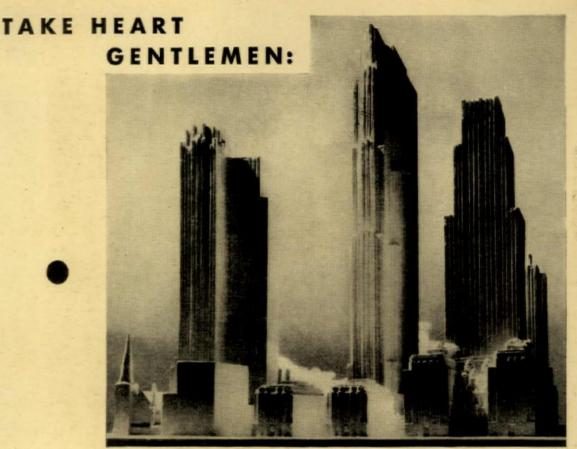


# AMERICAN

FOUNDED 1876

August 1932



Rockefeller Center—completed? Eleven buildings, occupying a huge "square" between 48th and 51st Streets and 5th and 6th Avenues, New York City. All Architectural Metal Work in the Sound Motion Picture Theatre and in the International Music Hall to be executed and installed by Wm. H. Jackson Company. Architects: Reinhard & Hofmeistet — Corbett, Harrison and MacMurray — Hood & Fouilhoux. Contractors: Barr, Irons, and Lane — John Lowry, Inc.

# Big Things ARE Happening -- Look at This 250 Million Dollar Project!

LET'S not be discouraged about business conditions! Let's not worry! Let's not dwell on the failures, or magnify the importance of the present moment! Instead, let's stand back for a broader, truer view—a wider-angled perspective on the situation as a whole

Big things are happening. New developments and projects are in progress right now—and on such a vast and impressive scale as to give hope and courage to every thinking man. Take Rockefeller Center, for example, New York's \$250,000,000 Amusement Center—begun in 1930 and to be completed in 1935. There's a "black eye" for Old Man Depression—and a fine tribute to broad-gauge thinking and planning!

The Wm. H. Jackson Company's contribution to this great project consists of the fabrication and installation of Architectural Metal Work in Bronze and Chrome Steel in Buildings Nos. 8 and 10, Rockefeller Center's "Sound Motion Picture Theatre" and "International Music Hall".

Other important buildings, now under construction, for which Wm. H. Jackson Company's Architectural Metal or Tile Work has been specified, are listed at the right.

Wm. H. Jackson Company (Est. 1827) produces all types of ARCHITECTURAL METAL WORK—cast, hand-wrought or machine processed—in Bronze, Brass, Nickel, Wrought Iron, Aluminum and the newer Non-Corrosive Alloys. These products include Casement and Double Hung Windows in both Bronze and Aluminum, and Ornamental Metal Work of every description. This Company also maintains a SPECIAL TILING DEPARTMENT which installs Outdoor and Indoor Swimming Pools and all types of Exterior and Interior Tile Work. Our Consulting and Collaborating Services—developed through wide experience in working on major products—are at your disposal without obligation.

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## 1932 ACHIEVEMENTS

PENN\_MUTUAL\_LIFE INSURANCE CO.
Philadelphia
Architect—Ernest J. Mathewson
Contractor—Doyle & Company

DIME SAVINGS BANK—Brooklyn Architects—Halsey, McCormack & Helmer, Inc. Contractor—Wm. Kennedy Const. Company

BRONX COUNTY BUILDING
Architects—Max Hausle & J. II. Friedlander
Contractor—Wm. Kennedy Const. Company

METROPOLITAN LIFE INS. CO. BLDG. New York

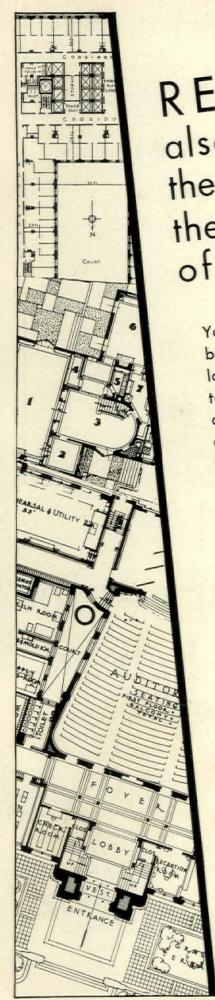
Architects—D. Everett Waid
Harvey Wiley Corbett
Contractor—Starrett Bros. & Eken

CHRISTIAN SCIENCE PUBLISHING SOCIETY BUILDING—Boston Architect—Chester Lindsay Churchill Contractor—Aberthaw Company

U. S. BOTANIC GARDENS—Washington Architects—Bennet, Parsons & Frost David Lynn Contractor—George A. Fuller Co.

INSURANCE CO. of NORTH AMERICA New York

Architects—Shreve, Lamb & Harmon Contractor—A. L. Hartridge Co.



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Acousti-Celotex on the ceiling of Main Banking Room, Long Beach Building & Loan Assn., Long Beach, California. Schilling & Schilling, Architects.

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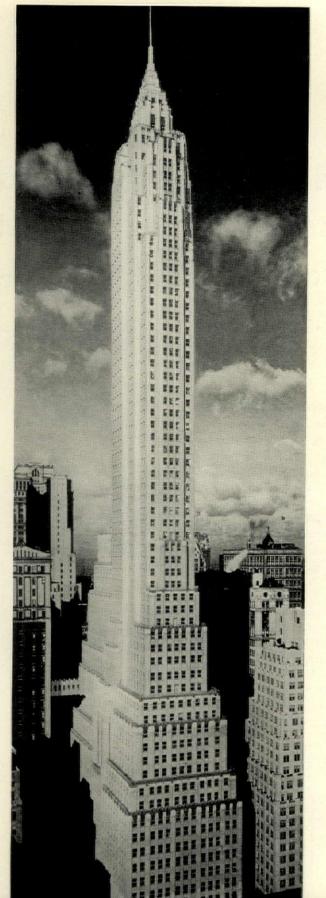
In banks and banking rooms, offices and large

business work rooms; in hospitals, schools and churches; in theatres, auditoriums and large halls of all kinds and radio broadcasting stations, Acousti-Celotex has been used.

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Fibre Tile . . . Acousti-Celotex Mineral Fibre Tile . . .
. . . . . . . . . Kalite Sound Absorbing Plaster . . .



# SIXTY WALL TOWER

HIGHEST IN DOWNTOWN NEW YORK, THIRD IN ALL THE WORLD

Architects: Clinton & Russell, Holton & George, Heating & Ventilating Engineers: Tenney & Ohmes, General Contractor: Jas. Stewart & Co., Plumbing Contractor: Jas. McCullagh, Inc., Heating Contractor: Riggs, Distler Company, Inc. All of New York City

OT only in physical dimensions but in all that goes to make such a building admirable, "60 Wall Tower" stands high. Architects, engineers, and builders have given it dignity and soundness above the ordinary in design, construction, and equipment. In beauty, convenience, and outlook its occupants find much that is inspiring. Among its several advantages—superior transportation facilities and fine unobstructed views from successive set-back levels, etc.—the management directs attention to highly improved heating and ventilating for the health and comfort of the occupants. In the forced hotwater system by which the building is heated, it is worthy of mention that NATIONAL Pipe was used. Thus once again, signal recognition is accorded to NATIONAL-

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See Sweets Page C-3414

# WALL-TEX fabric WALL COVERINGS



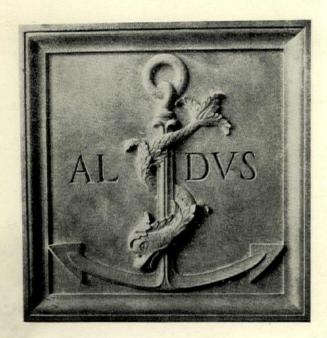
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Attention of \_\_\_





Printers' Ink mark in limestone, Library of Iowa State College. From "The Design of Lettering"

## THE DESIGN OF LETTERING

By Egon Weiss. Published by Pencil Points Press, Inc., New York. Illustrated; 174 pages; size 9 x 12; price \$5.00

A N exact system of letter spacing for inscriptions, etc., is presented in this book. Alphabets of every style, showing the application of this system, are worked out. Also included are the Hebrew and Greek alphabets, Arabic numerals, United States standard letters and symbols for airports and other unusual items, all presented in such form as to be quickly available for reference. A number of plates are reproduced from the "Writing Books" of master letterers of past centuries. Reproductions of various old and new tablets are presented.

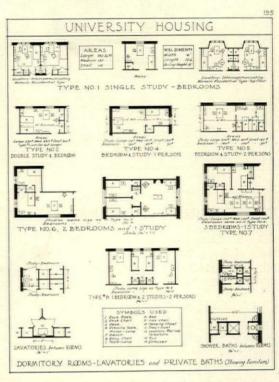
Some of the subjects presented are the fundamentals of lettering, spacing, monograms and initials, considerations in design, lettering in materials, elementary ideas about color, drawing for reproduction, etc.

### THE GATES OF LIGHT

By Beatrice Irwin, A.A., E.A.W. Published by David McKay Company, 604 South Washington Square, Philadelphia. Illustrated; 160 pages; size  $51/2 \times 81/2$ ; price \$3.00

THE book contains a record of the values of color and light in their many applications and forecasts their future possibilities. The author is one of the pioneers in the modern color movement and has illuminated buildings and exhibitions in many parts of the world

The book covers the nature and basis of art, style and structure in illumination, history of illumination and the value of shadows, colored light, esthetics of color and light in city planning, illumination of parks, gardens and fountains, interior illumination, filter illumination, international progress and future developments.



Typical plate from "Architectural Graphic Standards"

# ARCHITECTURAL GRAPHIC STANDARDS

By Charles George Ramsey and Harold Reeve Sleeper. Published by John Wiley & Sons, New York. Illustrated; indexed; 233 pages; size  $11\frac{3}{4} \times 9\frac{1}{2}$ ; price \$6.00

ERE is a book for which every architect and draftsman will find almost daily use. It consists of 213 sheets of fundamental details of all sorts, all well and specially drawn. The object of these plates is to present in condensed, convenient form all necessary information about types of construction, sizes of equipment, rooms, etc., which never seem to be at hand when wanted. For instance there is a sheet on fundamentals of retaining walls, several on waterproofing, fireplaces, cut stone, architectural terra cotta, flashing, etc.; various types of framing, window and door details; sizes of closets, bath room accessories, furniture of various types, kitchen equipment, etc.; space required for various games including ping pong, polo fields, handball courts, trap shooting, etc.; garages and parking, private roads and turns; and a veritable host of similar information for domestic as well as commercial work, giving everything in graphic form from the size of a fireplace flue to the drawer space required for a dress shirt.

Plates are all well drawn and the lettering is sufficiently large so that all dimensions and words are easy to read. The book is indexed so that all information is easy to find. The authors are associated with the architectural office of Frederick L. Ackerman, New York, and spent over two years in the compilation and drawing of material presented. Several colleges have already adopted this book as a standard text. It deserves a place in every architectural office.



House at Esher, Surrey. From "Small Houses and Bungalows"

# SMALL HOUSES AND BUNGALOWS

By Frederick Chatterton, F.R.I.B.A. Published by the Architectural Press, 9 Queen Anne's Gate, London, S.W., England. Illustrated; 104 pages; size 121/4 x 93/4; price 7/6 net

A COLLECTION of 104 examples of small houses and bungalows costing from 292 pounds to 2,000 pounds. Illustrations are mostly reproductions of photographs of houses with accompanying floor plans. Some of the illustrations, however, are plans and elevations of proposed houses. The book gives a good idea of the English small house as it is being built today.

# A STUDY OF ARCHITECTURAL SCHOOLS

By F. H. Bosworth, Jr., and Roy Childs Jones. Published for the Association of Collegiate Schools of Architecture by Charles Scribner's Sons, New York. 193 pages; size  $61/4 \times 91/2$ ; price \$1.50

THE result of a study made possible by a grant from the Carnegie Corporation, New York. It is based on information and impressions gained by personal visits to 49 schools in the United States and Canada and on such data from other schools as could be collected by correspondence. There is a general discussion of schools themselves and their curricula, an analysis of subjects taught and the manner of teaching, statistics regarding students, information as to requirements of all schools, cost of tuition, etc. Architects or teachers interested in the general subject of architectural education will find this book well worth reading.

# THE ADVENTURE OF BUILDING

By P. Graham. Published by the Architectural Press, 9 Queen Anne's Gate, London, S.W., England. Illustrated: 16 pages; size  $51/2 \times 81/2$ ; price 6d

A LITTLE book intended to help the public to understand how necessary are the services of an architect. It explains why going direct to a builder will not result in a cheaper structure, how utilization of the services of an architect result in the lowest price, how the architect can investigate various types of materials and equipment which the builder could never find time for, methods of financing, and similar information. It is illustrated by several designs of English houses.



Sketch made by a student at the University of Illinois. From "Outlines of the History of Architecture"

# OUTLINES OF THE HISTORY OF ARCHITECTURE

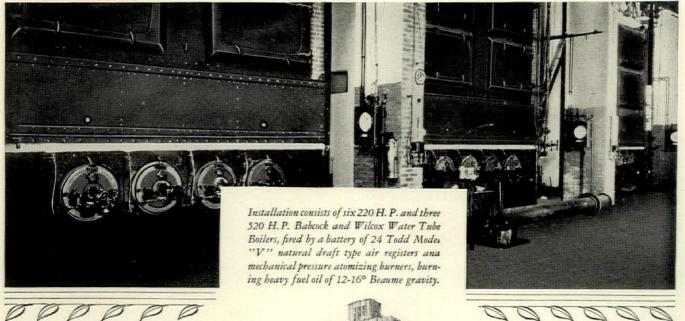
Part I. Ancient Architecture. By Rexford Newcomb, A.I.A. Published by John Wiley & Sons, Inc., New York. Illustrated; 176 pages; size 81/4 x 101/2; price \$2.50

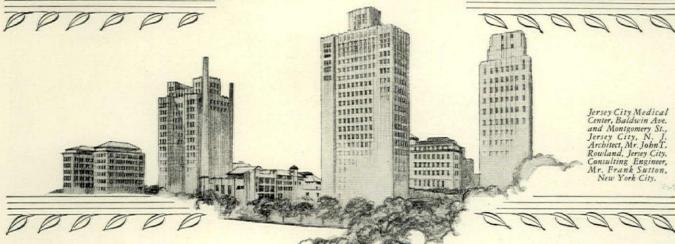
RIGINALLY prepared for use in the author's classes at the University of Illinois and now used in several schools of architecture. Printed on one side of the paper only so that the facing page may be used for notes or sketches. Covers the Egyptian style, the architecture of Western Asia, including the Assyrian-Babylonian style, Persian style, Sassanian style and the Hebrew style; the architecture of Greece and Grecian lands including pre-Hellenic or Aegean architecture, and Hellenic architecture; ancient Italic styles including the Etruscan style and Roman architecture. Concisely written, a great deal of information being given in a few words. The influence of the people, religion, climate, etc., on each style of architecture is discussed.

# PLANNING FOR RESIDENTIAL DISTRICTS

Edited by John M. Gries and James Ford. Published by the President's Conference on Home Building and Home Ownership, Commerce Building, Washington, D. C. Illustrated; indexed; 227 pages; size 6 x 9; price \$1.15

THIS book contains the reports of the committees on city planning and zoning, subdivision layout, utilities for houses, and landscape planning and planting, submitted at the recent conference on housing called by President Hoover. It is well written and might well serve as a handbook for members of city planning commissions, municipal engineers and consultants in city planning, engineering and landscape architecture.





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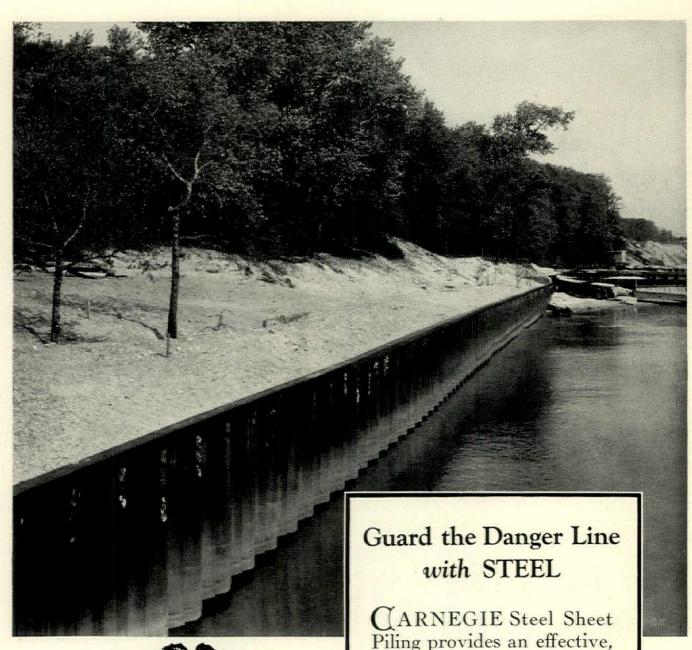
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CARNEGIE STEEL SHEET



Fifty-seventh Street, New York, is the subject of this month's cover by Howard Cook. It was done from the seventeenth floor of the Rolls-Royce Building shortly after noon on a bright day in winter. Mr. Cook has held one man shows at the Weyhe Gallery, New York, and is represented in the public collections of the Metropolitan Museum of Art, New York Public Library, Art Institute of Chicago, British Museum, Bibliotheque Nationale, Paris, etc. He was awarded, in April, 1932, a fellowship by the Guggenheim Memorial Foundation for creative work in Mexico.

# AMERICAN ARCHITECT

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NUMBER 2610

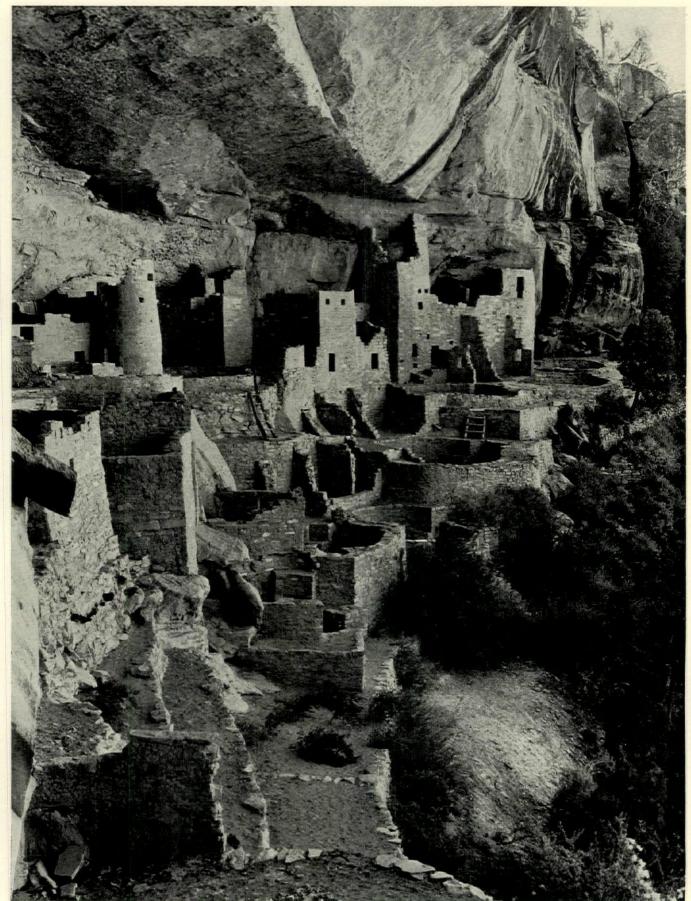
BENJAMIN FRANKLIN BETTS, A.I.A., Editor; ERNEST EBERHARD, Managing Editor; Walter E. Dexter, Advertising Manager; RAY W. SHERMAN, Editorial Director; R. F. GARDNER, Business Manager; C. Stanley Taylor, Merchandising Consultant

# AUGUST 1932

Cover-A Water Color by Howard Cook

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PHOTOGRAPH BY JOHN KABEL

# AN EARLY AMERICAN APARTMENT HOUSE

Flat roofs and apartment houses were old long before Columbus sailed from Lisbon. Ruins of the Cliff Palace built by cliff-dwellers in the Mesa Verde National Park, Colorado

# Stock Plans Are Not Necessary

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

RCHITECTS everywhere condemn the sale and use of stock plans, knowing they are not a substitute for architectural service. Sentiment on the question was made plain at the last convention of the American Institute of Architects in its discussion of continued endorsement of the Architects' Small House Service Bureau and by the national referendum on this question conducted by this magazine. The results were four to one against continued endorsement. The altruistic aims of the Bureau are not questioned. Hence it is reasonable to assume that opinion was registered against its stock plan feature.

An argument advanced to justify this feature of the Bureau is that people who purchase stock plans will not engage an architect because they cannot afford the added expense and that stock plans can be used to attract prospective clients for architects. It is also stated that architects cannot provide service for this kind of work at a price the public can afford. Both are fallacies.

DEOPLE do not ask the real estate agent to forego or cut his fee. As a matter of fact they pay this as part of the cost of the property without complaint. They do not ask the plumber to cut his cost and profit, nor do they ask the general contractor to eliminate his ten per cent. When they purchase a readybuilt house from a speculative builder they never know how many fees, commissions and profits they are paying. Yet they cannot afford the cost of a capable architect!

Possibly the large architectural office cannot profitably handle residential work. But there are numerous architects maintaining small offices in practically every community who can and do handle house work successfully. One such architect states that last year was the worst year he has experienced in seven years. His gross income was \$13,000. His income after deducting his expenses was \$8,000. Few people in the United States have incomes comparable to his.

Stock plans are not necessary to attract the public to architects. What is needed are reliable agencies to give the public unprejudiced information on building matters; research by architects that will show how the cost of house construction can be reduced; and publicity that will convince the public that architectural service is an economy, a necessity and a safeguard that is justified at any cost. Perhaps the Architects' Small House Service Bureau could do that.

Through Europe on a Bicycle..

# 40 YEARS AGO

By Elmer Grey, F.A.I.A.

Pasadena, California

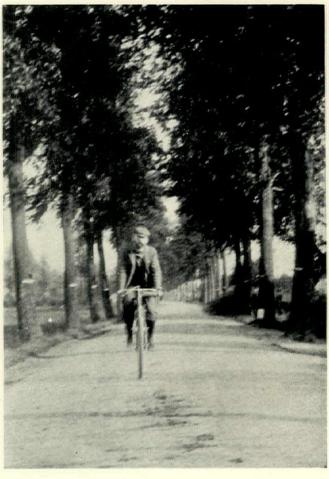
HEN I was nineteen I entered a competition offered by an engineering magazine for a water tower and pumping station and won the first prize of \$100. To this I added \$25 and bought my first bicycle. This was in 1890, before the days of automobiles or even of pneumatic tires. Shortly after that my attention was attracted to an advertisement announcing the formation for architects of a bicycle tour through France. I sent in my name and joined the tour. It had been arranged by a well-known architect of Portland, Maine; there were twenty-two in the party and, after a slow voyage, we landed one foggy morning off Boulogne-sur-Mer.

I shall never forget the impression the old red-tiled roofs and gray stone walls of that ancient city made upon my youthful fancy. The picturesque caps of the fisher women, the blue blouses of the men, the curious calls of the street vendors, and the brilliant colors of the fruits, vegetables, and awnings in the public market all combined to create a scene that stirred my imagination to its depths.

When we took to our wheels, the pleasure was even greater. Trains go too fast and in Europe they often do not go to the right places. The bicycle takes one over roads where knights once rode in armor past peasants' cottages, up to the doors of chateaux, and along the paths that Sir Walter Scott has made famous in his romances. It takes one over hills instead of cutting through them, and often up into hill-top towns that are not even seen from the railway.

Of course we had some mishaps. One nervous member of the party mistook the early morning cry of the fishwoman at Boulogne for a call that the hotel was on fire and rushing to the window, peered out frantically expecting to see smoke! The shock was such that he was too ill to proceed further. Another boy had the frame of his bicycle part when he was going down a steep hill and, although not seriously hurt, he also was put out of commission for a while.

The first great architectural monument we saw was

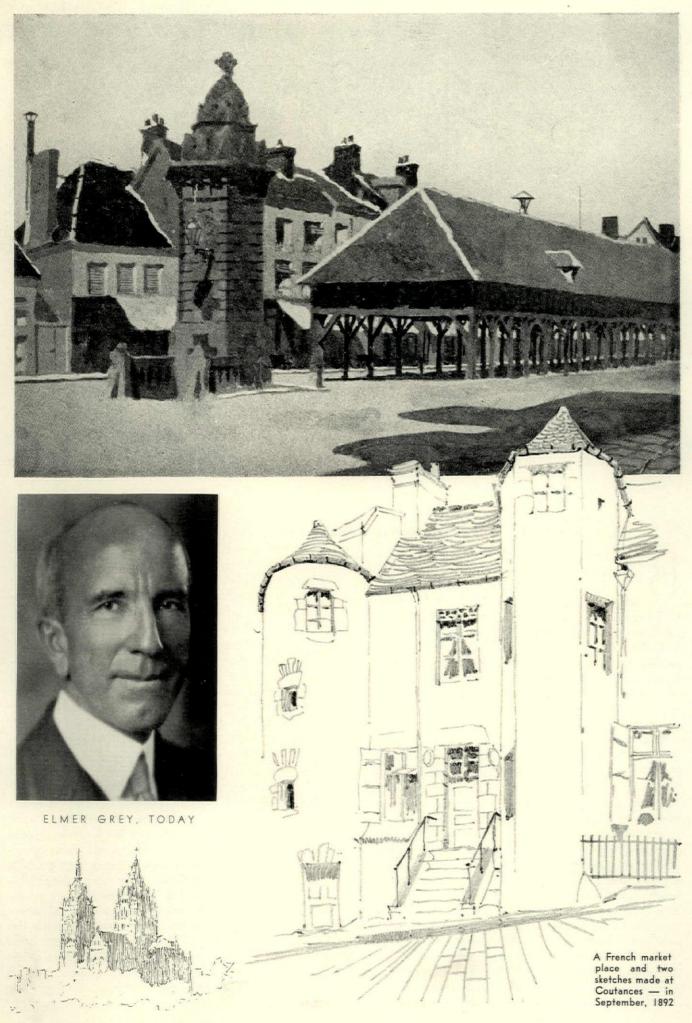


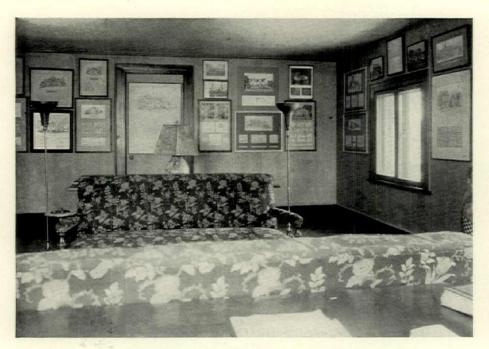
Somewhere in France-and in no hurry to get any place

at Amiens. Its wonderful cathedral made an impression upon me that is indescribable. I have heard it said that there is a language of spirit by means of which thought can be conveyed without the use of words. I think it must have been some such language as that which spoke to me through this majestic pile. It told me of the wonderful skill of its designer, of the fidelity of those who carried out his purpose, of the patience of the carvers in stone who shaped its tracery, and of the vast labor of head and hand and heart that entered into all the other intricate parts of its construction.

In the little town of Pierrefond one day we ran into Ridgeway Knight, an American artist who was then exhibiting in the French Salon and whose work was attracting much attention. On ten minutes acquaintance he invited some of us to dine with him at his home at Poissy-sur-Seine. The house had once been a monastery and was hid behind high, vine-covered walls in the midst of a garden. It had long tile-paved corridors where monks once recited their prayers. The dining room was raised several steps above the other rooms, there were deep casement windows with leaded glass, and the whole place had a beautiful old world atmosphere that enchanted us. At the end of the garden the placid Seine, fringed with reeds and rushes, flowed gently along. We did not wonder that an American artist loved such a retreat.

Joe Pennell joined us while we were cycling down the Loire valley. We first passed him on the road, mistaking him for a Frenchman and a very odd looking one at that. Later he was introduced to us (Continued on page 98)





ARCHITECTURAL EXHIBIT



DIRECT MAIL PIECE

# 7 Jobs and 21 Active Prospects

Material Dealer and Architects Hold Exhibition

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

Business for architects can be stimulated by architectural exhibitions that reach the public. This fact has been demonstrated in Philadelphia and Altoona, Pa. It is today again being proven in New Rochelle, New York. One month after an exhibition was opened in that city and as a direct result of it, four new houses and three alteration jobs had been started by architects, nineteen serious prospects had been sent to various architects, one architect received calls from two former clients who are considering building in the near future, and a large number of "deferred" prospects were placed on file.

The New Rochelle exhibition is more in the nature of a permanent than a temporary exhibit and is staged on the second floor of the main office building of the J. A. Mahlstedt Lumber & Coal Company, building material supply dealers. Arrangements for the exhibit were made with the Westchester County Society of Architects. It is a combination material and architectural exhibit. In the latter, only work of members of the society is shown. The total space devoted to the building material and architectural exhibit is 30'x80', additional space being available when and if the demand for more room arises. In addition to a large room devoted exclusively to architectural drawings and photographs there are also several rooms containing building materials of all kinds.

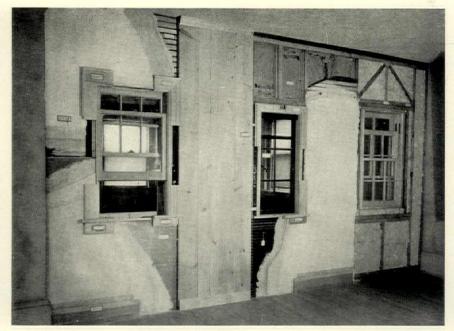
The idea for the exhibition originated with John E. Mullaney, president of the Mahlstedt Lumber & Coal Company who approached the Westchester County Society of Architects with a statement that he was con-

vinced that a demand for moderate priced new houses existed, and that this work could be directed to architects through the medium of an architectural exhibition. He agreed to provide the display space and promote the exhibition. The society appointed a committee consisting of Laurence Loeb and Edmund MacCollin to cooperate with the Mahlstedt Company.

A room in the material company's main office building was turned over to the committee to be put in suitable condition and authority given to draw on the company's material supplies and mechanics for this purpose. At small cost, the room was made presentable by refinishing the floor, covering the walls with stained plywood, painting the ceiling, and adding indirect lighting fixtures, settees and tables. Members of the society contributed photographs, sketches and plans of small and moderate sized houses suitably mounted for placing on the walls.

At the request of the Mahlstedt Company, the architects gave the company's salesmen sufficient data on the houses displayed so that they can intelligently discuss with prospective builders types of houses, plans, equipment and costs. The salesmen have been enthusiastically "sold" on the idea and make effective use of the exhibition. The company placed a large sign in front of its building, runs special advertisements in the local newspapers, and uses direct mail literature to inform the public of the exhibition. The company has assigned one of its employes to devote his entire time to interviewing prospective home builders and making sure that proper architectural, contracting and mortgage services are maintained when the owner commences building.





ADVERTISED AT ENTRANCE

MATERIAL EXHIBIT

# To Architects Within 30 Days

# Which Shows the Value of Educating the Public

Prospects who indicate a preference for the type of house exhibited by any one of the architects is referred to that architect. This is believed to be a more direct way to place a prospective builder in touch with an architect than to provide him with a list of architects from which to choose.

A S soon as the exhibition opened, it came to the attention of the company that financing new building was a definite obstacle. The president of the company immediately set about remedying this, and has arranged for supplying mortgage money on well-built, sound projects for owner occupancy that are designed and supervised by an architect. An important factor in the granting of loans is that the Mahlstedt Company guarantees the quality of materials and construction, thus making the mortgage an attractive one to conservative loan agencies.

The exhibition performs three important functions; it stimulates prospective builders to action and helps to crystallize their ideas, rounds out the building materials display of the company, and provides contacts for architects with active prospects. From the building material company's point of view, this direct contact with the owner and architect is beneficial and helps to build a lasting relationship.

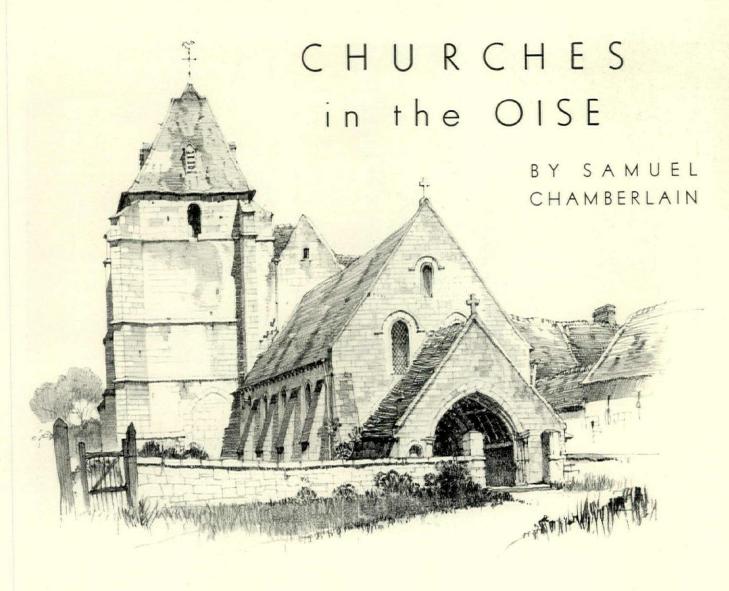
The Mahlstedt Company has taken a broad view of the idea and promotes it as a public measure conducted in cooperation with the Westchester County Society of Architects as an aid to stimulating local building activity in the belief that everybody who goes ahead and does something also encourages someone else to do something. The company has also taken the stand that it should supply any building information at its command to anyone whether or not a prospect for the sale of building materials.

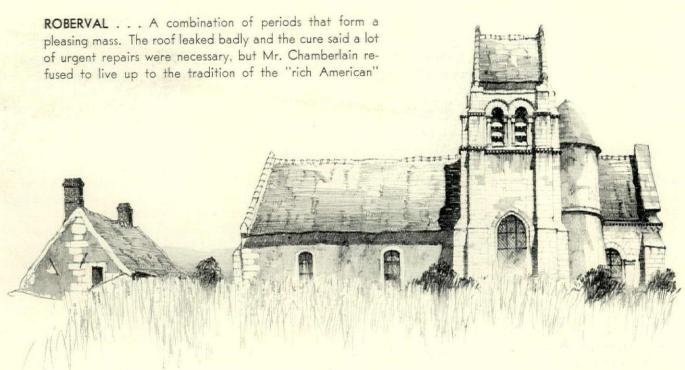
An exhibition of this type will attract people who would hesitate to consult an architect or other building authority for fear of being placed under obligation or being annoyed by salesmen. "Remote" prospects are brought into contact with the building industry under circumstances most likely to stimulate confidence and interest. Most people, even the idle curiosity seekers, have the desire to own their own homes and would build if they had the money and knew the best way to go about it. They can have their questions answered at an exhibition of this kind, ponder over them, and when circumstances permit, approach building in a way that is most likely to secure permanent satisfaction—that is, through the employment of a capable architect who will honestly help them to build, using good materials, and with proper consideration for their individual needs.

Laymen, as a rule, have little imagination when it comes to building. Let them see sketches, let them see quality construction and understand what it means—as they can in an exhibition of this kind—and the whole problem is reduced to terms which they appreciate.

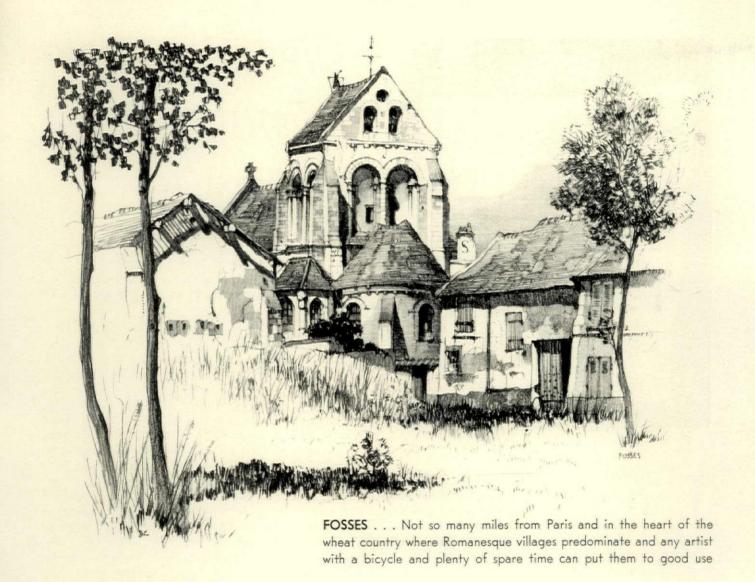
An exhibition of this kind has the advantage of being available to the public over a long period of time and can be visited when the prospect is seriously considering building. It also has the possibility of being changed from time to time so that people may be induced to come back again and again for new ideas.

The idea of creating (Continued on page 92)

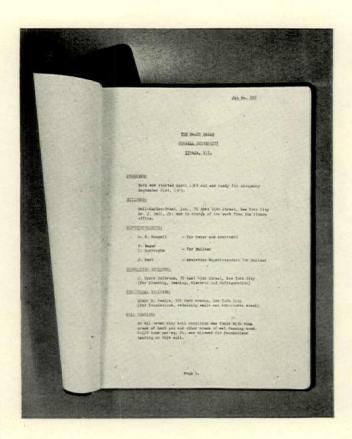




NOEL ST. MARTIN . . . Services are held in this twelfth century church only once a year, for the village is now little more than a handful of peasants in crumbling houses, and wheat fields nestle close to the old church







HE old saying that "a man builds only once" is giving way to the statement, "once a client, always a client." Architects who are aware of this fact are developing office methods and rendering such service as to insure that these subsequent jobs remain with their own offices.

Aside from producing good work the best insurance to bring back subsequent jobs, and incidentally to make them profitable, is to give each client a "Job Report" at completion of his work. Many architects will swallow twice at this thought of extra work, time and expense needed to deliver another document. However, the value of such a record greatly over-balances any expense or effort incident to its preparation, especially if the job is systematically done as part of the office routine.

The purpose of this document is to correct and supplement the specifications, to summarize all facts and details of the job for the future use of the owner or of the architect. Specification changes, substitutions and additions occur during the progress of the work and usually are recorded only in memoranda, letters or shop drawings. The information is often difficult to discover later; many materials used may only be recorded in the contractor's orders or in the subcontractor's records.

Material for the report should answer the following questions: Will it tell the owner how to replace or supplement equipment installed? Will it help the architect in case of future alterations or additions? Will it help the owner to maintain his plant properly? Will it give the architect data useful for other jobs?

To make the compilation easy, mimeograph forms may be set up with the main headings and open lines to be filled in as the information comes to light. The building superintendent on the job can fill out much of the report; the office accountant can do that part dealing with costs; and the man in charge of the job record all de-

# Reports That Help to Get the Client's Next Job

BY HAROLD R. SLEEPER of the Architectural Office of Frederick L. Ackerman, New York

cisions made in the office, contracts let, and so forth. When all work is complete the report can be re-typed with copies for the owner, the architect and the contractor. A section of the report should be set aside for the architect only and held in his office. This section would state the basis of the contract with the owner, cost of work to the architect, contracts with engineers, and similar data. The size of the report may vary from one page to thirty pages, depending entirely on the importance, type and size of the job and the probabilities of future work, or its value for future reference.

The "Handbook of Architectural Practice," issued by the American Institute of Architects, contains as Appendix A "Memoranda of Procedure," which is similar to the "Job Report." The main difference between the two is that the "Memoranda of Procedure" was prepared for use during a job as a record of actions taken rather than for its future value. The Job Report may well answer both purposes. Many offices have such clearly defined systems of procedure and of recording that the above mentioned system would be a duplication in many cases. This memoranda is excellent as a guide and should be studied by any office setting up a report form.

THE usual owner is defintely pleased to receive a neatly bound job report at the end of his long struggle. A business-like summary will later remind him of the architect, and the petty annoyances and arguments that are bound to occur even under the most favorable circumstances will fade from his mind much sooner with this useful document at hand.

Selfishly and financially, however, this post-specification is worth while to the architect. The fact that you can instantly answer questions in regard to former jobs cuts down the cost of answers to old clients who request information on repairs, alterations and additions.

Many offices are tided over slim periods by these second or third jobs for old clients. If the architect is prepared, these small jobs will be profitable and if the final taste in the former client's mouth was sweet, you are likely to automatically get the next job. This report may be a further burden for the office, but burdens that mean future work are a good investment.

# THE JOB REPORT

gives the client a complete record of the job including identification of all equipment and materials, tells the owner how to replace or supplement present equipment, facilitates proper maintenance and gives data useful to the architect for other jobs

| Job Name        |  |
|-----------------|--|
| Job Number      |  |
| Owner's Name    |  |
| Owner's Address |  |

### DESCRIPTION OF SITE

Note characteristics of the site, location, lot number, block number, area, percentage of lot covered. Sites considered for secondary buildings not built. Physical data pertaining to the site also may be entered here.

### DESCRIPTION OF THE BUILDING

Intended use, such as number of students in school, seating of a church, etc. State if any provision was made for expansion or additions to building.

### CALENDAR OR DIARY

Give date of important items such as:

- 1. Architect receives job
- Architect's sketches started
- 3. Working drawings started 4. Invitations sent to bidders
- 5. Bids received
- 6. General contract let
- Other contracts let
   Work started
- 9. Foundations inspected
- 10. Roofed in
- 11. Work finished
- 12. Final payment made

### DIRECTORY OF THOSE CONNECTED WITH THE WORK

(Name, Address and Telephone Number)

Building Committee Orders and certificates sent to Architect's bill sent to Surveyor's name and address Owner's fire insurance agent and his address State whether architect reported costs to insurance agent Architect's representative in charge Architect's superintendent or clerk of the works Names of all engineers, such as structural, heating, plumbing, electric, elevator, etc. Material tested by Soil tests by Special field inspections by Modelers Bonding Company General Contractor—List of Bidders

General Contractor selected, address Names and addresses of all of subcontractors. Divisions of cost may be inserted here or the financial set-up may be kept entirely independent. This list should be secured from the general contractor at the close of the work.

Contractors to whom work was awarded directly. Names, address and amounts of contracts if desired.

## RECORD OF MATERIALS AND EQUIPMENT

Mechanical equipment, use and care Services, etc. Unit Prices

This is the most important heading in the report and in order to include all items of interest it is advisable to use a check list to avoid omissions. Here is where all decisions as to type of brick used, make of pumps, characteristics of current name of medicine cabinets, etc., are set down. Many specifications allow a wide latitude in final selections and unless the superintendent makes note of these as they go

into place it will be difficult to later find out what was used.

Sizes of all service mains, pressure source, etc., should be noted. Here the owner may be instructed as to the care and maintenance of special floors, woodwork, etc. The check list for this work should be ample and include furnishing fixtures, accessories, equipment when they have been under the architect's jurisdiction. Such items as bulletin boards, lettering, lockers, flower boxes, signs, ironing machines, ranges, etc., are likely to be looked up for repairs or additions.

### AREA AND CUBAGE

Large buildings should be classified as to use with subtotal of both area and volume, and percentages should be set up of these uses for help on further preliminary planning. On residences the simple statement of area, volume and cubic foot cost will suffice.

### GUARANTEES

The various guarantees and certificates, building permits, etc., should be listed giving limiting dates and these papers themselves bound thereinafter.

### FINANCIAL

If the financial set-up was not included under contractor and subcontractor, a separate section may be added giving as much detail as thought necessary. The following summary may be sufficient for small work:

| Building cost—General contractor's cost               |
|---|
| Building cost—Work done directly by other contractors |
| Deduct for items not part of cubage cost              |
| Net building cost for cubage cost                     |
| Equipment   |
| Accessories   |
| Furnishings   |
| Landscape and planting                                |
| Total cost (except fees)                              |
| Cost per sq. ft                                       |
| Cost per cu. ft                                       |
|   |

# ARCHITECT'S SECTION

The section of the report for the architect's own use would consist of the following:

Agreement with owner--date Terms in brief Agreement with engineers Agreement with testing laboratories
Architect's cost, profit, (This should also be set up as a
per cent of the total fee. FROM THE

CHURCH

OF THE

PRECIOUS

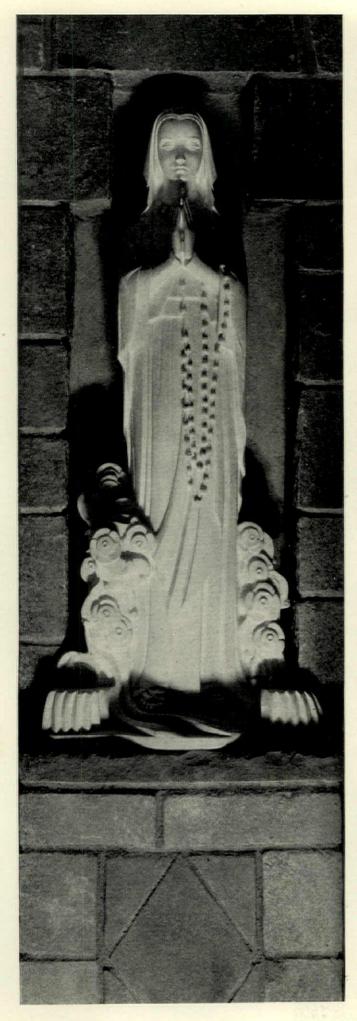
BLOOD

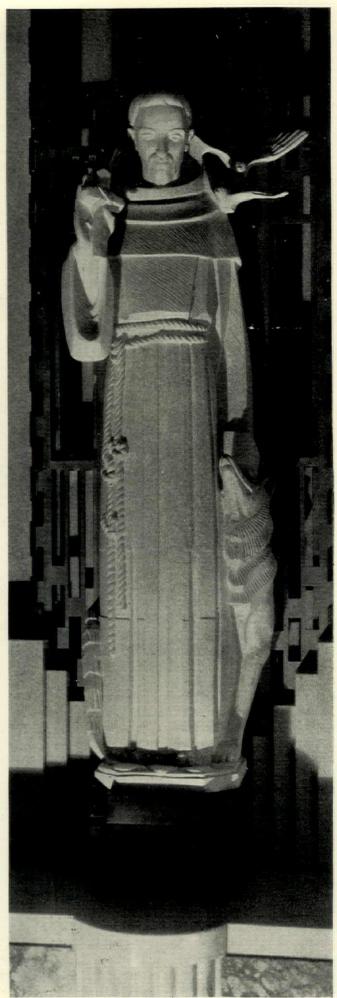
Astoria Long Island

HAZEL CLERE Sculptress

HENRY J. McGILL Architect

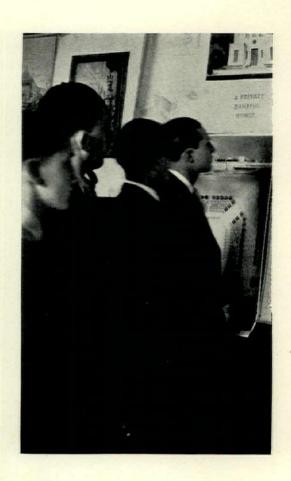






# Philadelphia Architects Take Architecture Into The Public Schools

BY VIRGIL L. JOHNSON, A.I.A. Member of the Education Committee, Philadelphia Chapter, A.I.A.



RCHITECTURE has been taken into the public schools by the Committee on Education of the Philadelphia Chapter, A. I. A., through the compilation of a circulating exhibition of student work from the T Square Club Atelier. The drawings are exhibited for two weeks in each of ten selected high schools. When the exhibition opens, an architect gives a talk in the school auditorium on architecture. The purpose of this talk is, in general, to bring the exhibition to the attention of the students, awaken an appreciation of architecture and at the same time stimulate a desire for the beautiful in building. In some cases, entire classes accompanied by an instructor make special visits to the exhibit and keen interest is aroused.

To accurately measure the amount of real educational work of these exhibitions is, of course, problematical, but it is safe to say that this exhibit in the ten schools was brought to the attention of about 30,000 day students and 20,000 evening school students. The important fact is that the subject of architecture is brought to the attention of 50,000 young people at a period in their lives when impressions are most enduring.

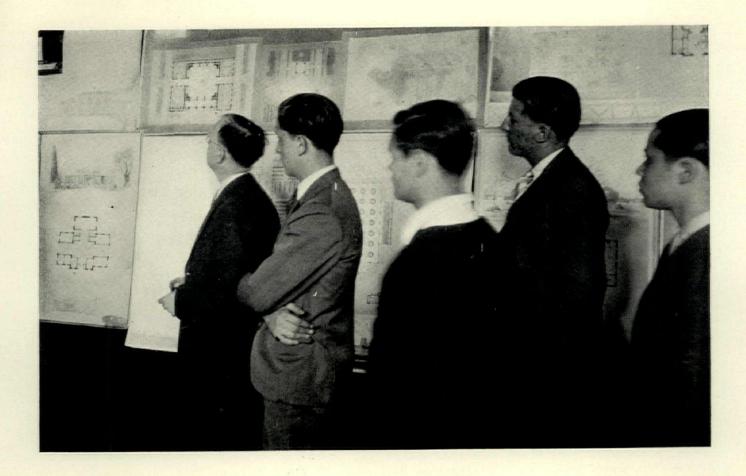
The results of these exhibitions will be better understood by some of the comments from the school principals. One principal writes: "The architectural exhibition from the T Square Club was very helpful to our students who are majoring in architecture, and the student body and faculty in general. It gave them a better conception of the methods pursued in presenting competition drawings." Another principal gives this opinion: "I want to express to you our appreciation of the privilege of exhibiting the drawings made in the T Square Club Competition. The opportunity to have

these drawings available for our students in art is recognized as a very valuable adjunct to the work being done by our teachers of art and I am sure the other schools that will later have the exhibit will share our opinion as to the advantages to be derived from such an exhibition." Another expresses his appreciation as follows: "The exhibit of the T Square Club has been very favorably received and we hope that each year will bring a similar exhibit."

Credit should be given to the architects on the Chapter Committee who have willingly given their time to this work and with pleasure we mention D. Knickerbacker Boyd, John Kell, W. Pope Barney, John F. Harbeson, Clarence C. Zantzinger, George Howe, William F. Hough, Roy F. Larson, Professor Jean Hebrard, and Frank R. Watson.

HILE the Chapter has not committed itself to any definite educational policy the entire work of the committee during the past three years has been of more than usual interest to those who believe that the education of the architect should commence early in life—if possible in the Junior High School. Much thought has been given to the problem of the early education of the public school student in the appreciation of architecture and the allied arts with the thought that courses of studies leading up to a broad knowledge of these arts, whether or not their use would ultimately become a part of the student's preparation for professional training, should be included in the Junior High School curriculum.

The educational plan of the public school system of Philadelphia also includes instruction in the New Pennsylvania Museum of Art during and after school hours.



The chairman of the Chapter committee, Irwin T. Catharine, was instrumental in bringing this about for, as far back as 1921, he prevailed upon the Board of Public Education to adopt a resolution recommending that "practical instruction in art subjects to public school pupils be given in the new museum and that the expenditure incident to the furnishing and maintaining of the museum classroom be borne by the School District of Philadelphia."

And we read in the report of Theodore M. Dillaway, Director of Art Education, another member of the Chapter committee, that: "Seven years after the adoption of this resolution, October, 1928, these classes began actual operations. The public school classes were conveyed to the museum in school busses, where they were conducted through by the Supervisor of art, who explained the architectural features of the building and discussed with the pupils the art and beauty of the various collections. Following these visits the pupils wrote interesting compositions and gave talks in school upon what they had seen at the museum. The Parthenon of history became a real structure and columns representing the different orders were better understood and recognized in local architecture; pictures adorning the school walls took on a new significance and the children expressed a desire to purchase reproductions of some of the paintings in the museum, which indicated the educational value of such pilgrimages. Two years and a half have elapsed since the inauguration of public school classes at the museum and during that interval thousands of children have benefited by this experience."

The appointment in May and February, 1930-31, of regular museum instructors for public school children

made it possible to carry out the project of organizing classes for selected groups of specially talented high school students. Through the courtesy of the museum authorities, an appropriate classroom was set aside for this purpose and suitably furnished and equipped by the Board of Education. Two classes, composed of selected pupils specializing in art in several high schools, were organized last term. These classes have been held on Wednesday afternoons, after school, and Saturday mornings throughout the school year. The Board of Superintendents, recognizing this unusual educational opportunity, has passed a resolution granting extra credit toward graduation to students who complete the course.

THE work of the committee has been further extended during the past year under the chairmanship of Robert R. McGoodwin. In addition to the public high schools, an exhibition was held at the Boys Catholic High School. During this exhibition Frank R. Watson addressed the junior and senior classes, presenting the subject of architecture in his usual interesting and enthusiastic manner.

The work of the Chapter committee has been of interest to those who believe that no man is broadly educated without a knowledge of architecture. Felix du Pont, vice president, E. I. du Pont de Nemours and Company, has said, "I think that all educated men ought to have at least a short course in the history and principles of architecture. Finally, I believe that boys before choosing their college course ought to have constantly held before them by lectures given in their schools, the importance of a broadening education to prepare them to get the best out of life."

# FOUND in the U.S. Patent Office

# BY MILTON WRIGHT

Former Associate Editor of "Scientific American"; author of "Inventions and Patents"

PPARENTLY the house that sells most readily is the house that is a little bit different from other houses or has little added features which show that the architect understands what home owners want. Why, then, don't we get together and do something to make dwellings more interesting? Let's put some new and original ideas into the houses we plan. But where are we going to get these new and original ideas?

I was waiting for that question, and I have the answer ready. We will get them from the United States Patent Office. For example: Suppose you were going to build a house in Kansas where the wind blows so hard that the people run out of their homes and dive into cyclone cellars. You probably heretofore would have worked along standard, orthodox lines to make that house strong and firm so that it could resist the wind.

Now that I have tipped you off to the Patent Office, however, you can do something different. An inventor has solved your problem for you in a way you might not have thought of in a hundred years. He has invented and patented what he calls a tornado proof house. It is built on a pivot. Jutting out from one end is a large shield. The wind blows against it and swings the house around, heading into the wind like a huge inhabited weather vane, with its nose always pointing into the wind. Of course, some day you might come up the street and find yourself facing the kitchen door instead of the parlor, as you had left it in the morning, but what of that? The house at least would be on the same lot.

This inventor, by the way, lived in Brooklyn. I e had read about the strong breezes they have in Kansas And don't you realize that, if you built a house like that, people would come from miles around to look at it?

Suppose, on the other hand, you were building a big apartment house in New York City. You would be considering, among other things, the question of safety in the event of fire. You might hesitate to mar the front of the building by placing stair or ladder fire escapes there, and yet you would want prospective tenants to know that their safety was taken care of.

An inventor in Trenton, Tennessee, has arranged it nicely for the New Yorkers. His patent papers explain it in these words: "This invention relates to an improved fire escape or safety device, by which a person may safely jump out of the window of a burning building from any height, and land, without injury and without

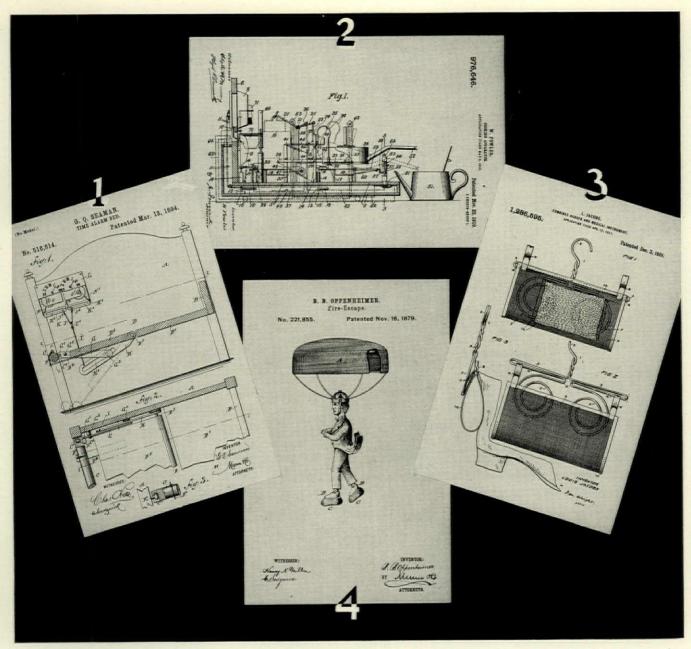
the least damage, on the ground. It consists of a parachute attached, in suitable manner, to the upper part of the body, in combination with overshoes having elastic bottom pads of suitable thickness to take up the concussion with the ground."

The parachute, he goes on to say, is made of soft or waxed cloth, awning cloth or other suitable material. It is about four or five feet in diameter, stiffened by a suitable frame, and attached by a leather strap or other fastening to the head, neck or arms. You just have it folded up neatly in a little cabinet beside the window. If the building catches on fire you open the cabinet, attach the parachute to your head, put the padded shoes on your feet and step out the window. One ought to be provided for each member of the family and for each guest likely to be in the house. If there is one guest you don't particularly like, merely arrange to have one too few of these patented fire escape parachutes.

Somebody is like to object, "But doesn't it take a considerable time for a parachute to open?" Oh, that's a detail, and, anyway, you can't blame the inventor if the fire doesn't break out in an apartment high enough up to make parachute jumping safe.

But fires at best are only of rare occurrence. The thing that interests a home owner 365 times a year is his sleeping arrangements. To build into the house an attractive, comfortable bed is no novelty. To build one, however, so that it will get the home owner up in the morning in time to catch the 8:15 train without waking the home owner's wife is something that will appeal to every house buyer. The inventor lives in Brooklyn. In his patent papers he says: "The invention consists of a pivoted bed bottom, connected at its free end by ropes with a drum revolvably journaled in the ends of the bed, the said drum forming a side for the bed. The object of the present invention is to provide a new and improved still alarm bed, which is simple and durable in construction and arranged to cause the occupant to roll out of bed at a predetermined time."

The beauty of this invention, the inventor points out in more or less technical language, lies in the fact that two persons can sleep in the same bed and only one need be awakened. This is accomplished by having the double bed in two sections. Mr. Doe wants to get up at 6:45, but Mrs. Doe wants to sleep until it's time to get the children off to school. Very well, Mr. Doe sleeps on the outside. His side of the bed is hinged to the other and is suspended by ropes passing over a drum fastened



 A bed that dumps the stubborn sleeper out on the floor

2. A simple apparatus to provide hot water for the late riser

Handy clothes hanger and musical instrument combined in one

4. A fire escape for quick exit from burning buildings

to the ceiling. At 6:45 the silent alarm clock goes off, a catch holding the drum motionless is released, and the drum starts to revolve as Mr. Doe's weight bears down. The outside edge of the bed settles steadily down until it is resting on the floor. Mr. Doe is rolled out, and, naturally, wakes up. Mrs. Doe sleeps on serenely.

But who's going to get Mr. Doe's breakfast and heat the water for his shave? Why, the inventors are, of course. An English army officer has patented the very thing. He says in his patent:

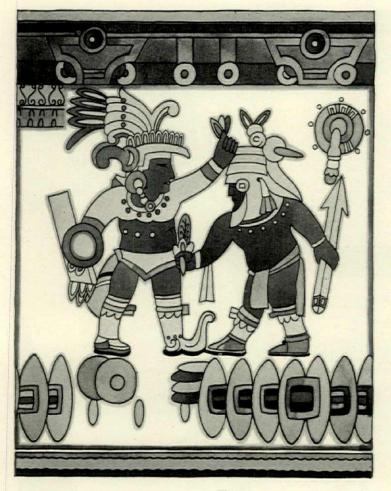
"This invention has reference particularly to apparatus wherein the stoves are lighted automatically at a predetermined time through the medium of an alarm clock, and the kettle is adapted to automatically empty its contents into a receptacle, such as a teapot, upon such contents boiling. A further object is to render it serviceable in connection with shaving purposes as well as heating and cooking purposes."

It's these little things that count. Every man who has

sold houses knows what an advantage it is to be able to open a door in an unexpected spot and say, "Look, madam, we have even put a clothes closet here." I know of one man who sold a house right after he had opened a closet door and pointed to a nice clothes brush with a bright red handle hanging there.

But why not go a step further? Why not put in a musical shoe hanger? It has been patented by a California inventor. The device is made of a piece of strong wire, bent and coiled ingeniously, with a frame or cushion of woven wire mesh rolled or bent about the outside. Clamps are provided to hold the shoes. Also, the inventor points out, "it may be used as a towel, necktie or clothes holder, as a frame to hold fly paper, as a device for hanging up wet laundry out-of-doors or over a steam heater indoors, the spiral coil being passed through the button holes, and for many other uses."

As for its use as a musical instrument, the inventor goes on to say: (Continued on page 92)



From
MEXICO
and
SPAIN...

# AZTEC WARRIORS

By Norman H. Kamps Pasadena, California

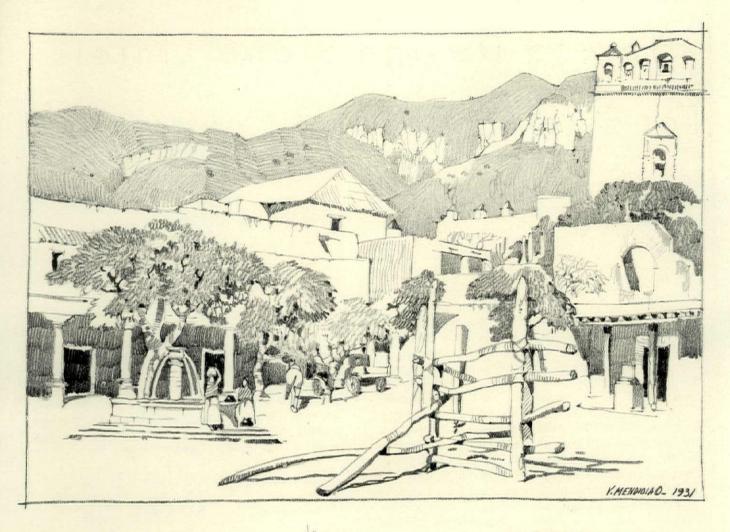
A copy of sculpture on a sacrificial stone in the museum in Mexico City. Mr. Kamps proposes to use drawings like this to illustrate a book on Mexico

# SALAMANCA

By George Nelson Hartford, Connecticut

Made on smooth Bristol board with pencils of varying grades of softness. On the facing page is a drawing by Mr. Nelson of a gate of the Jesuit college





# TALE SERVINARIO SALAMANKA.

# MEZTITLAN

By V. Mendiola Mexico City, Mexico

A typical scene in a small mining town in the central plateau of Mexico. Mr. Mendiola is a professor in the faculty of architecture of the University of Mexico City. Many of his sketches were shown in the 1931 exhibition of the Architectural League of New York

Sketches by

NORMAN H. KAMPS

Pasadena, California

GEORGE NELSON

Hartford, Connecticut

and

V. MENDIOLA

Mexico City, Mexico

27

# How to Design Stone Lintels For Safe Economical Construction

# BY CHARLES C. HURLBUT

Hurlbut & Van Vleck, Consulting Engineers, New York

TONE lintels, when they are designed at all, are usually proportioned by some rule of thumb that takes little account of the actual properties of the stone or the conditions of loading. More often the designer is guided solely by his judgment of what "looks right" or by proportions used in other cases.

One of the difficulties encountered in attempting to design stone lintels by scientific methods is the comparative lack of accurate data on which to base unit stresses and the wide variations in such data as are available. Tests of stone in compression give fairly consistent results, but transverse tests, involving tension, seem to be quite erratic, though, when analyzed, they are less so than would at first appear. The variations are due in part to the natural differences in composition or texture between different samples of even the same kind of stone and in part to the flaws and seams that frequently occur in large pieces. Flaws which might have little effect on the compressive strength may reduce the tensile strength to almost zero.

Another cause of variation in strength is in the direction of the strata in reference to the stress. Most stones are stronger when tested with the stress perpendicular to the natural strata or bed than when parallel to it. That is to say, a lintel placed as the stone lay in the quarry is stronger than one placed on edge. This applies particularly to stones formed by deposit in water, like limestone, marble and sandstone. Such stones are from twenty-five to one hundred per cent stronger in their natural position than on edge.

The Bureau of Standards at Washington has made tests on several hundred specimens of stone to determine their properties, including the modulus of rupture or fibre stress at the moment of failure, which is the index of transverse strength. For limestone the modulus of rupture ranges from a minimum of 440 lbs. per square inch to a maximum of 2525 lbs. per square inch. This looks like too wide a variation on which to base any computation, but if some classification is made of the quality of stone and tests on the bed and on edge are separated, it becomes possible to select a rational value for a working stress.

If we use the average value of limestone tested on edge with a safety factor of four, the working load is 238 lbs. per sq. in., which is nearly twice the minimum value. This would seem to be a safe and conservative

value and Table I (on the opposite page) is based on it. This table may be used with confidence for any sound Indiana limestone. If the stone is so cut that the natural bed is horizontal or perpendicular to the direction of stress and the stone is free from seams or flaws, the

weights given in Table I may be increased one third. Selecting the tests made on sound Indiana limestone of a grade suitable for use as lintels, the values of the modulus of rupture were found to be as follows:

|         | ONBED | ON EDGE |
|---------|-------|---------|
| Maximum | 1810  | 1505    |
| Minimum | 845   | 440     |
| Average | 1280  | 957     |

Marble appears to be even more erratic than limestone, but this is due to wide variation in its structure. Table II is based on white or gray Vermont marble, using a fibre stress of 358 lbs. per sq. in., which is derived in a manner similar to that given for limestone. i.e. one fourth of the average modulus of rupture of this class of marble tested on edge. As this is only 38% of the minimum for similar marble, it is perfectly safe for sound marble.

So-CALLED fancy marbles with pronounced veining should seldom be used to support weight, though some kinds are even stronger than the white. Verde antique, for instance, has high test values when tested perpendicular to the bed, but low values when tested parallel to it. The highest values of any marbles tested by the Bureau of Standards were given by some black varieties, which seem to be equally strong in both directions.

In using the tables, dimensions not given may be interpolated by proportion. The following example will illustrate their use:

A limestone lintel has a clear span of 8'-0". The thickness of stone, i.e., the reveal, is 8" and the lintel supports a belt course weighing 30 lbs. per lineal foot in addition to four feet of brickwork 12" thick. total superimposed load is, therefore, 510 lbs. per lineal foot, which, dividing by 8, the thickness, gives 64 lbs. per inch of thickness. From Table I, under the column for a clear span of 8'-0", is found a load of 61 lbs. opposite the depth of 14". As this is 3 lbs. less than the required load, a depth of (Continued on page 109)

TABLE I . . . INDIANA LIMESTONE LINTELS

Safe Superimposed Loads in Pounds for Each Inch of Thickness

| Dep | th  |      |      | Depth Clear Spans in Feet |      |      |      |      |      |           |      |      |  |
|-----|-----|------|------|---------------------------|------|------|------|------|------|-----------|------|------|--|
|     | 4'  | 5'   | 6'   | 7'                        | 8'   | 9'   | 10'  | 11'  | 12'  | 13'       | 14'  | 16'  |  |
| 4"  | 19  | (11) | (6)  | (4)                       | (2)  | (1)  |      |      |      |           |      |      |  |
| 5"  | 30  | 18   | (11) | (7)                       | (4)  | (3)  | (1)  |      |      |           |      |      |  |
| 6"  | 45  | 27   | (17) | (12)                      | (8)  | (5)  | (3)  | (1)  |      | (arteria) |      |      |  |
| 7"  | 62  | 38   | 25   | (17)                      | (12) | (8)  | (5)  | (3)  | (2)  | *****     |      |      |  |
| 8"  | 82  | 51   | 34   | (24)                      | (16) | (11) | (8)  | (5)  | (3)  | (1)       |      |      |  |
| 9"  | 105 | 66   | 44   | 31                        | (22) | (15) | (11) | (8)  | (5)  | (3)       | (1)  |      |  |
| 10" | 131 | 83   | 56   | 39                        | 28   | (20) | (15) | (11) | (7)  | (5)       | (3)  |      |  |
| 11" | 160 | 101  | 69   | 49                        | 35   | (26) | (19) | (14) | (10) | (7)       | (4)  | (1)  |  |
| 12" | 191 | 122  | 83   | 59                        | 43   | 32   | (24) | (18) | (13) | (9)       | (6)  | (2)  |  |
| 14" | 263 | 168  | 115  | 83                        | 61   | 46   | 34   | (26) | (21) | (15)      | (11) | (5)  |  |
| 16" | 345 | 222  | 153  | 110                       | 81   | 62   | 47   | (37) | (29) | (22)      | (17) | (9)  |  |
| 18" | 439 | 284  | 196  | 142                       | 106  | 81   | 62   | 49   | (39) | (30)      | (24) | (14) |  |
| 20" | 545 | 352  | 245  | 177                       | 133  | 102  | 79   | 63   | (51) | (39)      | (31) | (20) |  |

NOTE: Loads in parentheses are less than a triangular loading of brickwork. See Table IV. Weight of lintel has been deducted

TABLE II . . . MARBLE LINTELS (White or Gray Vermont)

Safe Superimposed Loads for Each Inch in Thickness

| Dep | th  |      |      | (    | Clear S | pans | in Fee | et   |      |      |      |      |
|-----|-----|------|------|------|---------|------|--------|------|------|------|------|------|
| *   | 4'  | 5'   | 6'   | 7'   | 8'      | 9'   | 10'    | 11'  | 12'  | 13'  | 14'  | 16'  |
| 4"  | 29  | (19) | (11) | (7)  | (5)     | (3)  | (1)    |      |      |      |      |      |
| 5"  | 48  | 29   | (19) | (13) | (9)     | (6)  | (3)    | (2)  | (1)  |      |      |      |
| 6"  | 70  | 43   | 29   | (20) | (14)    | (9)  | (6)    | (4)  | (2)  | (1)  |      |      |
| 7"  | 97  | 61   | 41   | 28   | (20)    | (14) | (10)   | (7)  | (5)  | (3)  | (1)  |      |
| 8"  | 128 | 80   | 55   | 38   | (27)    | (20) | (14)   | (10) | (8)  | (5)  | (3)  | (1)  |
| 10" | 202 | 129  | 88   | 63   | 42      | 34   | (25)   | (19) | (15) | (10) | (7)  | (3)  |
| 12" | 295 | 190  | 131  | 94   | 70      | 53   | 41     | (32) | (26) | (19) | (15) | (8)  |
| 14" | 402 | 259  | 179  | 129  | 97      | 74   | 57     | 45   | (36) | (27) | (22) | (13) |
| 16" | 527 | 342  | 237  | 173  | 129     | 99   | 77     | 61   | 49   | (38) | (31) | (19) |
| 18" | 679 | 434  | 303  | 220  | 166     | 128  | 100    | 80   | 65   | 52   | (42) | (28) |
| 20" | 831 | 540  | 376  | 275  | 208     | 160  | 126    | 101  | 93   | 66   | 54   | (36) |

See Note, Table I. Weight of lintel has been deducted.

TABLE III . . . GRANITE LINTELS

Safe Superimposed Loads for Each Inch in Thickness

| Dep | th  |     |      | C    | lear S   | pans i | n Fee | t    |      |      |      |      |
|-----|-----|-----|------|------|----------|--------|-------|------|------|------|------|------|
|     | 4'  | 5'  | 6'   | 7'   | 8'       | 9'     | 10'   | 11'  | 12'  | 13'  | 14'  | 16'  |
| 4"  | 33  | 20  | (13) | (8)  | (5)      | (3)    | (2)   | (1)  |      |      |      |      |
| 5"  | 53  | 33  | (22) | (15) | (10)     | (7)    | (4)   | (3)  | (1)  |      |      |      |
| 6"  | 76  | 48  | 32   | (21) | (15)     | (11)   | (7)   | (5)  | (3)  | (2)  |      |      |
| 7"  | 108 | 68  | 46   | 32   | (23)     | (17)   | (12)  | (9)  | (6)  | (4)  | (2)  |      |
| 8"  | 142 | 90  | 61   | 44   | (32)     | (23)   | (17)  | (13) | (9)  | (6)  | (4)  | (1)  |
| 9"  | 182 | 116 | 79   | 57   | 41       | (31)   | (23)  | (17) | (13) | (9)  | (7)  | (3)  |
| 10" | 225 | 144 | 99   | 71   | 53       | (39)   | (29)  | (22) | (17) | (13) | (11) | (5)  |
| 11" | 275 | 176 | 121  | 87   | 53<br>65 | 49     | (37)  | (29) | (23) | (17) | (13) | (7   |
| 12" | 330 | 213 | 147  | 107  | 80       | 61     | 47    | (37) | (30) | (23) | (18) | (11) |
| 14" | 450 | 291 | 202  | 147  | 110      | 84     | 65    | (52) | (42) | (33) | (26) | (16) |
| 16" | 589 | 382 | 266  | 194  | 146      | 112    | 87    | 70   | (57) | (45) | (36) | (24  |
| 20" | 927 | 603 | 420  | 308  | 234      | 181    | 142   | 115  | 95   | 76   | (53) | (43) |

NOTE: See Table 1. Weight of lintel has been deducted

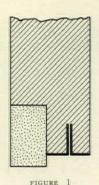


FIG. 1: Deflection of stone and lintel should be equal, but they should not be figured as working together

FIG. 2: Where facing is carried on steel, the stone should be jointed to allow for settlement and the steel designed for not more than three-quarters of its safe load. If not jointed, the stone may crack

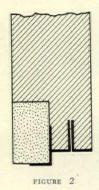


TABLE IV

Clear Spans of Stone Lintels Supporting Their Own Weight Only

| Depth | Limestone | Marble* | Granite |  |  |
|-------|-----------|---------|---------|--|--|
| 31/2" | 9'- 4"    | 11'- 6" | 12'- 1" |  |  |
| 4"    | 10'- 0"   | 12'- 4" | 13'- 0" |  |  |
| 6"    | 12'- 4"   | 15'- 0" | 15'-10" |  |  |
| 7"    | 13'- 4"   | 16'- 4" | 17'- 2" |  |  |
| 8"    | 14'- 2"   | 17'- 6" | 18'- 4" |  |  |
| 9"    | 15'- 0"   | 18'- 7" | 19'- 8" |  |  |
| 10"   | 16'- 0"   | 19'- 8" | 20'- 8" |  |  |
| 11"   | 16'-10"   | 20'- 7" | 21'- 9" |  |  |
| 12"   | 17'- 6"   | 21'- 6" | 22'- 8" |  |  |
| 14"   | 19- 0"    | 23'- 4" | 24'- 8" |  |  |
| 16"   | 20'- 4"   | 24'-10" | 26'- 0" |  |  |
| 18"   | 21'- 6"   | 26'- 6" | 28'- 0" |  |  |
| 20"   | 22' -8"   | 27'-10" | 29'- 6" |  |  |

\*White or gray Vermont marble or equal

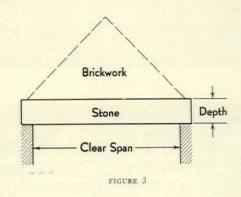


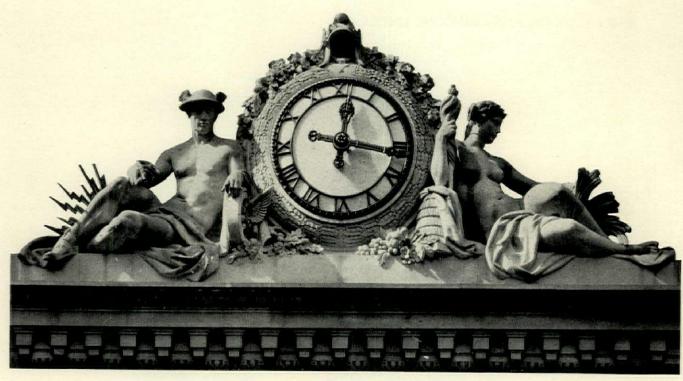
TABLE V

Minimum Depths of Lintels to Support a Triangular Load of Brickwork in Addition to Weight of Lintel

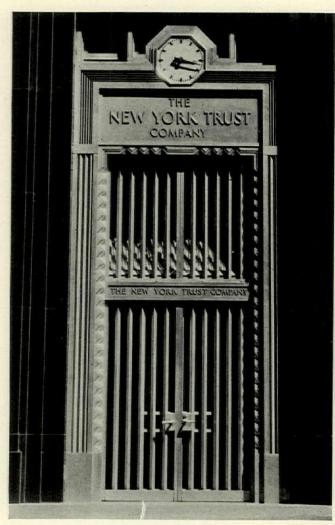
| Clear Spans | Limestone   | Marble* | Granite           |
|-------------|-------------|---------|-------------------|
| 4'-0"       | 31/2"       | 3"      | 23/4"             |
| 4'-6"       | 41/4"       | 31/2"   | 31/2"             |
| 5'-0"       | 41/4"<br>5" | 41/4"   | 4"                |
| 5'-6"       | 53/4"       | 43/4"   | 41/2"<br>5"<br>6" |
| 6'-0"       | 61/2"       | 51/2"   | 5"                |
| 6'-6"       | 71/2"       | 61/4"   | 6"                |
| 7'-0''      | 81/4"       | 63/4"   | 61/2"             |
| 7'-6"       | 91/4"       | 71/2"   | 7½"<br>8"         |
| 8'-0"       | 10"         | 81/4"   | 8"                |
| 8'-6"       | 11"         | 9"      | 81/2"             |
| 9'-0"       | 12"         | 93/4"   | 91/4"             |
| 10'-0"      | 14"         | 111/2"  | 11"               |
| 11'-0"      | 161/2"      | 131/4"  | 121/2"            |
| 12'-0"      | 181/2"      | 15"     | 141/2"            |

\*White or gray Vermont marble or equal Weight of brickwork assumed as 120 lbs. per cu. ft.

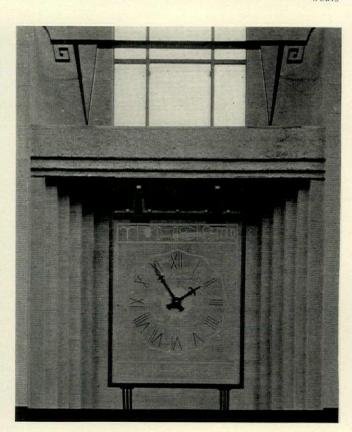
SAFE LOADS
FOR VARIOUS
KINDS OF
STONE LINTELS



WITETS



BROWNING



AT TOP—New York Central Building, New York. Warren and Wetmore, architects. . . . AT LEFT—22 East 49th Street Building, New York. Kenneth Franzheim, architect. . . . ABOVE—Royal Horticultural Hall, London. Easton and Robertson, architects

# Clocks As Part of the Design



WURTS



BROW.L.,



AT TOP—Former Herald Building, New York. The figures swung sledges to strike hours and quarter hours. Dial at right is wind indicator. McKim, Mead and White, architects

ABOVE—R. C. A. Building, New York. Cross and Cross, architects

AT LEFT—Mercantile Building, New York.
Ely Jacques Kahn, architect



# How to Make

BY ROGER ALLEN, A.I.A.

Associate Editor, Grand Rapids "Chronicle"

What is news to the newspapers? The right answer may mean page one for important building news—instead of the wastebasket. Mr. Allen tells what Committees on Public Information should know if their "news" is to deserve editorial consideration

HE Pathway to Page One is a one way street where the traffic congestion is terrible. When I temporarily abandoned the classic groves of architecture to devote myself to newspaper editing, it was immediately borne in upon me that a large portion of the adult population of this republic lives but to get something in the newspaper. And now that publicity for architects and for the profession at large is a live subject, with every chapter, state society and local architectural club boasting a Committee on Public Information charged with the duty of bombarding editors with news of moment to the profession, it might be a good idea to consider what an editor thinks about it.

Newspaper space is a valuable commodity. No editor worth his salt wastes a single column inch of it. The matter that goes into type must have certain definite merits or it finds a crowded grave in the wastebasket Papers are sold because they interest the reader. When they stop interesting a sufficient number of readers, someone loses his job. This is as true of architectural or construction news as of any other brand; it must have an interesting angle before it will be considered.

The straight news story about new construction encounters little trouble. A new building is news and is accorded whatever space it merits. If the architect of the structure will take the pains to write a concise description of the building, with the names of the owners (preferably with all the initials correct) and such other items as he believes the public would care to know, nine-ty-nine newspapers out of a hundred will accept it, make what changes they require, write a lead paragraph and head for it and print it. If the architect has put his own name in the story they will print that, too.

But between the news story and the promotional publicity, represented by the "Why You Need An Architect" type of material, there is a deep and yawning gulf. Most of the yawning is done by the blase editors who read the latter class of story. If amateur publicists who attempt to get stories of this class into print could realize the competition that they have in this field, it might serve to stimulate them to a little clearer thinking.

Into the editorial offices of every sizeable daily or weekly newspaper in the country pours an unceasing volume of deftly disguised propaganda on behalf of one or another branch of the construction industry and its allied material lines-full page mats bearing well written articles on building greenhouses, painting chinese screens, waterproofing a swimming pool, insulating attics, building brick walks, decorating dining rooms, and a thousand more subjects, all accompanied by illustrations that will reproduce well on news print paper. Millions of dollars annually are spent by the promotion departments of the large material associations on this type of publicity alone. No one paper uses all of it; perhaps not over ten per cent of it ever actually gets to the reader. But the items that do get to the reader are at least well written and carefully illustrated; they are not too obviously propaganda for any one material or method of construction, and they are on some subject that is of interest to a majority of the readers of a building page.

"Very few architects have any real comprehension of what other people like to read," said a managing editor to me. "Architecture has as many interesting phases as



# the Front Page

any profession—and more than most. There must be plenty of things about designing that the public would like to know; there must be any number of architects who have vivid and arresting personalities that have the color that makes news value. But very little of that gets into publicity releases. As a matter of fact the first thing to do with the average story sent in by an architect is to cut out the last paragraph and re-write it for a lead. For some reason, most people in your profession with something important to say think that it adds emphasis to leave it to the last part of the story, where as a matter of cold fact we know that unless you hit the reader with your message within the first ten lines you might as well sign off. Look at this story—."

HE story he showed to me was an account of the demolition of an old theatre building to make way for a new office building. The paper had already carried a story of the projected building with a cut of the exterior perspective. The demolition of the old building was now in progress and the architect, with a much better sense of news value than the average, had sent in a little story about the discovery that the piers of the original building had been supported on great slabs of river limestone. At the end of the story, tucked in apologetically, was an account of the visit of an elderly brick mason who informed the foreman of the job that he had worked on the building of the old theatre and that, in accordance with a custom common enough in the wicked 80's, the owner had hidden at the base of one cast iron column a quart bottle of Bourbon whiskey. Search failed to discover the treasure.

"You," said the managing editor accusingly, "are supposed to be funny. How would you head that story?"
"Old Crow Takes Wing After Fifty Years," I

murmured.

"You might make a newspaper man yet," admitted the managing editor grudgingly. "Mark that 24 point 2-col. and send it down." So with a re-written head the story, with the name of the architect, made Page One.

For an excellent idea of the proper type of personality story about individual architects, an item in AMERICAN ARCHITECT may be quoted. It recited the fact that Raymond Hood usually has to pay an extra cover charge in restaurants because he draws on the table cloth. He also was said to have incurred the wrath of his wife because when he took his little cousin for a walk they returned with designs for a building sketched all over the little girl's white dress. That kind of story "has everything."

It is painful, however, to reflect that architects cannot always be searching for buried whiskey, and even more painful to remember that they cannot always be sitting in restaurants drawing on the table cloth. The point of the two stories is that they have a universal appeal; everyone would like to find a bottle of 50-year old whiskey, either to have the wicked pleasure of drinking it or the virtuous pleasure of smashing it; everyone at some time or other has drawn pictures on a table cloth. They conform to the editor's trinity; somebody does something; somebody says something; somebody IS something.

But it will be correctly objected that a great deal of what the profession wishes to tell the public is not concerned with personalities. We may wish to point out the errors made by people who embark on a building operation without an architect. Perhaps we have a prepared article on this subject, carefully written by someone who knows how to put his thoughts into concise and appropriate language, and who, out of consideration for the editor who will read it, instructs his stenographer to leave a two or three inch space at the top to allow a head to be written in, and to double-space the whole manuscript to facilitate corrections. The article is sent to the paper, an editor reads it, says gloomily to himself, "No local angle," and throws it on the floor.

The answer to that, of course, is for us to supply the local angle. Instead of reading, (Continued on page 100)

# WHAT ARCHITECTS



NATIONAL BANK of Topeka, Kansas, just completed K. M. Vitzthum & Co., Inc., architects; Thomas W. Williamson & Co., associates

THE Detroit Building Congress has inaugurated a modernization campaign. As part of this campaign, a house is being remodeled in Grand Circus Park. A "market place" was established in the house and architects took turns to help answer questions.

Federal Aid for Low Cost Housing

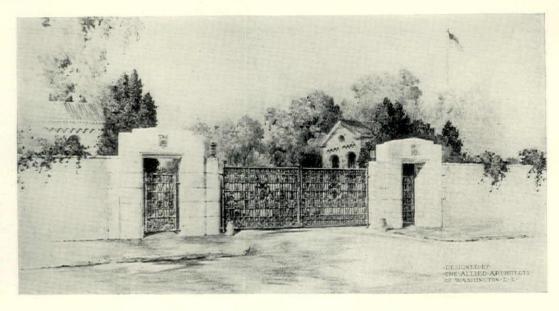
Detroit Has Modernizing Campaign

Wisconsin Architects Organize
State Association

WARDS for the most beautiful steel bridges erected last year have been announced by the American Institute of Steel Construction. They are the Bayonne Bridge between Bayonne, N. J., and Staten Island, N. Y., designed by O. H. Ammann, chief engineer for the Port Authority; the Waldo-Hancock suspension bridge at Bucksport, Me., designed by Robinson & Steinman, consulting engineers; and the West Stewartstown Bridge at West Stewartstown, N. H., designed by the New Hampshire State Highway Department.

THAT Federal aid to large-scale, low cost housing projects be safeguarded by administration through state housing boards, by establishment of minimum standards of construction, and by subordination of land costs to building costs, is urged in a communication sent to President Hoover, to the Reconstruction Finance Corporation and to members of the Senate and House of Representatives by Mrs. Joseph M. Proskauer, chairman of the Housing Section of the Welfare Council, which is composed of about 100 organizations concerned with proper housing for low and moderate income families.

RGANIZATION of the State Association of Wisconsin Architects has been completed. The association includes every registered architect in the state and is modeled on the "California plan." Leo Brielmaier is president.



MEMORIAL GATES, Class of 1907, Naval Academy, Annapolis, Md. Dedicated May 28. Designed by the Allied Architects of Washington, D. C.

# ARE TALKING ABOUT

California Post Office Criticized

Cleveland Makes Construction
Loans to Home Owners

Too Much Government Interference

LETTER relative to the Oakland Post Office, Oakland, Cal., was recently published in the Oakland Tribune and sent to American Architect by a subscriber. Incidentally, this post office was designed by the Office of the Supervising Architect of the Treasury. The letter reads: "The new post office is a piece of architectural cheese. Just what is expected of a government that still puts scrolly fences around the borders of its postage stamps, and similar scrolls on its currency notes along with a variety of unrelated lettering ranging through what Will Dwiggins likens to living skeletons and superadipose virgins.

"The plaster decoration is just pasted on to a twelfthcarbon copy of a Mediterranean villa, and the beauty of the aluminum mullions only emphasizes the pinchbackness of the whole. It differs only in degree from the gingerbread atrocities of the Hayes-Arthur period. Not a single sign of the fundamental principle that form follows function, and no color.—Jay Chipping."

ONSTRUCTION loans to home builders among its customers will be made by the Union Trust Co., Cleveland, Ohio. The reason for this decision is stated to be due to general improvement in credit conditions since the first of the year and the belief that the time is favorable for at least a moderate recovery in residential construction.



UAKER PHOTO SERVICE

RADIO BUILDING, Philadelphia, for WCAU. The completed tower will be 100 feet above the eight stories of the building. The frame will be composed of stainless steel and bronze with walls of a specially prepared glass. Main building of dark rose-colored brick and stainless steel. . . . Gabriel Roth, architect

TVE business half a chance and its leaders can, through cooperative efforts, restore a measurable prosperity in this country," recently declared Charles F. Abbott, executive director of the American Institute of Steel Construction. "Under present day conditions industry is unable to initiate practical plans to stabilize conditions. On the other hand, the government refuses to accept any responsibility to promote any plans that might offer relief to business in distress. One of these days the government (Continued on page 106)



SCULPTURED HEADS of the political and religious leaders of Great Britain form a feature of the renovation of the south transept window of Chichester Cathedral, England, built in the 14th century. They represent, reading from left to right, Rev. Bishop Southwell, the Very Rev. A. S. Duncan-Jones, King George V, Bishop Lewes and Dr. Bell

ACM

# An Idea That Helps One Architect to Get Business Now

Third of a Series of Prize Articles on "Getting Business in Hard Times"

BY A WEST COAST ARCHITECT

HE lawyer sees much of his legitimate business going to trust companies, realtors and abstract companies; the doctor is up against numerous "quacks" and "get-well-quick" schemes, to say nothing of the bottles upon the shelves of the corner drug store. There is an illegitimate competition which plagues the professional artist, the preacher and the engineer. The landscape architect suffers sorely from the activities of the nurseryman; the college professor points with disgust to the inadequacy of correspondence courses and the practice of the dentist is damaged by "painless" profiteers. In short, the problems of other professional men are similar to the problems that daily confront the architect. In slow times these problems are doubly irritating. This fact has undoubtedly helped to crystallize the attitude of our office towards the value of our own fellow professional men.

During the past two years we have completed commissions for a number of professional men and without exception we found that an appeal to their professionalism was a big factor in swinging them into the architect's point of view and ultimately gaining a commission for us. Like many other architectural firms, rather than to wait for our work to "walk" into the office without "selling" assistance we have been forced to go out after it. In thus soliciting work we have contacted storekeepers, teachers, warehousemen and physicians—and all of these have been our clients. Only those who were professional men appreciated the professional point of view of the architect and held an intelligent regard for proper procedure in practice. We think this is because they are versed in professional ethics, for their ethical codes are based upon common sense and closely follow, or parallel, the code of the architect. The alleged "golden rule" of the non-professional man may promote honesty and square dealing among his own kind, but to our sorrow we learned that he certainly lacks experience and understanding in solving a purely professional problem that comes to him.

When this fact dawned upon us we found immediate use for this idea and we have profited. It may have been simply a coincidence that the professional man assumed new importance, in our eyes, during the time of the so-called depression, or it may have been a case of "misery loves company," for all professions have been hard hit, but in any event I want to state that hereafter we will rely greatly upon professionalism.

I will briefly sketch two instances that influenced our decision in the matter. A lawyer was the only professional man upon a building committee which was being interviewed by—it seemed at the time—about thirty thousand other architectural firms! Some of these firms were engaging in a vicious price-cutting war, while others of us were standing by the recognized fee. This lawyer stood firm against arguments of his fellow committeemen that a fee-cutter should be awarded the work. I know now that his attitude was crystallized when I told him, "As a professional man you surely understood this type of competitor." By good luck our firm got the job. This put us in a position where we could find out all the facts and one big fact we learned was the force and value of that particular professional man's professional arguments.

A doctor for whom we had prepared sketches came into the office somewhat disturbed by the advice of well meaning friends who had told him to postpone building. They also had said that "they" could get another architect to do his work for a fee one third of ours. To this he said, "Their fee may be higher than the rest, but so are *mine*. I am going to stick to my own architects, for they stuck by me when I was not at all sure of building." Coming from a professional brother, such a statement warms the architect's heart.

E have also learned that fellow architects can be depended upon. Among architects, there is a generally accepted belief that their competitors are not overly gifted with ethical health. Though personally I have intuitively felt this viewpoint was wrong, the fact remains that from my earliest days in business, fellow architects dinned into my ears their convictions that Architect A and B and C were villains. Now, through circumstances, during the past few years, our firm has been more intimately connected with legitimate competitors than heretofore and in all cases we have found them to be ethical, straightforward and mindful of their responsibilities to the profession. You will certainly agree that it will tend to knit architects closer together when all are courteous and honest in their dealings with each other. It is but another phase of placing confidence in one's own professional contemporaries.

I want to urge all architects to make use of this idea of working with men trained for, and practicing in a profession, architects included. It will certainly pay us.



IN APRIL, L. A. Lamoreux tells how he gets clients to sign on the dotted line, doubles his commission, cuts building costs for clients, handles "chiselers," and gets the client honestly to state his financial limit

IN JUNE, E. B. Van Keuren tells how he signs up prospective clients before other architects even know these clients are thinking of building, how he gets their confidence, and how he operates profitably today

AND IN THIS ISSUE, a west coast architect tells how he meets cut-rate competition, how he gets professional men on his side, how he secures jobs without submitting sketches, and what he has found out about collecting fees

The fellow professional man is a splendid support and one of the best business friends of the architect.

I have learned that our office has, in the past, put altogether too much dependence upon the pulling power or the "sales" ability of the elaborate rendering. With our office force cut down, we have had to "bend over the board" ourselves. At first we attempted to keep up the standard of our renderings which had always been exceptionally well done-and done at considerable expense. But we were rusty; the sketches looked altogether too "sketchy" and rushing at the last did not give the fine results of the old school charette. Once they were too impossible to present and I went to a meeting without them. There I was forced to place reliance solely upon my speaking or personal sales ability, and this, together with freehand penciled thumbnails won the commission. A second job came along and ordinarily we would have made elaborate sketches, but my partner and I had our boards-and ourselves-covered with working drawings for the first commission. I again successfully resorted to verbiage and thumbnails. We then had a conference and the upshot was we resolved to stick to the personal sales talk and eliminate intricate presentation drawings.

In other words, by reason of slow times we were taught that a bad habit and a great overhead, for us, could be dispensed with entirely. And why not? No surgeon will give a free demonstration of a \$1,000 operation; no lawyer will submit a ten page legal docu-

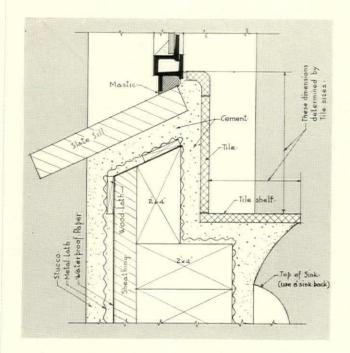
ment "on approval." We are definitely through with costly preliminary sketches and we will not, now or in the future, keep a high-priced renderer on our payroll.

Overhead, however, does not stop with the draftsmen's salaries; it is made up of a multitude of things and not the least of these is rent. We paid too much rent; we had over-expanded—so we moved into smaller quarters in a cheaper location. Incidentally the moving did wonders in cleaning out an accumulation of years. We now thoroughly understand the meaning of the old saw, "It's cheaper to move than to pay high rent," and the other, "Three removes are as good as a fire."

N 1928-29 our firm made several investments. As they were totally unrelated to either architecture or building I suppose we got our just dues when they all proved to be losing ventures. Hereafter *if* we ever do possess surplus money we will invest it in something we understand.

In past years we let small accounts drag along without systematic effort to collect them. One day we were simply amazed when we totaled up tag-end fees and small accounts to the sum of around \$11,000. "Things are brighter, right now, with all this money yet coming to us," we thought—so we tried to collect the \$50 balance, the \$200 sketch fee and the \$85 drafting charge. Did we get them? We did NOT. We will hereafter do a cash business, for we learned that the fee too long delayed in collection is a *lost* fee.

# .. Things You Didn't



### SHELF FOR KITCHEN WINDOW

By Arthur H. Gilkison, architect New Rochelle, New York

N houses designed with the kitchen located at the front of the house very often bottles, cans and kitchen whatnots are kept on the window stool over the sink in plain view of the street, which gives a service appearance to the front of the house. A window with a low sub-stool or shelf has proven successful in overcoming this.

| Jos No | SIZE  | OWNER       | TYPE BUILDING    | LOCATION      | DATE_   |
|--------|-------|-------------|------------------|---------------|---------|
| 32001  | 18×36 | Johnson Bto | Six apart. Bldg. | 1024 Main St. | Jan. 15 |
| 32002  |       |             |                  |               |         |
| 32003  |       |             |                  |               |         |
|        |       |             |                  |               |         |
|        |       |             |                  |               |         |

### WORKING DRAWINGS FILED BY SIZE

By Charles S. Archer, architect Chicago, Illinois

A SIMPLE and compact system of filing working drawings adds to the efficiency of a drafting room. Practically all jobs can be drawn on sheets: 18x24, 24x30, 30x36, 36x42, 18x30, 24x36, 30x42, 36x48, 18x36, 24x42, 30x48 or 18x42 in size.

Provide paper and tracing cloth in widths of 18", 24", 30" and 36" so that any size sheet can be cut to the exact size without waste of time or material by selecting the proper width.

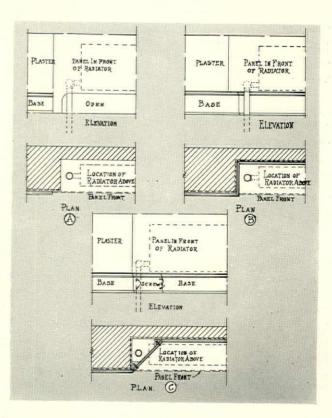
Since blue printing companies charge by the square foot, these standard dimensions eliminate odd fractions, keep down the blue print bill, and simplify checking of invoices.

The plan file may consist of five or six drawers, each 23/4" deep by, say, 56"x44", these being divided into spaces to correspond to the twelve standard sizes, the drawings being filed in numerical order, the last job being on top.

The top of the file should be of convenient height for spreading out the drawings for reference. A system of numbering and listing in the plan book may be adopted as follows:

By referring to the plan book, the number and size of any drawing is quickly determined and by opening the drawer at the proper size, the drawing is located immediately, clean and flat, ready for use.

Drawings removed from the file are left on top and replaced at end of day by the office boy or junior draftsman, who is held responsible for the condition of the file.

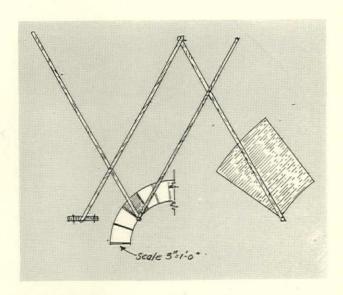


# CONCEALING HEATING PIPES AT RADIATOR

By J. R. Smith Lincoln, Nebraska

HEN concealed radiation is installed in the walls, it is usually placed as shown at either (A) or (B), which in either case leaves steam or water pipes at ends of radiators exposed in the recesses. This makes it difficult to clean around them. At (C) is shown a method of placing the base so the pipes are inclosed back of the base, which leaves a clear floor space under the radiator with no sharp or difficult angles to keep clean.

# Learn in School...



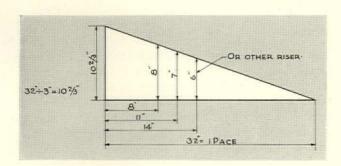
# FULL SIZING SCALE DRAWINGS

By R. P. Wallis Cleveland, Ohio

LULL sizing details from scale drawings is frequently complicated by physical difficulties. This is particularly true where long radii are involved.

The problem can be simplified by using a pantagraph set to the correct multiplying factor. For instance if the scale drawing is made 3" equals 1'-0", the multiplying factor is 4.

The accompanying illustration shows this method applied to the full sizing of a special brick for an arch.



# FORMULA FOR TREADS AND RISERS

By Morris M. Bruce, A. I. A. San Francisco, California

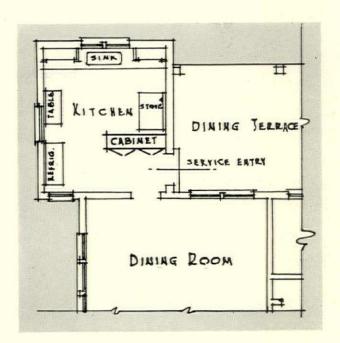
THE basis of the relation of treads and risers and the resulting formula, is the fact that it is harder to climb a hill or stair than to walk on the level. If it is, say, three times as hard to climb vertically a certain distance as it is to walk horizontally an equal distance, then for every change in horizontal distance traveled (width or tread), there should be a corresponding inverse change in the vertical travel (height of riser), equal to one-third the change in horizontal travel; in

other words the steeper the stair the smaller must be the sum of tread and riser. This formula results: three risers plus one tread equals 32".

Taking a few riser heights: 3"x5" equals 15" plus 17" equals 32"; 3x6 equals 18 plus 14 equals 32; 3x7 equals 21 plus 11 equals 32; 3x8 equals 24 plus 8 equals 32. No riser at all, tread equals 32" equals 1 pace; no tread at all, riser equals 10 2/3" or the spacing of rungs of a vertical ladder.

This formula provides different angles of grade for different purposes and different degrees of luxury and monumental effect without interpolating uncontrolled variables as in the rule quoted by Kidder, and gives a uniform degree of comfort in all combinations.

The accompanying graph enables one to read the proper width of tread to fit any riser. To use—lay off height of riser, determined by dividing the story height, and measured from inclined line vertically to base line, and the horizontal distance to the left hand end will be run of tread. The tread width here understood is the horizontal distance from riser to riser, the nosing to be additional. Being an empirical formula it is not necessary to carry it to the ultimate of no riser or no tread, but it seems to be good to the end.



# KITCHEN CABINET TO SERVE AS PANTRY

By J. Fred Buenz, architect San Antonio, Texas

OR the small house, a cabinet about seven feet high and long enough to be effective can be introduced into the kitchen to create the convenience of a pantry. At the same time, the cabinet shields the kitchen from view of those in the dining room without requiring additional space. The accompanying sketch shows the idea.

# · As It Looks

Wanted trated in the architectural magazines?" is a question not infrequently asked. For years many architects have been prone to consider that this type of professional recognition is difficult to attain or else awaited a special invitation to contribute. American Architect is particularly anxious to grant recognition to men of genuine talent. Let them send plans and photographs—even snapshots—of their work, and the editors will give to them as serious consideration as they would to more famous contemporaries. Merit and ideas—not names—are what American Architect is interested in.

Golf Prize
Worth While

A COMMISSION to design
a house to be constructed by
a development company was
the first prize awarded at the 1932 annual golf tournament of the Westchester County Society of Architects.
The prize was made available by the Orienta Properties,
Inc., Mamaroneck, N. Y., and won by Charles Dewey,
architect, of Pleasantville, N. Y. Four contestants who
tied for the low net score drew lots for the prize. It is
worth while today to be both a good golfer and a lucky
drawer when a house commission is to be awarded.

Carelessly
Used Words

N the platform of a London Railway station there is said to be a sign reading, "Passengers are advised to ascertain the destination of trains from this platform as they are liable to run both ways." Not so long ago a sign in the Architectural League of New York called attention to "an exhibition for the benefit of the Architects' Emergency Committee." The admission charged to view the exhibition was really for the benefit of unemployed draftsmen!

"Pa" Martin and ↑ORE than forty years ago -in 1888 to be exact-"Popsy" Laird Clarence A. Martin and Warren P. Laird graduated from the College of Architecture at Cornell University. Both entered the field of education-Martin returning to Cornell and Laird going to the University of Pennsylvania. Both started in "at the bottom" and both ran the gamut from Instructor to Dean of their respective schools. This year both retired after a long period of service in which they have pioneered in the development of architectural education in America. Their influence has been widespread and to these two men the architectural profession owes a debt for the zealous care with which they have maintained their schools abreast of a changing world. Graduates of both Universities who were fortunate enough to come under the sympathetic and understanding influence of "Pa" Martin and "Popsy" Laird will wish them many years of good health and contentment as a small measure of reward for the many years of hard work, the strength

of character and the spirit that enabled them to hold steadfastly to what they believed to be right. Pleasant memories of a job well done can never be taken from these two men no matter what else may happen.

Housing

ALK about producing complete houses in the same way that automobiles are produced generally misses one fact—that houses can not be considered as apart from the site upon which they are to be built. Mass production of housing is far more likely to be universally successful when a system of mass building is evolved in which the units are not only suitable to mass production but are also capable of adaptation to any size and design of house. Such a system would reduce costs to no inconsiderable extent and yet would in no way hamper free architectural expression.

Proof of Worth of Advertising

of Advertising

pay? A most interesting answer to this question is presented by Roy Dickenson in a recent issue of "Printers' Ink." Of the fourteen leading insurance companies, four have been consistent advertisers during the past ten years; the others have either advertised not at all or intermittently. The four consistent advertisers all showed net gains in 1931, the total gain of the four advertising companies being well over one hundred millions. The ten non-advertising companies showed a total loss in business of nearly twenty million dollars. It does pay to advertise.

Another
Racket
R

It is believed that this practice will lead to increased competition through architects inviting a much larger number of contractors to estimate the job than would be the case if no fee were required. The situation demands investigation. The practice must be stamped out if facts support the allegations.

Guild of Small

Home Design

Small Home Design has been organized by a group of architects in Chicago. Membership in the Guild is offered to practicing architects. Documents issued by the Guild for distribution to the public urge the employment of local architects for the design of small houses. The Guild has a library of plans of small houses that

# to the Editors · ·

are sold only to architects for a nominal sum. The architect in turn can sell the plans to home builders, make changes in the plans if necessary and supervise construction in return for a fee which he believes to be within the home builder's ability to pay. The idea is similar to one that has been frequently advocated as a solution of the Architects' Small House Service Bureau. One wonders whether or not architects generally will make use of plans prepared by others. The operation of the Guild will therefore be watched with unusual interest.

Does Russia
Work Fast?

Work Fast?

ECTOR O. HAMILTON,
prize winner in the recent
Palace of Soviets competition, needed a 60 in. x 42 in. drawing board while in
Russia. Late one night he explained what he wanted.
The next morning the drawing board was delivered,

having been made during the night. Maybe they have learned to do things fast in Russia!

Good Return in Housing

PLENTY of work for architects is to be found in the field of low cost housing in

the larger cities, according to Talbot Wegg, a Chicago architect who is organizing other architects to urge that government funds for unemployment relief be invested in low cost housing rather than in unnecessary and expensive post offices. There is much to be said in favor of Mr. Wegg's contention, for low cost housing can be made to serve as an admirable long term investment. He points to the Michigan Boulevard Apartments, a semi-philanthropic housing development built exclusively for negroes in Chicago. Despite the fact that the negro has suffered more than the white man during the current depression, this building paid its stockholders 51/4 per cent in 1931. Mr. Wegg states: "When the investor is made to realize that money put into housing pays a steady and non-fluctuating return even in times of severe depression, then will our slums be wiped out."

Air Conditioning Moving Fast

BUT a few years ago air conditioning was viewed as a practical aid or necessity in

practical aid or necessity in certain manufacturing fields. A little later it became an added attraction for theaters and was viewed by the public as something of a curiosity that contributed to comfort. Then air conditioning found its way into a few office buildings and people began to take the idea seriously and talk about what a fine thing it would be if installed in houses. This phase of air conditioning is fast being realized for already several manufacturers have developed equipment for this purpose. A railroad now advertises air conditioning of its trains. Ocean liners are air conditioned. The Union Electric Light & Power Company of St. Louis is carrying on a campaign for extending the use of air conditioning. The general application of this medium of comfort will be upon us almost before we realize it. Buildings without

it will soon be obsolete and this will have an important effect on the building industry.

It Pays to Cooperate HE owner of a large house went to a local millwork company and said that he wanted

to add an enclosed porch. The shop draftsman made a drawing and estimated the porch would cost twelve hundred dollars. It happened that the president of the millwork company knew the owner. When the matter came to his attention he decided to risk losing the order by advising the owner to go to the architect of the house. This the owner did and the mill furnished the material for a five thousand dollar addition. It paid the company to recommend an architect. The owner obtained a proper addition to his house. The architect probably profited, too.

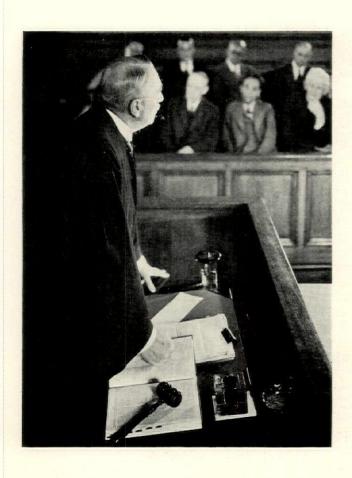
Displays for Exhibitions

PON request, from architects organizing modernization exhibitions, "Good

Housekeeping" will furnish without charge photographs or photostats, plans and data, which can be mounted for display, of altered and reconditioned houses published in that magazine. Much material on this subject has been and will be published in the future and, through this offer, is made available for exhibition display purposes for the asking. This material is especially valuable since it has been carefully selected on the basis of its interest to the public. Requests for this material should be made to Helen Koues, Director, Good Housekeeping Studio of Architecture and Furnishings, 57th Street at Eighth Avenue, New York City.

Valuable Advertising OO few building material manufacturers realize the importance of the right kind of

copy when advertising to architects-copy that is concise, informative, authoritative, and well worth filing for future reference. Heretofore no magazine has attempted to do much about it. AMERICAN ARCHITECT, having made an investigation on this subject among architects, has decided that something should be done about it. As a consequence, in this issue will be found an innovation in building product advertising. On page 75 is an article which presents the latest data on the various types of oil burners so that an architect may make the best selection for the particular purpose at hand. Immediately following this article are advertisements of a number of manufacturers of oil burning equipment. These advertisements have been especially prepared and edited. Every effort has been made to substitute facts for generalities, logic for high-sounding claims. It is felt that this section marks a distinct advance in architectural magazine publishing. Similar sections on other topics will be presented in future issues. Other manufacturers who wish to consult with AMERICAN ARCHITECT in order that their products may be advertised as architects would wish to have them advertised are invited to do so.



# Can Architect Collect When Bids Are Too High?

BY GEORGE F. KAISER, LL.B.

WHAT HE DID: An architect contracted to furnish sketches, working drawings, specifications and detailed drawings for the construction of a hotel building. The client stipulated that the building was not to cost more than \$340,000, explaining that this hotel could not be run profitably if its cost exceeded that and consequently if the cost could not be kept below \$340,000 the hotel would not be built. The architect prepared plans and specifications and delivered them to the client. After bids were received the client learned that the hotel as planned could not be erected for less than \$500,000 and accordingly abandoned the project. The architect, however, demanded payment for the services he had rendered and when the client refused to pay, brought suit.

WHY HE DID IT: The architect claimed his fee should be paid even if the client saw fit not to go ahead with the hotel, as an architect has no interest in the financial responsibility of his client.

WHY HE SHOULDN'T HAVE DONE IT: The architect was in error, as the court pointed out when the case was tried, and his claim for fees was disallowed when the client showed the architect had been told that the job would not proceed if the cost limit was exceeded. The court said, "Where an owner and an architect have agreed on a set figure made known to the architect, the owner will not be compelled to pay for an architect's services which he cannot avail himself of, particularly where the fault is purely and solely the architect's."

# WORK NOT FINISHED BY DATE AGREED

WHAT HE DID: It was specifically provided in a written contract that unless the architect should certify in writing to the contractor that additional time was to be allowed for completion, no such allowance should be made. Nevertheless the contractor, in presenting a claim for additional time because of a delay which he contended occurred through the fault of others, did not insist upon certification in writing by the architect of the allowance of extra time. As a result, when he demanded the balance of the contract price, the owner refused to pay. The contractor thereupon brought suit for the balance he claimed to be due to him under the contract.

WHY HE DID IT: As the architect, when the matter of the delay was taken up with him, had assured the contractor that he could have a reasonable additional time for completion, the contractor contended that he was entitled to the balance due him despite the delay.

WHY HE SHOULDN'T HAVE DONE IT: The court, however, disagreed with the contractor and instead of awarding him judgment for the amount demanded, allowed the owner for the per diem penalty for the delay, provided for in the contract, saying that under such a contract provision as the one sued under, an architect has no authority to verbally extend the time for the completion of the building as an architect can only extend such time for the completion in the manner provided for in the contract. A verbal extension is of no effect when the contract specifically provides that any extension of time given by the architect must be in writing.



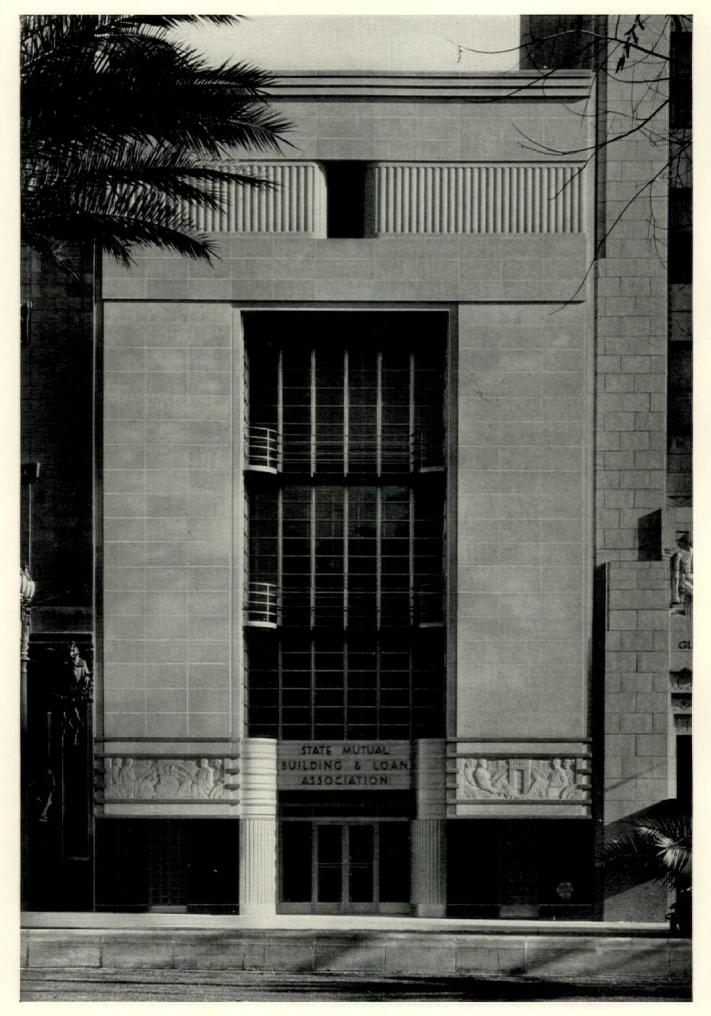
Preliminary study of State Mutual Building & Loan Association Building, Los Angeles, Cal.

Etching by Erle Webster

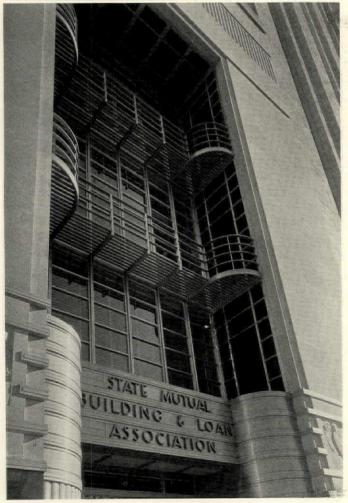
# PLATE SECTION

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# EXTERIOR MATERIALS

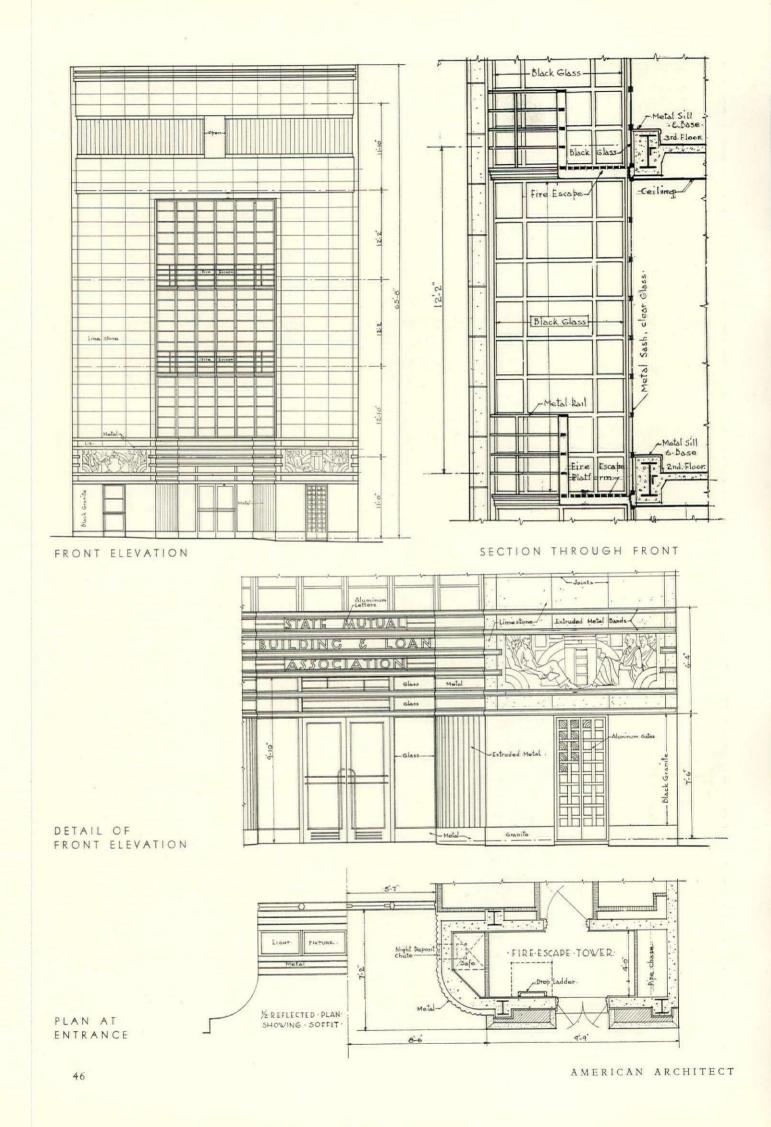
Base, polished black granite. Walls faced with buff Indiana limestone jointed to express its function as a veneer. Metal work, aluminum, satin finish; depressions of cast grilles and sides of letters, oxidized.

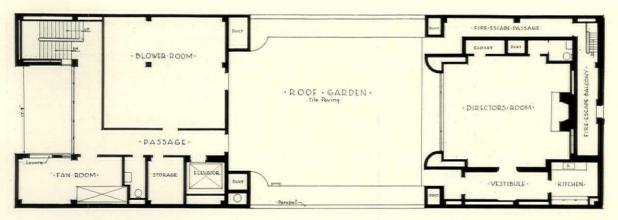
Sculptured panels carved in place by S. Cartaino Scarpitto, sculptor.

Fire escape was made part of the design by providing ornamental balconies communicating with a fire tower and stairway behind the masonry pylon on the right, exit being provided through a doorway at street level, which also serves as an employes' entrance.

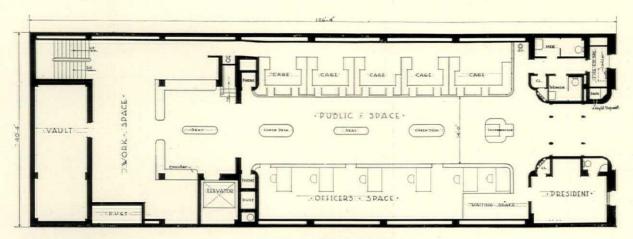
Windows are stock aluminum sash sections assembled to special detail so that horizontal meeting rails are no wider than ordinary muntins. Vertical mullions have steel stiffeners covered with extruded aluminum moldings which miter with the mullions covering the steel cantilevers supporting the balconies. Balcony floors of duralumin. Polished black glass in soffit and reveals of openings.

STATE MUTUAL BUILDING & LOAN ASSOCIATION BUILDING, LOS ANGELES, CALIFORNIA WILLIAM RICHARDS, ARCHITECT PHOTOGRAPHS BY MOTT STUDIOS

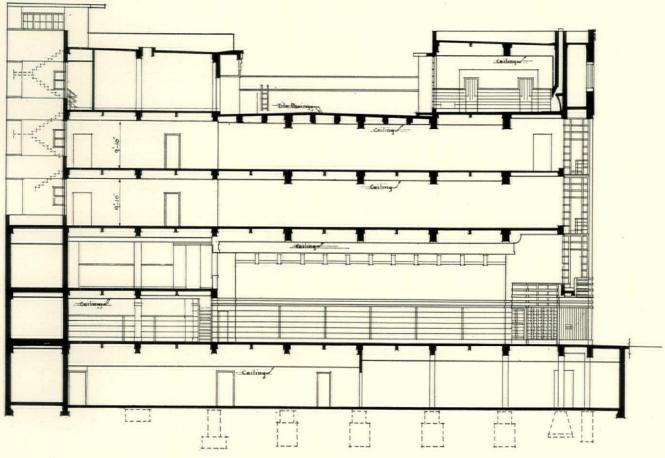




FOURTH FLOOR PLAN



FIRST FLOOR PLAN



LONGITUDINAL SECTION

STATE MUTUAL BUILDING & LOAN ASSOCIATION BUILDING, LOS ANGELES, CAL. WILLIAM RICHARDS, ARCHITECT

### BANKING ROOM

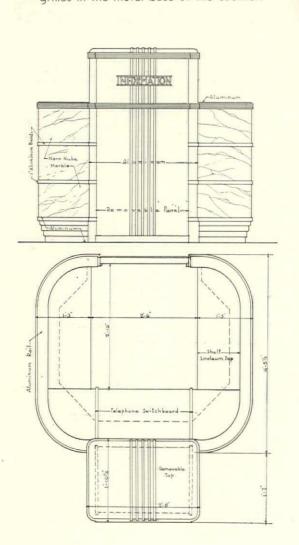
The aluminum of the exterior is carried through the entrance vestibule with concealed radiators in the circular motifs which form alcoves in the rooms at either side of the vestibule. The ceiling of the vestibule is glass; light is admitted to the adjoining rooms through the ceilings of the alcoves.

The telephone switchboard, covered by a removable aluminum housing, is incorporated in the information booth.

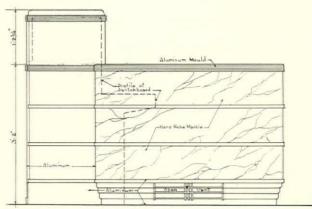
Wainscot, American black walnut veneer finished with clear lacquer; bands at cap, painted. Walls of acoustic plaster tinted beige. Fluted band at break in ceiling, acoustic plaster; molded members in the ceiling and wall frieze cast in hard plaster. Decoration painted in special water color to maintain acoustic qualities of the plaster.

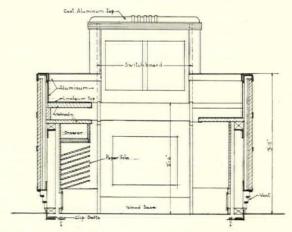
Floor, sheet rubber. Marble of counters and check desks, dark brown Nero Nube and light brown French Napoleon.

Conditioned air is supplied at the grilles in the frieze and exhaust is through the grilles in the metal base of the counter.



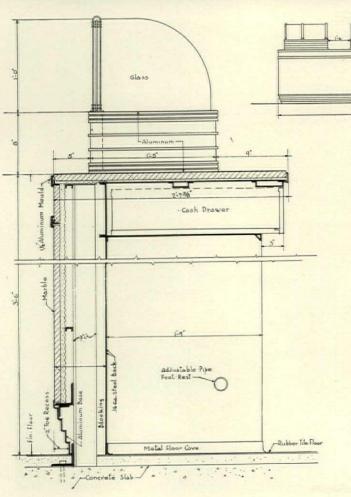






ELEVATIONS, PLAN AND SECTION OF INFORMATION BOOTH

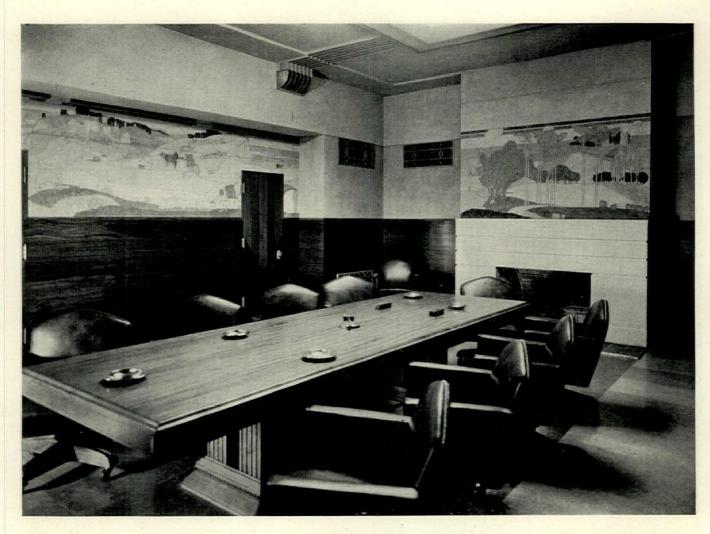




# BANKING ROOM AND DETAIL OF TELLERS' CAGES

STATE MUTUAL BUILDING & LOAN ASSOCIATION BUILDING, LOS ANGELES, CALIFORNIA

WILLIAM RICHARDS, ARCHITECT

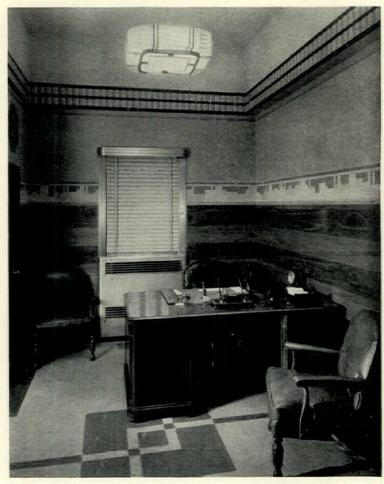


# DIRECTORS' ROOM

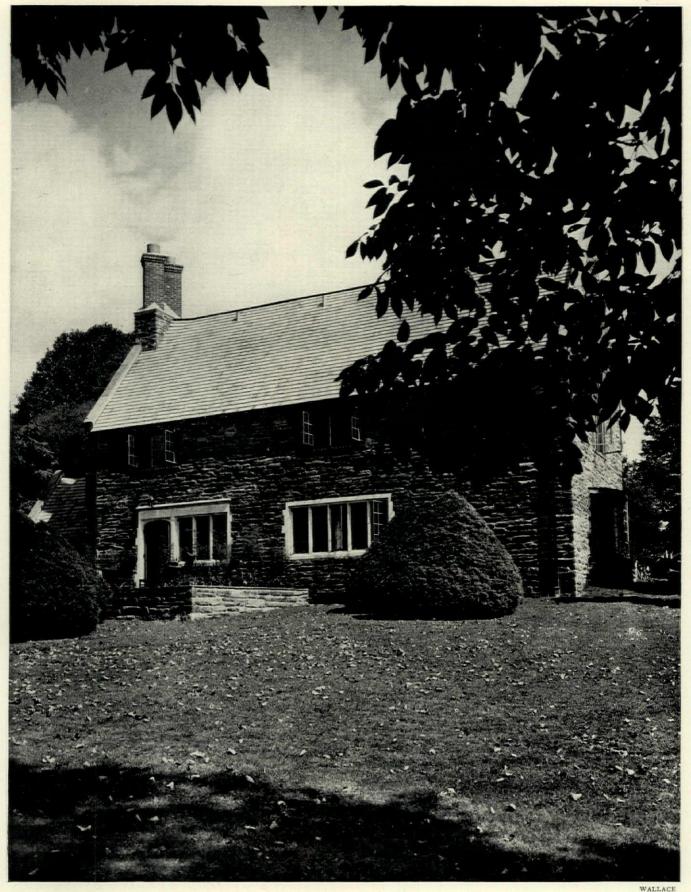
Wainscot, walnut. Walls and ceiling, acoustic plaster tinted beige and decorated by Millard Sheets with a special water color pigment which does not impair the sound absorptive qualities of the plaster. Fireplace, limestone with a quarry tile hearth. Floor, sheet rubber in browns and tans

# PRESIDENT'S OFFICE

Located on main floor. Wainscot, walnut veneer, the grain in the horizontal bands being alternately quarter sawn and slash grain. Walls and ceiling, acoustic plaster. Floor, rubber, brown and tan

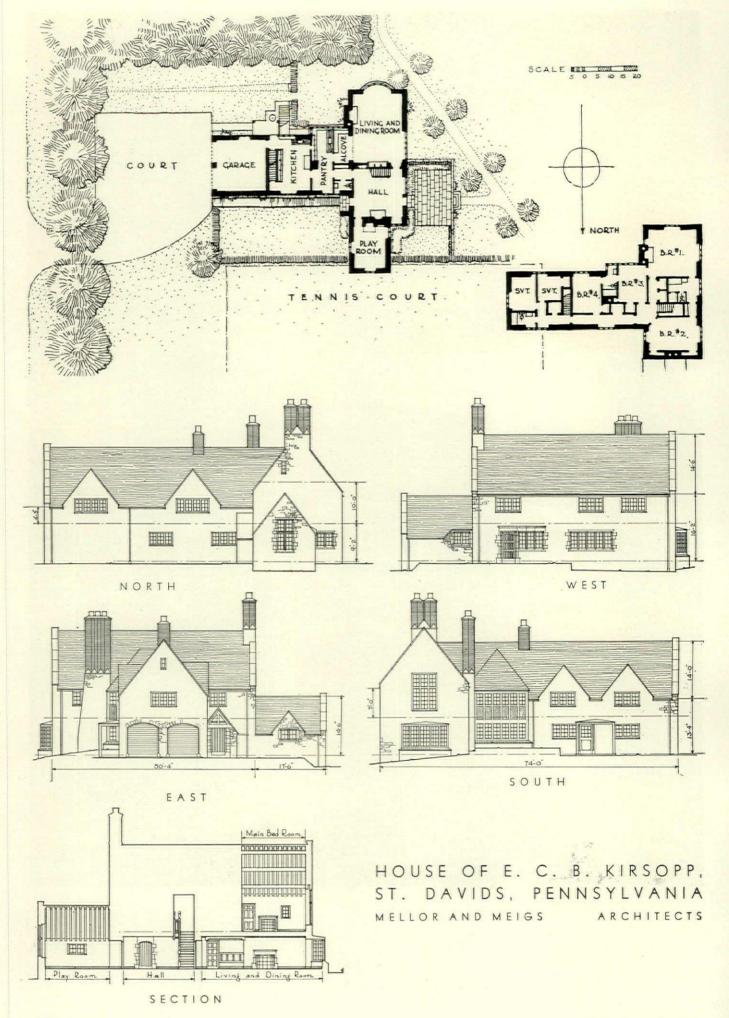


STATE BUILDING & LOAN ASSOCIATION BUILDING: WILLIAM RICHARDS, ARCHITECT

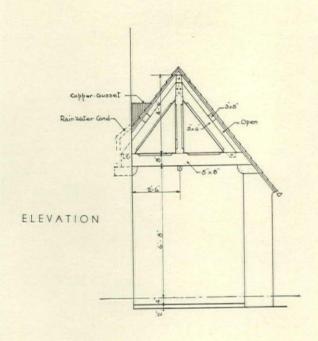


HOUSE OF E. C. B. KIRSOPP, ST. DAVIDS, PENNSYLVANIA

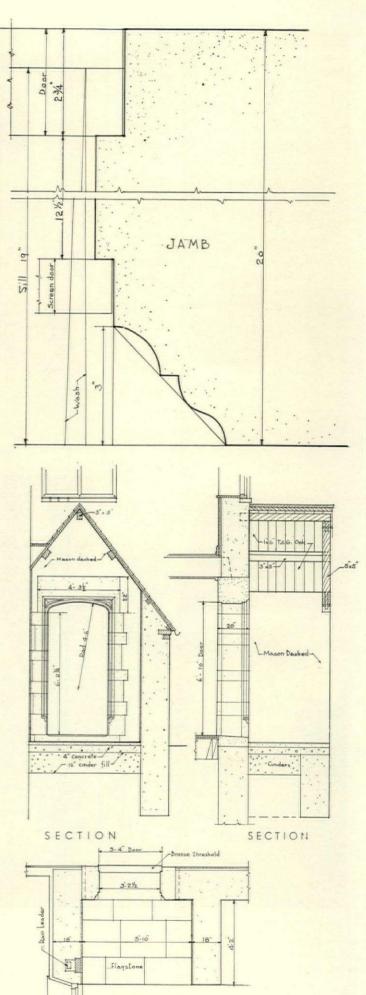
MELLOR AND MEIGS, ARCHITECTS







EXTERIOR MATERIALS: Walls, 18", local stone, pointed rough trowel cut finish, 2" furring, 1" blanket type insulation. Windows, limestone frames; oak bucks, natural oil finish. Cornice, brick corbelled with slate projection over upper member. Chimneys, bases of local stone, upper part of common hard red brick. Roof, red cedar shingles, 24" long, random widths, laid 51/2" to weather. Gable copings, 3" flagstones. Metal casements



PLAN

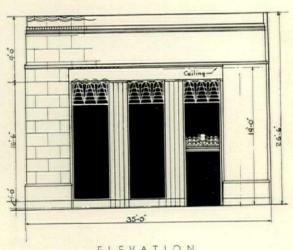


WALLACE

# HALL FIREPLACE

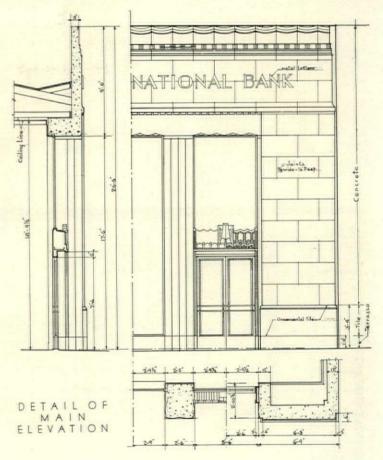
HOUSE OF E. C. B. KIRSOPP, ST. DAVIDS, PENNSYLVANIA, MELLOR AND MEIGS, ARCHITECTS AMERICAN ARCHITECT 54





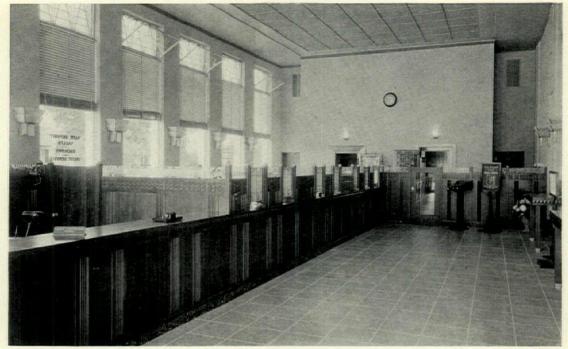
ELEVATION

Exterior materials: Sub-base, terrazzo; base, decorative tile; walls, concrete; roof construction, wood trusses, composition roof. Steel sash. Metal work, white metal. Cube, 80,500 cu. ft. Cost, 30 cents a cu. ft.

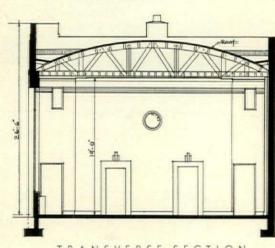


SECURITY FIRST NATIONAL BANK, SANTA MONICA, CALIFORNIA

MORGAN, WALLS & CLEMENTS, ARCHITECTS

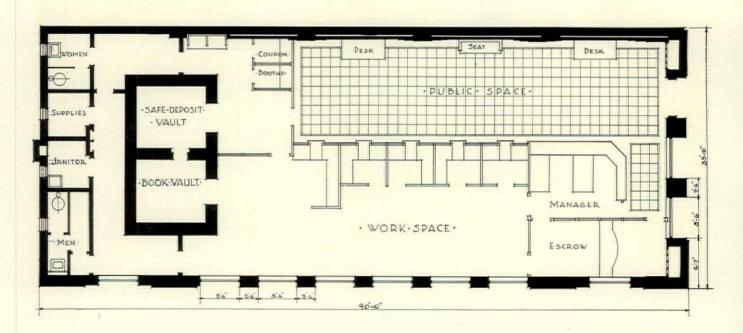


MOTT



TRANSVERSE SECTION

Floors: Banking room, cement marked into 16" squares; work space and book vault, linoleum; safe deposit lobby and vault, manager's office and escrow, rubber tile. Walls, plaster. Ceiling, pre-cast acoustical plaster, stippled paint finish. Fixtures, walnut

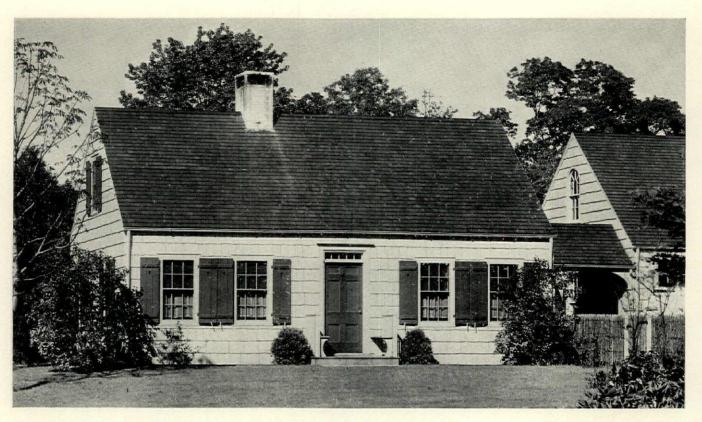


SECURITY FIRST NATIONAL BANK, SANTA MONICA, CALIFORNIA, MORGAN, WALLS & CLEMENTS, ARCHITECTS

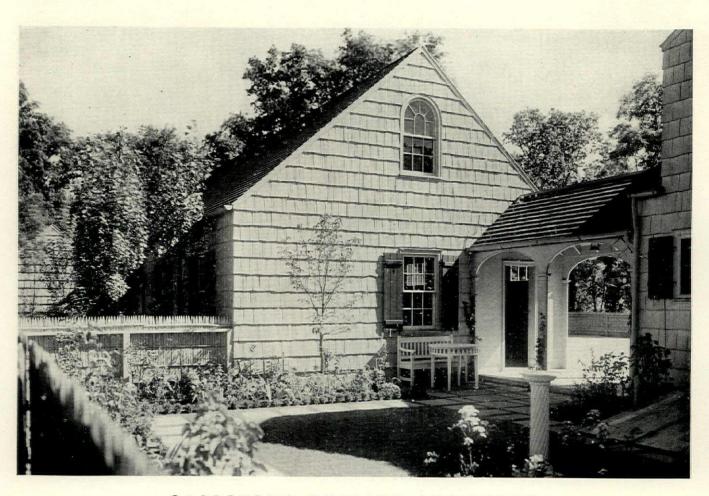


ENTRANCE TO GARDENER'S COTTAGE, ESTATE OF MRS. E. Y. BRENCHLEY, DARIEN, CONN.

CHARLES S. KEEFE, ARCHITECT PHOTOGRAPHS BY LOUIS H. DREYER



GARDENER'S COTTAGE CONNECTED WITH GARAGE AT RIGHT



GARDENER'S COTTAGE AND PORCH

SERVICE GROUP, ESTATE OF MRS. E. Y. BRENCHLEY; CHARLES S. KEEFE, ARCHITECT

58

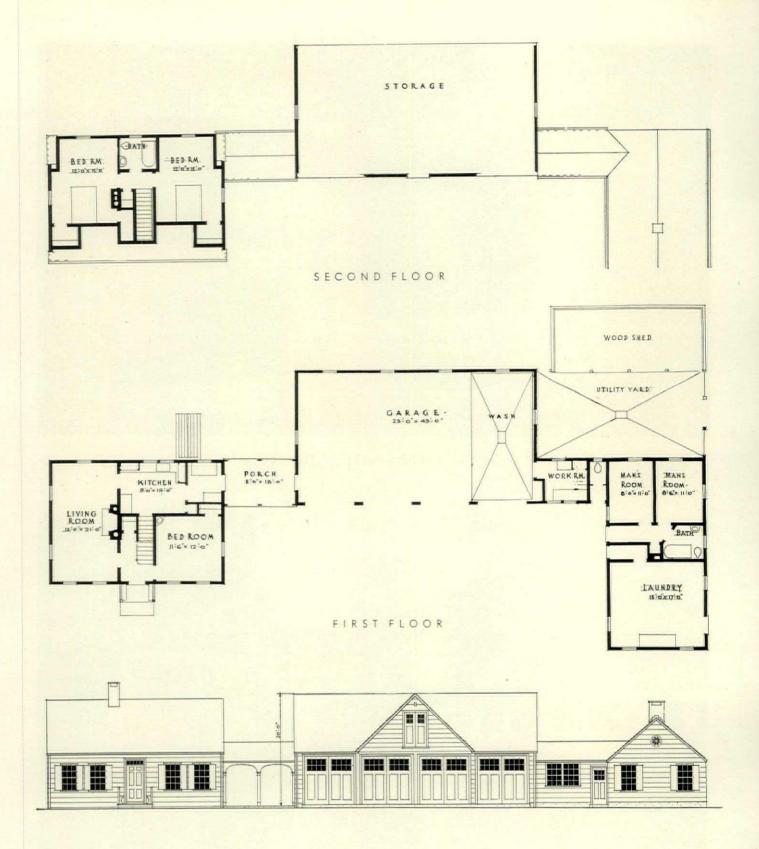


DRIVEWAY ENTRANCE AND LAUNDRY



GARAGE AND LAUNDRY

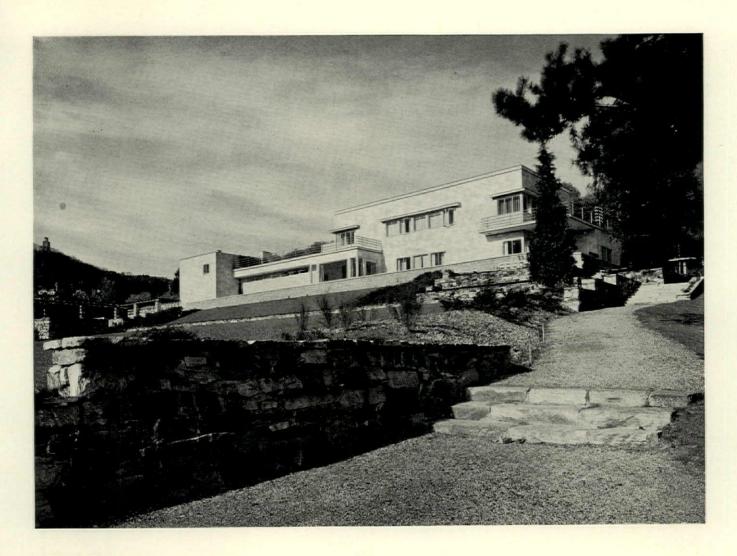
SERVICE GROUP, ESTATE OF MRS. E. Y. BRENCHLEY; CHARLES S. KEEFE, ARCHITECT FOR AUGUST 1932





Walls covered with rived cypress shingles exposed 10" to the weather and painted gray. Exterior woodwork, gray. Doors and shutters, bottle green. Roof shingles laid 51/2" to weather; stained green. Chimneys, whitewashed. Ceilings in first story, 7'6"; second story, 7'0". Walls, plaster on fibre board

SERVICE GROUP, ESTATE OF MRS. E. Y. BRENCHLEY, DARIEN, CONN.; CHARLES S. KEEFE, ARCHITECT





The house stands upon a clearing on a southerly slope. Its placement in the landscape is sensitive to the fitness of things. There is a wide sweep to the view and in the middle distance are wooded hills. Before the house are sweeping terraces with vine clad walls. The back of the house faces the entrance court across which one comes from the highway

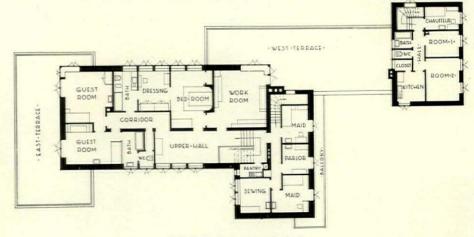
# A HOUSE IN THE TAUNUS NEAR FRANKFORT, GERMANY

PROFESSOR PETER BEHRENS, ARCHITECT PHOTOGRAPHS by M. GOLLNER



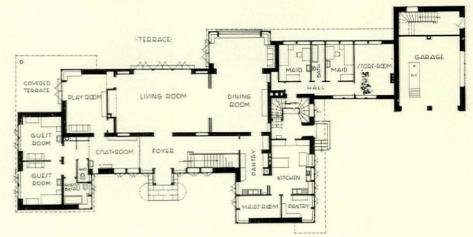
ENTRANCE GATES, A HOUSE IN THE TAUNUS

EXTERIOR walls are faced with limestone, a light yellow-gray streaked with pale violet. Glass of the windows is flush with the surface of the stone. There is no ornament, the exterior being an expression of lighting for the rooms within



SECOND FLOOR

TERRACE WALLS. From an old quarry near by came the irregular stones for the garden and terrace walls. Their color passes from soft lilac to darker violet, from yellow ochre to dark brown, from lime white to light blue. They are not garish. Their effect is that of natural walls. Camile Schneider was the landscape architect. Hundreds of plants and shrubs that thrive among rocks were introduced



FIRST FLOOR



THE LIVING ROOM Walls are covered with large sheets of champagne-colored natural mottled parchment. Near the top occurs a strong simple line of gold concealing the indirect lighting units, whose rays are reflected from the smooth white ceiling above. The fireplace is 9 ft. wide and 7 ft. 3 in. high, being faced with a green ceramic tile with a fine Chinese crackled surface. The triple window is 18 ft. 4 in. wide. The double flush entrance doors of macassa ebony form the only darker surface of the room and give the effect of a rich hanging. The furniture is deeply upholstered in white silk



THE DINING ROOM Walls and ceiling are of rosewood, natural finish; the only break in the smooth surfaces is the recessed buffet. Floor is of mahogany. A 10-ft.-long Breche Oriental marble topped table on a silver base is placed against wall



DINING ROOM SOLARIUM A solarium, one side of which is a wall of plate glass 13 ft. by 61/2 ft., adjoins the dining room and looks out upon receding terraces, middle distant hills, and high mountains in the distance. It provides a natural and logical transition from the house to the out-of-doors. Pressing a button causes the sheet of glass to sink out of sight beneath the window sill

A HOUSE IN THE TAUNUS
PROFESSOR PETER BEHRENS,
ARCHITECT

FOR AUGUST 1932



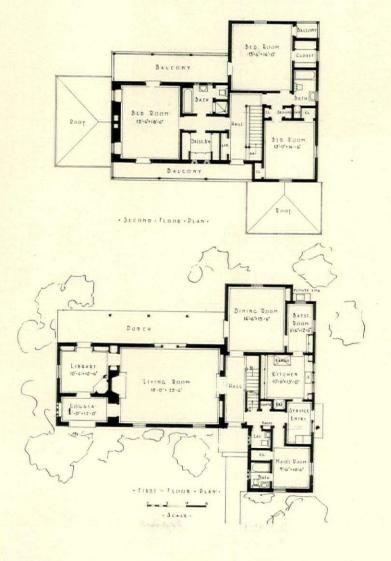
MAIN STAIRWAY. Treads and risers, cast marble. Handrail of ivory with rails of silver. Walls, sapphire blue, the color being an integral part of the fresh plaster and polished after setting. Window jambs, white marble



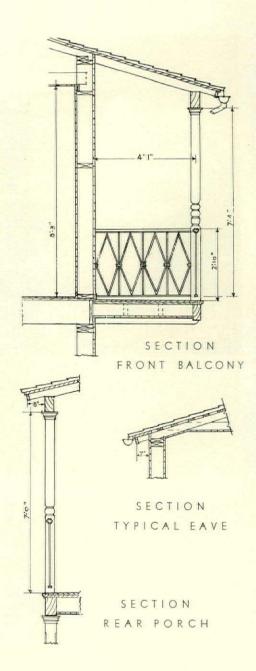
# HOUSE OF CLARENCE P. DAY, SAN MARINO, CALIFORNIA

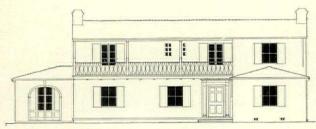
H. ROY KELLEY, ARCHITECT

Designed in the manner of the early houses of Monterey, a type developed by early settlers who came to California from New England







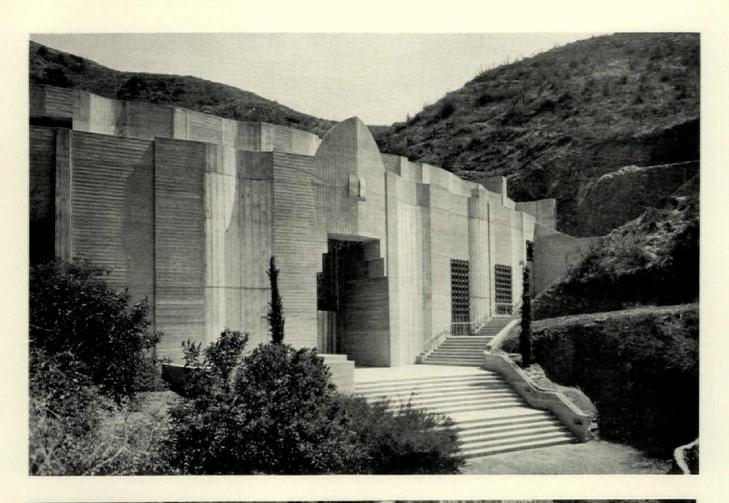


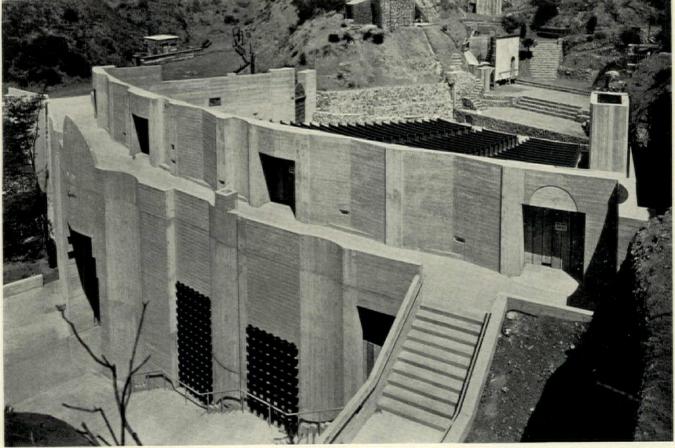


FRONT ELEVATION

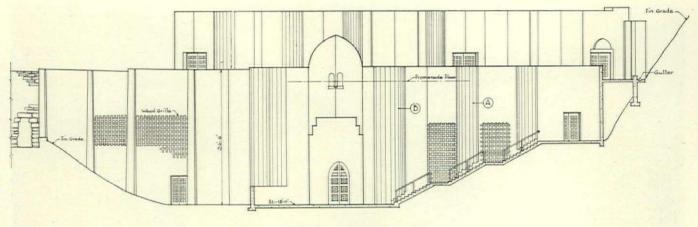
END ELEVATION

Exterior walls of whitewashed brick, wide clapboards and stucco, oyster-white color. Roof, hand-split red cedar shakes stained brown. Trim painted yellow-ivory; shutters, colonial green. Porches and garden walks, red brick. 32,987 cubic feet.

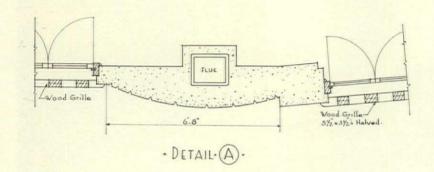


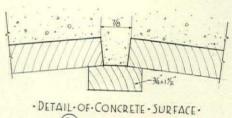


The stage is set up-hill, the background being the hinterland of crag and hillock, ravine and intertwining trail PILGRIMAGE PLAY THEATRE, HOLLYWOOD, CALIFORNIA WILLIAM LEE WOOLLETT, ARCHITECT



FRONT ELEVATION

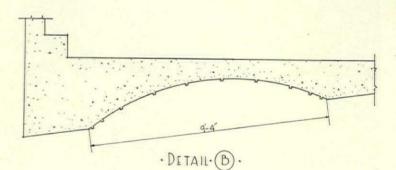


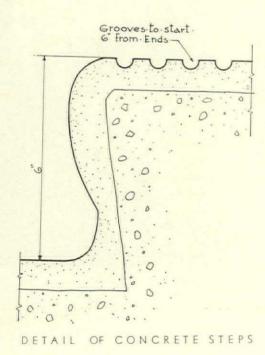


· AT. (B) · SHOWING · FORMING ·



· DETAIL- OF-CONCRETE - SURFACE · · AT. (A) · SHOWING · FORMING ·

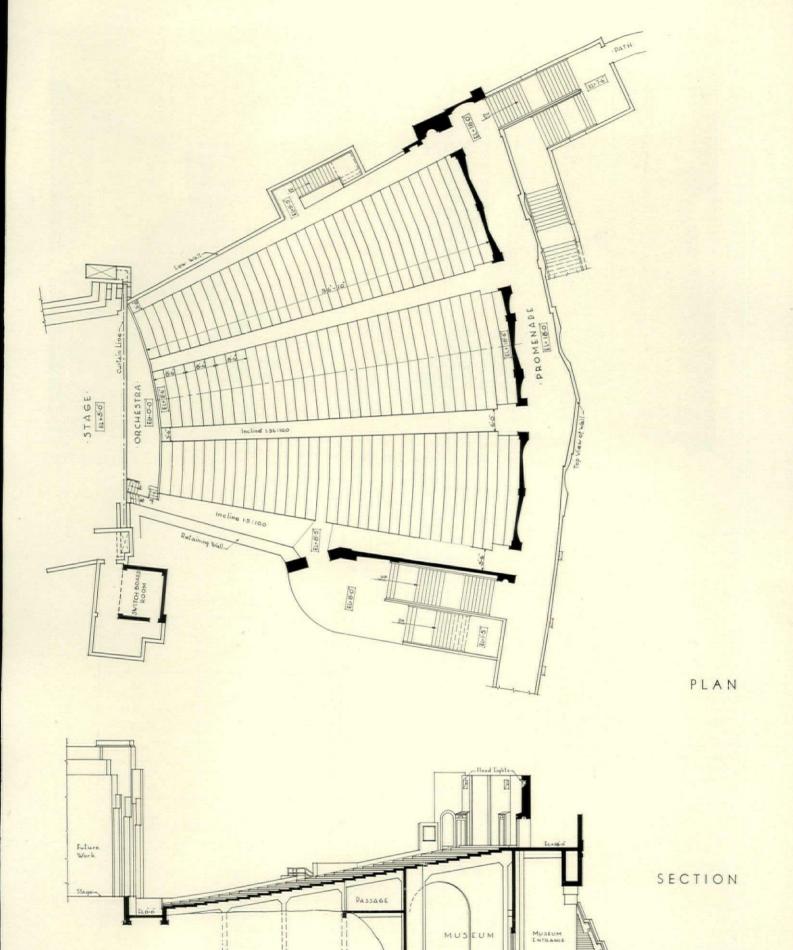


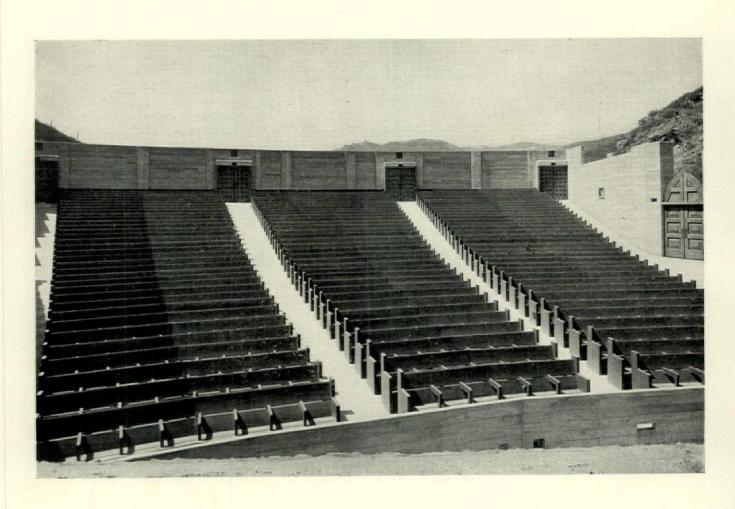


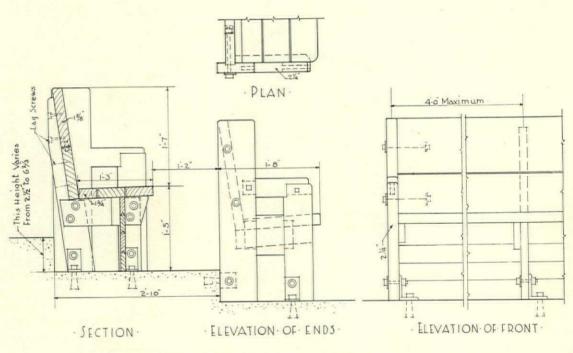
# DETAILS OF TREATMENT OF CONCRETE SURFACES

Large areas of the wood forms were covered with an acid preparation which crumbled the cement on the surface, thus exposing the aggregate and contrasting with the untreated surface. Portions of the concrete were decorated by ornament made by tacking thick paper silhouettes to the inside of the concrete forms. Many surfaces are to receive future elaborate decoration in coin gold and gold mosaic, and the columns are to be covered with a gold mosaic with fillets of fine brass. Panels between columns are to have bas-relief ornamental figures of the apostles and prophets

PILGRIMAGE PLAY THEATRE HOLLYWOOD, CALIFORNIA WILLIAM LEE WOOLLETT, ARCHITECT





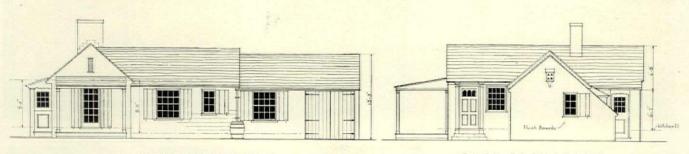


DETAILS OF SEATS

Amphitheatre: Floors, concrete. Doors, wood of builtup 4 x 4's mitred and locked over each other. Hinges and lighting fixtures, wrought iron. Museum under rear of amphitheatre to be treated in the style of an old Italian monastery with mosaic decorations

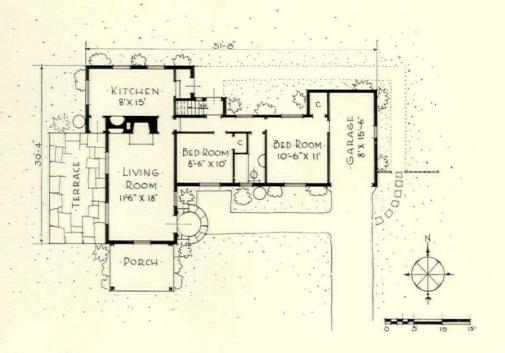


AN ANDA



SOUTH ELEVATION

EAST ELEVATION



HOUSE OF MRS. BERTHA COZZENS, KENT, CONNECTICUT

GEORGE H. VAN ANDA, DESIGNER



VAN ANDA

EXTERIOR: Frame construction. Roof shingles, deep gray and laid  $5\frac{1}{2}$ " to the weather. Side wall shingles, cerulean blue, laid 9" to the weather. Shutters, blue-green. Entrance door, painted gray-blue.

INTERIOR: Fireplace, brick with cement finish painted black. Living room walls, white pine panelling painted cream. Floors in living room, 12" and 14" white pine painted brown. 15,500 cu.ft.



HOUSE OF MRS. BERTHA COZZENS GEORGE H. VAN ANDA, DESIGNER



## T W O F I R E P L A C E S

BEAUX ARTS APARTMENTS

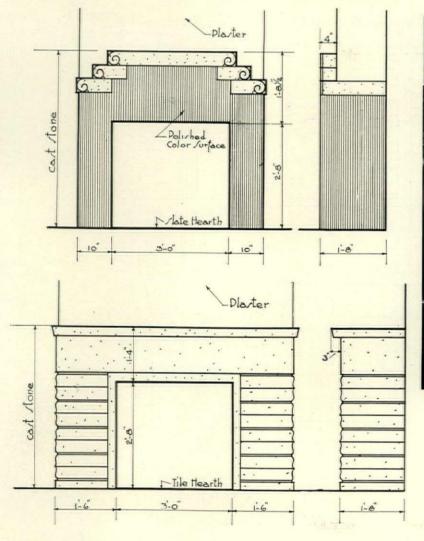
NEW YORK

KENNETH MURCHISON AND RAYMOND HOOD,

GODLEY AND FOUILHOUX,

ARCHITECTS







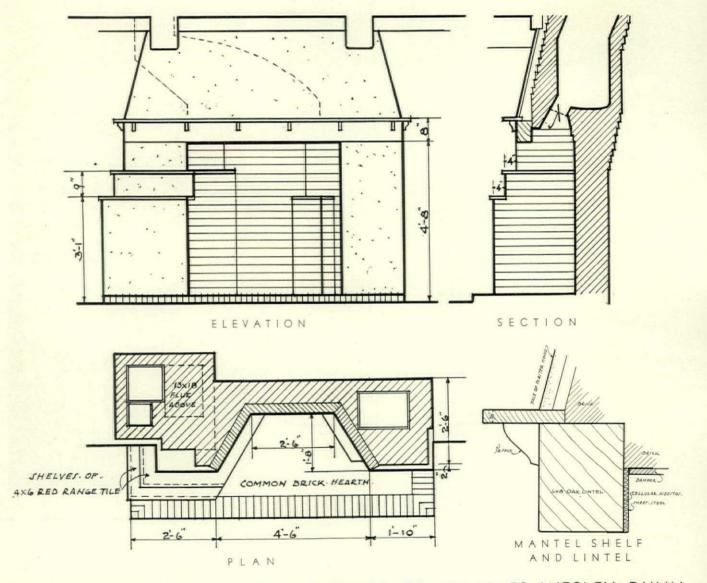
AT TOP: Imitation marble of the Sienna character. Horizontal decorative elements at top, stone finish, buff color

ABOVE: Imitation stone, buff color. Executed by Jacobson & Company from drawings by Raymond Hood, Godley and Fouilhoux

FOR AUGUST 1932



GLASGOV



DINING ROOM MANTEL \* RESIDENCE OF CHARLES WESLEY DUNN SOUTH NORWALK, CONNECTICUT — FRANK J. FORSTER, ARCHITECT

## American Architect Reference Data

NUMBER ONE—AUGUST, 1932

## OIL BURNING EQUIPMENT

TAYLOR, ROGERS & BLISS, INC., CONSULTANTS

# A Guide to the Selection and Use of Oil Burning and Accessory Equipment

The information contained herein has been prepared to assist architects in the selection of oil heating equipment for any building or project. The first four pages analyze oil heating devices to develop the points which architects should consider in making comparisons prior to selection. The remaining pages are devoted to the presentation of equipment offered by specific manufacturers. The factual data offered therein have been carefully related to this analysis.

HE oil burner industry has reached a point of stabilization and development of its equipment which enables architects to accept such equipment as of proven worth and of known performance characteristics. The industry has acquired a background of experience, testing and perfection of mechanical oil burners, burner-boiler and burner-furnace combinations, and automatic control and safety appliances which is more than adequate to prove the reliability of the devices now offered.

#### REQUIREMENTS FOR SATISFACTORY USE

ONSIDERING oil burners as independent units, not sold with a boiler or furnace for which they are especially designed, it is important to appreciate the fact that they represent but one element in a satisfactory heating system. The oil burner provides heat which the boiler or furnace must assimilate and make useful. It creates products of combustion which the chimney or flue must remove. The oil burner has no effect whatever upon the performance of radiators, pipe system, valves, ducts or other means whereby heat is distributed throughout the building.

For satisfactory operation, the entire heating system should be properly balanced. If any other element is inadequate for its purpose, the oil burner can not be held responsible.

Proper balance requires first that the burner be suited

to the boiler or furnace in which it is used. It also requires that the chimney provide adequate draft. It must also be appreciated that oil burners are mechanical devices and that, as such, they must have occasional attention to keep them in operating condition. They require periodic oiling and cleaning. Their elements are adjustable to meet varying conditions of service. If these adjustments are tampered with by incompetent persons, satisfactory operation may cease. These factors are not detrimental to oil burners; they merely recognize that conditions beyond the control of the manufacturer may affect oil burner performance.

It is unsound to look upon oil burners as cure-alls for defective heating plants, or as responsible for the performance of other elements in the heating system. It is important to appreciate that no matter how well-made the equipment may be, it must be correctly installed, intelligently used, and properly maintained. Much importance attaches to the responsibility of the dealer or local installation and service agency.

#### TYPE OF HEATING PLANT

S INCE oil burners merely supply the heat which the boiler or furnace must convert for useful purposes, it is essential that these two elements of the heating system be adapted to work satisfactorily together. An ideal condition exists where the oil burner is designed for a specific boiler or furnace, or vice versa. But it is not essential that boiler-burner combinations be purchased if care is exercised in selecting a type of burner adapted to the boiler or furnace in which it is to be used. It should be understood that the average domestic boiler or furnace can be fitted with any of the basic types of oil burners, with satisfactory operating results if the burner is of proper capacity. In boilers of unusual shape or size more careful selection of the burner is advisable. Factors to be considered are:

1. The size and shape of the combustion chamber in the boiler or furnace should be such as to provide adequate heat absorbing surfaces, realizing that burners provide maximum heat flow while in operation and no heat when shut off. Large heat absorption areas and long gas travel are now provided in modern boilers designed especially for oil fuel.

2. This requires that the oil burner be capable of producing a flame of such size and shape as to utilize fully the heat absorbing surfaces of the boiler or furnace.

3. The draft and capacity of the chimney must be adequate to remove products of combustion. The draft must also be uniform to maintain equable operating conditions at all times. This may be accomplished by installing an automatic draft regulator. Also, it is essential that the boiler or furnace room be equipped with intake vents of area equivalent to the area of the chimney to supply the required volume of air.

Heating efficiency is determined by the burner only to the point of securing complete combustion of the oil fuel with the minimum quantity of air. This can be checked by a flue gas analysis showing a CO<sub>2</sub> content of from 10 to 13 per cent. The boiler or furnace contributes to efficiency by its ability to absorb the heat produced. The overall efficiency thus depends more on the design of the boiler or furnace than upon the inherent characteristics of the oil burner.

#### MECHANICAL FEATURES

HEN comparing the relative merits of competing oil burners, the following points should be considered:

1. Quality of materials and construction. Evidenced by simplicity and sturdiness of design, precision manufacture of elements, type of bearings, assembly of units, character of finish, and type of materials employed in all essential operating parts.

2. Method of atomization. Before proper combustion can take place oil must be finely divided (atomized) or converted into vapor (gasified), and mixed with an adequate volume of air. When comparing units of different types the atomizing method employed should be considered in relation to the size and shape of the combustion chamber, draft conditions and load.

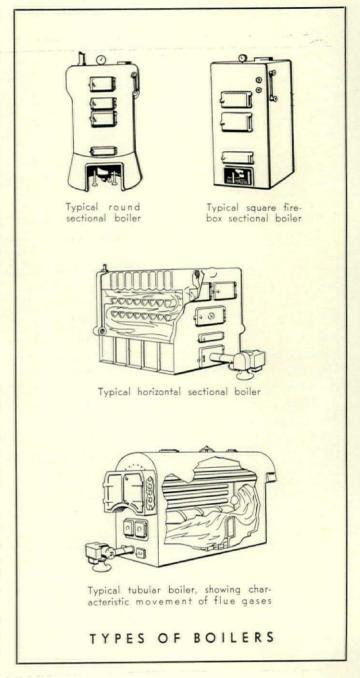
3. Adjustments. Necessary adjustments to secure proper balance of air and oil should be free of disturbance by the action of the mechanism, and so far as possible, protected against tampering by unskilled persons.

4. Ease of maintenance, cleaning, servicing. Parts requiring periodic cleaning should be easily removed or exposed, and easily returned to place without impairing proper adjustment. Preferably design should be such that only competent service men can clean, oil and readjust burner.

5. Ignition. Customary methods employ gas or electricity, or both. Simplicity and cost of installation and operation should be considered in making comparisons.

6. Protective devices. Protective and safety devices vary in nature with the character of the oil burning mechanism and boiler or furnace. Provision should be made to shut down operation when (a) oil does not ignite, (b) pressure or temperature of boiler or furnace becomes abnormal, or (c) when water level drops in steam boilers. If electric supply should fail, the mechanism should repeat its starting cycle automatically or should require manual resetting.

7. Quietness of operation. Involves mounting of

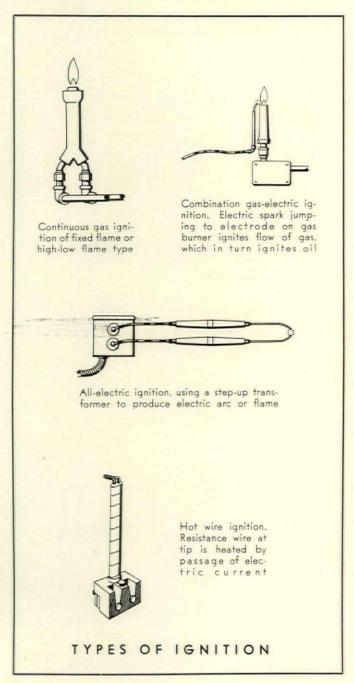


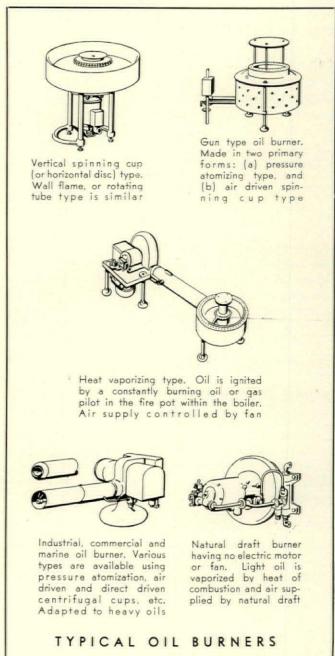
equipment, quietness of fan, motor, pump, belts, couplings and other moving parts. Sound produced by combustion varies according to type, capacity and setting, although under normal conditions this source is negligible. It should be noted that occasionally conditions are encountered where the acoustical properties of the boiler room or of the structure above magnify or aid in the transmission of sounds not audible in normal installations.

#### GRADE OF OIL

OMMERCIAL Standard, CS12-29, published by the United States Department of Commerce, Bureau of Standards, gives the recognized specification for six grades of fuel oil, ranging from No. 1, a volatile dis-

## AMERICAN ARCHITECT REFERENCE DATA ON OIL BURNING EQUIPMENT





tillate, to No. 6, which is a heavy viscous fuel requiring preheating for proper atomization. In general oils Nos. 1, 2, 3 and 4 are used for domestic burners, and oils Nos. 3, 4, 5 and 6 are used for commercial and industrial burners.

In some localities there is a price differential between the several grades and there is an apparent, though not significant, difference in the B. T. U. content between any two adjacent grades. The variation in both cost and B. T. U. content between the lightest grades and the heaviest grades is material, however, and should be taken into consideration for large commercial and industrial installations.

Under actual operating conditions there is little advantage between the various grades of oil which a given oil burner is designed to handle, for if the lighter oils,

Nos. 1 and 2, happen to be slightly more expensive, they usually burn more cleanly. The variations in performance and price tend to balance each other so closely that arguments in favor of one grade of oil over another are less significant than is commonly appreciated.

One important rule should be followed: Use the grade of oil for which the oil burner is listed by the Underwriters Laboratories, or a lighter grade. That is, if an oil burner is listed to burn No. 3 oil, use No. 3, 2 or 1.

When an oil burner will handle more than one grade of oil, a change in the supply from one grade to another usually requires resetting and readjustment. With certain types of oil burners, notably the rotating cup type, these adjustments merely involve a change in air or oil volume, while most pressure atomizing units require a substitution of a different size atomizing nozzle.

#### LOAD OR CAPACITY

RELIABLE formulae for determining required capacity for a given boiler or heating load will be found in the American Society of Heating & Ventilating Engineers Guide. Ratings offered by manufacturers should be checked against these formulae when making comparisons to be sure that ratings are all on equivalent bases.

In using these formulae keep in mind that domestic oil burners are designed for intermittent operation. Continuous operation should be required only during the heating season when the entire plant must be working at full capacity, unless the burner is designed for a continuous load over reasonably long periods. Nevertheless, it is better for the boiler or furnace to be oversize in relation to the burner than vice versa.

As between small domestic installations and larger commercial and industrial installations consuming many thousands of gallons of oil a year, the variations in B. T. U. content and cost of the heavier fuel oils make the quantity of oil burned an important factor in the selection of the type of burner to be used. In large installations preheating equipment and the use of oil grades Nos. 5 and 6 develop important economies.

#### ACCESSORY EQUIPMENT

EXCEPT for the storage tank, it has become customary for oil burner manufacturers to supply the necessary automatic controls and safety devices as part of the burner equipment; hence in making selections the relative quality and character of these accessories should be studied.

#### OIL STORAGE TANKS

(Underwriters label tanks with approximate dimensions and weights)

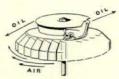
| Capacity   | Diameter | Ler | ngth | Weight |
|------------|----------|-----|------|--------|
| Gal.       | In.      | Ft. | In.  | Lbs.   |
| 275 (oval) | 28x42    | 5   | 6    | 400    |
| 275        | 35       | 5   | 6    | 500    |
| 550        | 48       | 6   | 0    | 800    |
| 1000       | 48       | 10  | 10   | 1250   |
| 1500       | 48       | 15  | 10   | 1900   |
| 2000       | 65       | 11  | 10   | 2000   |
| 2500       | 65       | 14  | 10   | 2380   |
| 3000       | 65       | 17  | 8    | 2800   |
| 4000       | 72       | 18  | 8    | 4775   |
| 5000       | 72       | 23  | 8    | 6000   |

Storage Tank

Local regulations usually govern placing of storage tanks, whether within the building or buried outside and whether elevated to permit gravity feed or buried to prevent gravity flow. Size of tank should be governed largely by quantity of oil consumed in relation to frequency of filling service and difference in oil cost due to small or large purchases.

Tank Gauge

A desirable but not essential accessory is a tank gauge which will accurately register within the building the vol-



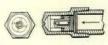
Vertical spinning cup or disc. Oil flows into a cup revolving at high speed, from which it is thrown centrifugally in a horizontal direction



Rotating tube. Streams of oil from rotating tubes are atomized by impact and heat at perimeter of specially designed hearth

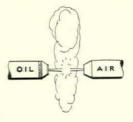


Horizontal spinning cup. Oil drops onto the interior of a conical shaped centrifugal cup which may be air-driven by vanes or direct-driven by motor. Oil tends to fly off rim of cup in vertical plane, but air projects flame horizontally

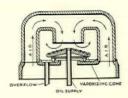




Pressure atomization method. Oil is forced under relatively high pressure (from 30 to 100 lbs. or more) through an atomizing nozzle, where usually slots or riflings produce a rotating movement



Impact atomization. Stream of oil and stream of air of approximately equal pressure are brought into opposition. Air used for atomization is augmented by a secondary supply



Heat vaporizing method. Employing a vaporization chamber in which air passes over surface of oil

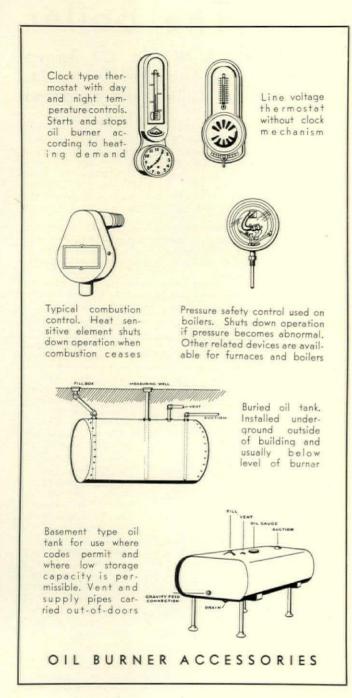
#### TYPICAL METHODS OF ATOMIZING OR VAPORIZING OIL

ume of fuel oil in the storage reservoir. The other method of measuring depth of oil through the test well tends to admit foreign matter and, if neglected, may result in shortage of oil.

#### Automatic Controls

Except in the larger industrial applications, oil burner systems function far more satisfactorily if fully automatic in operation. For all domestic and most building installations an accurate thermostat is a prerequisite. On hot water systems a hydrostat should be installed to maintain water temperature above a desirable minimum and below boiling point.

On all steam boilers it is highly desirable to install an automatic water level valve, or low water cutoff or both for maximum safety, because the infrequent attention required by oil burners may cause the owner to



neglect to maintain the required water level.

In warm air furnaces a maximum temperature control or airstat should be installed over the dome of the combustion chamber in the warm air passage to stop burner operation if excessive heat develops due to insufficient circulation of air through ducts. This will prevent burning out the furnace.

An important recent development is the low limit control which serves to correct a condition known as "Cold 70° F." The control supplies heat intermittently to keep radiators warm even when the thermostat does not call for heat in volume, thus maintaining gravity circulation of air in a room and preventing its stratification.

Other devices classified as safety controls or used to establish the operating cycle of the burner mechanism are ordinarily parts of the burner installation.

#### **ECONOMIC FACTORS**

HERE the purchase of oil heating equipment is governed by economic considerations a comparative study of cost should embrace the following points:

- 1. Cost of fuel. Based on grade purchased, delivery charges and quantity purchased on each order. Also governed by quantity of fuel required per heating season, which is affected by the B. T. U. content of the fuel and the operating efficiency of the heating plant.
- 2. Secondary fuel costs. With gas burners, oil burners and automatic stokers add cost of gas or electric pilot, electricity consumed by motor and controls.
- 3. Initial cost of installation. Embracing cost of storage space, burner or stoker mechanism and controls, and installation. If special boiler is employed, cost of this boiler above minimum unit should be considered part of investment.
- 4. Service, depreciation, etc., including interest on investment above minimum installation, annual depreciation charges (investment divided by years of useful life), service charges and periodic inspection, maintenance and cleaning of burner, stoker, storage tanks, etc.
- 5. Labor and space saved. In comparing oil or gas fuels against coal or coke deduct value of fuel storage space within building, cost or value of labor involved in manual firing and ash removal. In new buildings credit oil or gas burners with savings in excavation and basement construction required for fuel storage space.

Where all factors affecting initial and operating costs are thus considered, a fair comparison can be developed. Additional factors not purely economic in nature are uniformity of heating, cleanliness, freedom from constant supervision and attention.

#### PERFORMANCE AND ACCEPTANCE

Underwriters Laboratories

T is essential that all apparatus should bear the label of or be listed by the Underwriters Laboratories, but it should be remembered that Underwriters Laboratories' listing only covers fire safety and does not reflect relative quality or performance above a required minimum of safety.

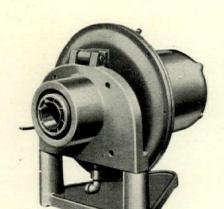
#### Method of Verifying Selection

In addition to the comparative study of oil burning equipment above outlined, the architect should be governed by the three following factors:

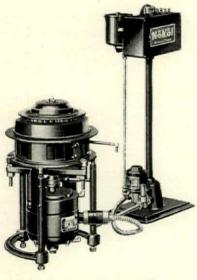
- 1. The reputation and standing of the manufacturer and the performance history behind its product.
- 2. The stability, financial responsibility and service record of the local service agency installing and maintaining the oil heating equipment under consideration.
- 3. The experience of local users, including not only the performance of the oil burning equipment but also the service rendered by the local agency.

The foregoing analysis was prepared in consultation with the Oil Heating Institute.

## OIL BURNERS that Fit The Boiler



Model "W-I" and "W-I1/2": Horizontal, direct motor driven rotary cup type burner for small round or square boilers. ignition.



Model "R": Wall-wiping flame rotary burner for round or square boilers and warm air furnaces.

Gas or electric ignition.



Model "P": Pressure atomizing burner for rectangular firebox, sectional or tubular boilers or furnaces. Continuous electric ignition.

A Complete Line of PETRO & NOKOL Oil Burners

Each Designed for Specific Types of Domestic, Commercial, and Industrial Boilers and Furnaces

## The Result of a Quarter Century of Experience

THE Petroleum Heat and Power Company recognized early in its 29 years of experience that no one type of burner meets every oil heating requirement in an equally satisfactory way, or solves every oil burner problem.

an equally satisfactory way, or solves every oil burner problem. For boilers and furnaces vary widely. Some are round, some square, some long, some short. Some have long gas travel, some short travel. There are different types of boilers designed for different fuels. Chimney and draft conditions vary too. All these factors have a bearing upon the type of oil burner equipment required for completely satisfactory operation.

To meet these conditions, over which the oil burner manufacturer has no control, the Petroleum Heat and Power Company has produced a complete line of oil burning equipment, embracing every type of burner experience has proven is needed to obtain reliable operation and high operating efficiency, in every type of domestic, commercial and industrial boiler or furnace.

The recommendation of a Petro & Nokol representative hence can obviously be relied upon as an impartial, unbiased analysis of the specific requirements of each heating system and operating condition which should govern the selection of equipment.

#### TYPES AND RECOMMENDED APPLICATIONS

| Model<br>No.                           | Туре   | Listed for<br>Oil No.  | Gals. Oil<br>per Hr.  | Ignition                 | Price Range and<br>Applications  |
|--|--|--|---|--------------------------|--|
| W-1<br>W-1½                            | Horizontal Direct<br>Motor Driven<br>Rotary Cup Type<br>Burner | 3  | .5 to 1.5<br>1.0 to 3.0   | Gas<br>Gas               | New, low cost, rotary cup type burner for very small round or square boilers. Also for process steam and hot water service.  |
| R                                      | Wall-wiping<br>Flame Rotary<br>Type Burner                     | 2  | 1.0 to 3.7  | Gas<br>or<br>Elec.       | Minimum cost,<br>fully automatic<br>burner for small<br>round or square<br>boilers and warm<br>air furnaces.   |
| P-1<br>P-1½<br>P-2                     | Pressure<br>Atomizing Gun<br>Type Burner                       | 3  | 1.3 to 3.0<br>2.0 to 5.0<br>3.0 to 7.5  | Continu-<br>ous Elec.    | Low cost, quality<br>built burner for<br>rectangular fire-<br>box, sectional or<br>tubular, boilers or<br>furnaces.  |
| W-2<br>W-3<br>W-4<br>W-5<br>W-6<br>W-7 | Horizontal<br>Direct Motor<br>Driven Rotary<br>Cup Type Burner | No. 5 Oil<br>without<br>preheating<br>No. 6 Oil<br>preheated | 1.5 to 6.0<br>5.0 to 20.0<br>15.0 to 25.0<br>20.0 to 30.0<br>25.0 to 45.0<br>25.0 to 60.0 | Gas<br>or<br>Elec.       | Manual, semi-<br>automatic, or full<br>automatic heavy<br>duty burner for<br>large Industrial<br>and Commercial<br>installations where<br>heavy oil is avail-<br>able. |
| Н                                      | Air Turbine<br>Driven Rotary<br>Cup Type Burner                | No. 5 Oil<br>without<br>preheating<br>No. 6 Oil<br>preheated | 15.0 to 75.0  | Manual<br>or<br>Elec-Gas | Manual and semi-<br>automatic equip-<br>ment for large<br>multiple burner<br>installations up to   |
| М                                      | Mechanical<br>Atomizing<br>Type Burner                         | No. 5 Oil<br>without<br>preheating<br>No. 6 Oil              | Up to 125.0   | Manual                   | anv capacity.  |





The Petro Automatic Boiler for domestic steam or hot water heating is a burner and boiler especially combined for highest operating efficiency—a complete unit ready to be connected to piping. Made in six sizes for either oil or gas.

preheated



## AMERICAN ARCHITECT REFERENCE DATA ON OIL HEATING EQUIPMENT

## Features of Design and Construction

The limitations of space here prohibit any attempt to describe the mechanical features of the complete line of Petro & Nokol equipment. Specific literature describing each burner will be gladly provided if it is desired.

The accompanying table, however, summarizes the various models and types of Petro & Nokol oil burners and the service for which they were primarily designed. There is a model for every type of heating plant—for every grade of oil—for every price range. Yet the most inexpensive Petro & Nokol burner welcomes the most critical examination. Large production only makes it possible for each burner to be thoroughly engineered and properly built and tested to meet the service demands for which it is designed, at reasonable cost to the consumer.

## Control and Safety Devices

All domestic and the smaller industrial burners are fully automatic in operation. All automatic burners are equipped with complete automatic control devices protecting both the burner and the boiler or furnace from abnormal operating conditions. Special controls and protective devices can be supplied to meet unusual operation conditions.

## Petro Automatic Boiler-For Oil or Gas

In addition to the oil burners listed in the accompanying table, Petro offers a series of domestic steam and hot water boilers containing built-in Petro oil burners or gas burners, in 6 sizes for from 285 to 1200 square feet of steam radiation, with corresponding capacities for water radiation. Conversion from oil burner to gas burner or vice versa is easily made by mere substitution of the desired burner assembly. Fuel consumption is exceptionally low because of the perfect co-ordination made possible by building burner and boiler for each other. Units are encased in heavily insulated, attractively finished cabinets of superior appearance.

in heavily insulated, attractively finished cabinets of superior appearance. Yet the cost of this fine equipment completely installed is commonly no greater than the cost of other boilers when equipped with an oil burner.

## Distribution—Service—Undivided Responsibility

As an early pioneer in the oil burner business, the Petroleum Heat and Power Company years ago saw the advisability of assuming full responsibility for the satisfactory operation of an oil burner system and hence combined the sale and installation of equipment with a fuel oil service.

Today the Petroleum Heat and Power Company offers a complete service to purchasers of oil burner equipment that can only mean complete satisfaction.

Throughout the Atlantic seaboard territory and in many of the more important mid-western centers, this company functions truly as a Public Service enterprise and offers an undivided responsibility embracing the installation, servicing, provision of proper fuel oil, which insures satisfaction with Petro & Nokol equipment. Through experienced distributors in other sections of the country, a factory field engineering organization is available at all times for survey, and conference in all things related to the use of oil as a fuel.

## Performance and Acceptance

The present Petroleum Heat & Power Company organization has been built up through the merging or acquisition of several important companies so that the parentage of the Petroleum Heat and Power Company extends back to 1903—to the development of the first modern industrial oil burner. In the intervening years more than 80,000 installations have been made from coast to coast. Petro & Nokol oil burners today are found in practically every type of building from the 52-story Metropolitan Life Insurance Building and the Ritz-Carlton Hotel in New York, to modest residences in suburban and rural districts.

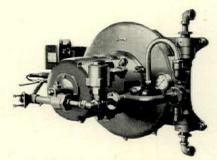
#### Prominent Petro & Nokol Installations

| Metropolitan Life Insurance Company                             | New York City       |
|---|---------------------|
| Ritz Carlton Hotel  | New York City       |
| Equitable Building  | New York City       |
| Riverside Memorial Church                                       | New York City       |
| Cornell Medical Centre  | New York City       |
| Mark Hopkins Hotel  | San Francisco       |
| 26 Broadway   | New York City       |
| American Central Life Insurance Company                         | Indianapolis        |
| Pacific Telephone & Telegraph Building                          | Los Angeles         |
| Sinclair Building   | San Antonio         |
| University of Toledo  |                     |
| Lake Placid Arena   |                     |
| All Petro & Nokol burners are approved and listed by the U      | nderwriters Labora- |
| tories, as well as by all other Government, State and Municipal |                     |

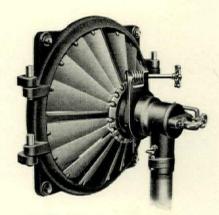
## Engineering Counsel and Conference

Architects are invited to inquire for detailed specifications and complete data on Petro & Nokol burners or the new Petro Automatic Boiler, and to take advantage of and employ the complete engineering service offered by the company for the planning of oil burning systems and the proper selection of equipment.

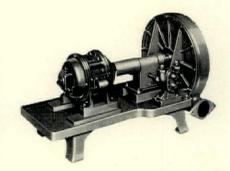
## PETRO-NOKO



Model "W": Horizontal, direct motor driven rotary cup type burner for large commercial and industrial installations with heavy oil. Gas-electric ignition,



Model "H": Air turbine driven rotary cup burner for heavy duty, multiple burner installation. Air and oil supplied from central fan and pump set. Manual ignition.



Model "H" Fan and Pump Set: For supplying low-pressure air and oil to Model "H" and "M" burners and air registers. Installed in duplicate to provide stand-by power source.

## PETROLEUM HEAT AND POWER COMPANY

FACTORIES: Stamford, Conn.; Chicago, III.; San Francisco, Cal.

BRANCH OFFICES: New York, Boston, Providence, Philadelphia, Baltimore, Washington, Newark, Portland, Me.,
Detroit, Los Angeles, Tacoma, Portland, Ore.

## THE ELECTROL HEATING UNIT

## ... The Reasons For Its Superiority

The Electrol Heating Unit is a complete oil burning and steam making unit. It is something far more than the mere combination of an oil burner and a boiler. Every Electrol Heating Unit is designed and built as a complete unit—and each unit is constructed in proportion to the designed load. It is manufactured by Electrol Incorporated, one of the pioneers in the oil burning industry with 14 years continuous experience in the field.

## High Efficiency

In tests, the Electrol Heating Unit has shown an over-all efficiency of better than 80%. A 12.6% CO2, with a stack temperature of less than 400° F. has been obtained at rated capacity. Because it is built as a complete unit—requiring no adjustments or changes when installed—these high efficiencies obtain in the field as well as in the laboratory.

## Unusual Quietness

Acoustical experts of the Johns-Manville Co., working in collaboration with Electrol engineers, have achieved an unusual degree of quietness in operation through the liberal use of Johns-Manville sounds absorbing and sound insulating materials.

## Induced Draft

The fan for supplying air for combustion is attached to the discharge end of the boiler, drawing the air through instead of pushing it in. Insures clean fire on cold start and positive control of secondary air. Precludes all possibility of puff backs and eliminates uncertainties of chimney drafts.

## Low Heat Loss

Boiler is of copper bearing steel with seamless fire tubes. Joints electrically welded. Constructed to prevent air and gas leaks. Built in accordance with A. S. M. E. specifications for working pressures up to 100 lbs. and tested to 150 lbs. hydrostatic pressure.

Cylindrical combustion chamber, lined with refractory, is located in center of boiler proper and is entirely surrounded by water. Combustion gases travel the complete length of the boiler three times through correctly proportioned flues. This, combined with the three-shell construction of the boiler and the insulating material, insures high efficiency and low heat loss.

## Quick Steaming

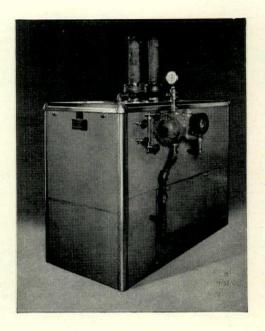
The unit has an ample steam dome. Quick steaming, resulting from the concentration of heat upon a small volume of water, distributes pressure throughout all pipes and radiators and prevents the condition of some radiators still being cold when thermostat cuts off. Unit operates fewer hours per day with consequent fuel economy. 99% dry steam produced at steam delivery outlets between boiler proper and outer shell.

#### Low Water Line

The unit has an exceptionally low water line—42 in.—allowing correct pitch of return lines, particularly in low basements.

## Clean Operation

Complete fuel combustion eliminates soot. Rapid circulation of water prevents formation of scale and blistering of tubes and crown sheets. Return inlets located so as to eliminate all sludge and foreign matter entering boiler proper.



## Quick, Economical Hot Water

The water-back end of the combustion chamber is designed to contain a domestic hot water heating coil. Coil is submerged in boiler water and is also heated by combustion gases providing rapid, low cost domestic hot water.

#### Other Features

Mechanical atomization. Continuous electric ignition, plus Electrol principle of low velocity rotating air. Pressure operated and magnetic cut-off valve of Electrol design prevents afterdrip of oil. High voltage controls used throughout. Safety control is the famous Electrol Master Control.

## Sizes and Capacities

| Unit Rating Net Capacity |              | Capacity     | Lbs. Oil  | Over   | all Dimens | sions |
|--------------------------|--------------|--------------|-----------|--------|------------|-------|
| Number                   |              | Water        | per hour  | L      | W          | H     |
| 5                        | 500 sq. ft.  | 800 sq. ft.  | 9 - 121/2 | 241/4" | 241/2"     | 50"   |
| 10                       | 1000 sq. ft. | 1675 sq. ft. | 12 - 18.2 | 361/4" | 241/2"     | 50"   |
| 15                       | 1500 sq. ft  | 2500 sq ft   | 17.5 - 28 | 5076"  | 243/6"     | 50"   |

#### Service and Distribution

The Electrol Heating Unit is sold and installed through branch offices at St. Louis, Boston, Chicago, East Orange, N. J., and Seattle, and through hundreds of qualified dealers located in almost every state. Each branch office maintains skilled engineers available for consultation at all times, as well as factory trained service and installation men and travelling field men serving dealers and customers.

#### Quality and Attractiveness

Electrol Heating Units are built to quality specifications throughout and are designed for lasting trouble-free service. Each unit is neatly encased in an attractive enamelled cover offered in a variety of colors. Prices vary according to local conditions but we are prepared to furnish complete quotations on any job on short notice.

#### For further information write to

## ELECTROL INCORPORATED

World's Largest Manufacturer of All-Electric Oil Burners

Main Office: 227 East 45th St., New York, N. Y.

# Presenting the New

# GENERAL SE ELECTRICO OIL FURNACE

All-automatic unit—burner, boiler, controls and hot water heater—coordinated in design, and sealed in steel.

OT an attachment, not a collection of parts, the new General Electric Oil Furnace coordinates burner, boiler, controls and domestic hot water heater in one complete, sealed unit.

The G-E Oil Furnace will serve hot water, steam, vapor, and (with an additional unit, the G-E Air Conditioner) warm air systems . . . maximum boiler output 1070 square feet of equivalent steam radiation . . . sufficient hot water for any reasonable domestic demands.

## More effective combustion

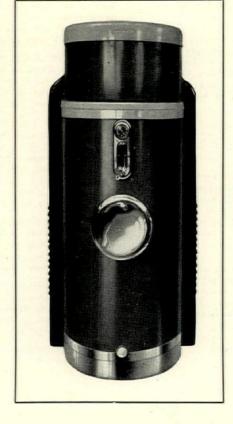
By a new principle of "impact-expansion atomization" oil is now effectively atomized . . . and by "progressive combustion" (a slow flame) oil is burned cleanly, quietly, and completely. No "blow torch" action. Complete combustion without soot is assured. No. 3 fuel oil used. Electric ignition.

## Complete "sealed in steel" unit

No oily parts project into the room. No soot, odors, vapors, or roar, since the G-E Oil Furnace is completely enclosed, sealed in steel, and the mechanism is actually under partial vacuum, even when shut down. Consequently no odors ever can escape from the furnace.

## Coordinated design

All parts are designed for coordination and all parts are of G-E manufacture.



... Control contacts are silver... High temperature metal parts nickel chromium steel... G-E Industrial Type Motor... large bearing areas automatically oiled ... no gears or belts... air cooled burner nozzle... steel boiler tested to 18 times maximum operating steam pressure.

## Controls built in . . . no extras

Price includes G-E Thermal Control with G-E Telechron clock (sep-

arate day and night settings)....
High water temperature (or steam pressure) cut-off.... Low water cut-off.... Flame detector (flame established in 4 seconds)...
Overload relay... Safety door cut-out... Domestic hot water control... Oil tank screen valve and anti-siphon device.

## No adjustments necessary

Combustion rate needs no changing the year round. . . Chimney draft variations do not affect burner performance . . . all mechanism enclosed and sealed to prevent tampering.

## Ease of service

Burner, controls, every mechanical part, even the refactory, can be removed and replaced with new parts if necessary, within a few minutes. No loose electrical connections . . . all plug-in type.

Installation under supervision of G-E factory-trained men. No installations made where dealer cannot give service promptly.

## All installations to date show savings

21 carefully checked installations in actual home service show 14% to 53% fuel savings, over previous types of heating, including oil. For complete data, etc. address General Electric Company, Air Conditioning Department, 120 Broadway, New York, N. Y.



## OIL BURNERS

## Proved by 10 years. of dependable service

Two models are offered for domestic and other moderate size heating plants, in addition to heavy duty industrial burners. Model D, of DeLuxe construction and finish, employs the exclusive Wayne vertical design and is made in four sizes handling from 2 to 22½ gallons of oil per hour. Model S, a Domestic Oil Burner with horizontal mounting, is made in four sizes, burning from 1 to 20 gallons of oil per hour. Wayne Oil Burners will fit any make of boiler or heating plant, since all parts of the burner are outside the fire box.

#### PRESSURE ATOMIZATION

In both types, the oil is atomized under pump pressure of 100 lbs. or more, as required. Integral pump of rotary gear type draws fuel from the storage tank and returns surplus oil to tank. Three screens, from the storage tank and returns surplus oil to tank. two in advance of pump and one at the firing head, filter the oil through areas substantially in excess of underwriters requirements. Interchangeable spray tips adjust the capacity to load and grade

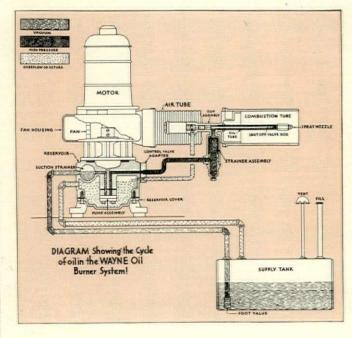
#### IGNITION

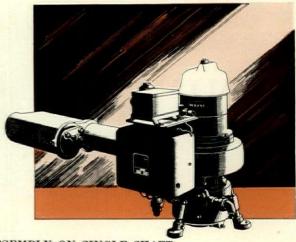
All electric, intermittent type, is standard.

Of special patented design to assure complete atomization of oil and proper blending of air and oil mist. Pressure operated valve shuts off oil at atomizing tip immediately when burner stops. Air is introduced in correct volume under low velocity to prevent roaring of flame. Air volume is adjustable. Entire firing assembly easily removed for inspection.

#### FLAME AND COMBUSTION CHAMBER

Because of the design of the firing head, the air enters the combustion chamber in a round whirling ball, rotating in the opposite direction to the oil spray, thoroughly blending the two. The result produced is a floating mass of quiet orange flame. The combustion chamber is formed of fire brick to fit the boiler or furnace.





ASSEMBLY ON SINGLE SHAFT

ASSEMBLY ON SINGLE SHAFT
Motor, blower and oil pump are direct-connected in line, without
gears or belts. Motor in Model D is of vertical type, slow speed
(1725 R.P.M.), standard make. Air fan is a balanced Sturtevant
unit mounted in a housing designed to eliminate friction loss and
noise. Pump is over-size, with a capacity 5 to 10 times normal
requirements. It is immersed in the oil reservoir formed by the base of the burner mechanism, assuring lubrication and maintaining prime at all times.
In Model S the units are mounted horizontally, and are of sub-

stantially the same type.

## BURNS NO. 3 OIL OR LIGHTER

Model D is listed by Underwriters Laboratories to burn No. 3 oil. Model S is listed to burn No. 3 oil. Wayne also manufactures industrial type Burners—Models No. O5 and No. S5, designed to burn the heaviest grade of fuel oils.

#### AUTOMATIC CONTROLS AND SAFETY DEVICES

Standard equipment includes thermostat (without clock) and all necessary controls to make burner completely automatic. Controls are of low voltage, closed circuit type. Operation centers in a relay panel. Normally the thermostat starts burner through its firing cycle and stops it. Combustion safety control stops cycle if ignition does not take place or combustion ceases for any cause. Boiler or furnace auxiliary control prevents overheating.

#### CHROMIUM PLATED HOUSINGS AND TRIM

The DeLuxe Model D is of superior construction and finish. Motor hood, fan housing, air tube and trim are chromium plated; balance of parts in black enamel. Model S burners are also finished in standard chormium plate and black enamel.

#### SERVICE AND DISTRIBUTION

Wayne Oil Burners are nationally distributed in 600 cities through qualified Wayne dealers, each of whom is required to complete a thorough course of instruction at the factory. Dealers render complete local service on every Wayne installation.

#### SIZES AND CAPACITIES

| Model<br>No. | Туре             | Max. Gals.<br>Oil per hr. | Equivalent<br>Steam | Radiation<br>Water |
|--------------|------------------|---------------------------|---------------------|--------------------|
| GI           | Gravity          | 2                         | 500                 | 750                |
| S1<br>S2     | Horizontal Atom. | 3                         | 1,000               | 1,675              |
| 82           | Horizontal Atom. | 6                         | 2,000               | 3,350              |
| S5           | Horizontal Atom. | 20                        | 8,400               | 13,400             |
| D3           | Vertical Atom.   | 51/2                      | 1,850               | 3,200              |
| D4           | Vertical Atom.   | 10                        | 3,500               | 5,500              |
| D5           | Vertical Atom.   | 12                        | 4.200               | 7.000              |
| D6           | Vertical Atom.   | 221/2                     | 9,000               | 14,400             |
| 05           | Spinner          | 25                        | 10,000              | 16,000             |

#### PRICE RANGE

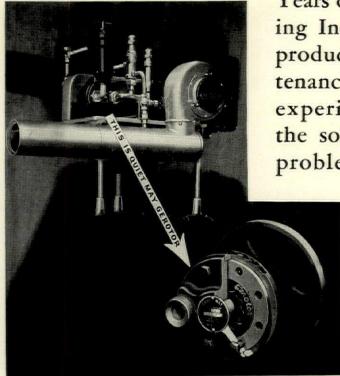
Wayne Oil Burners are sold complete with installation tank, and all necessary controls. Prices are thus variable according to location and condition. For relative purposes only, the price range of Wayne Oil Burners without tank, etc., may be indicated by the following Model G-1, \$80.00; Models S-1 and S-2, \$250.00; Model D, \$300.00 to \$600.00.

PRODUCT OF

## WAYNE OIL BURNER CORPORATION

FORT WAYNE, INDIANA

Our hats are off to the Editors of the American Architect and Taylor, Rogers & Bliss, Inc. who have so ably presented this exposition on "The Selection and Use of Oil Burners."



Years of experience in the Oil Heating Industry gained in oil burner production, installation and maintenance together with exhaustive experimental research leading to the solution by us of mechanical problems that have been baffling

scientists and engineers for over 150 years, brings the QUIET MAY Automatic Oil Burner to you with all that has proven best in domestic and industrial oil burning practice plus—three great new exclusive

QUIET MAY features. (Patented and patents pending.)

## 1. The QUIET MAY GEROTOR PUMP

(The biggest news since the invention of the oil burner)

## 2. The QUIET MAY Sapphire Jewelled Atomizer

(Another link in lifetime service)

## 3. The QUIET MAY Regulating Valve

(Known as the QUIET MAY "Traffic Cop")

Three outstanding accomplishments that put QUIET MAY 17 years ahead of the field.

The futility of here setting forth complete specifications and description covering these revolutionary and outstanding QUIET MAY features is obvious.

The QUIET MAY Architect's Manual, just off the press, will be promptly sent you upon request.

# MAY OIL BURNER CORPORATION Baltimore, Md.

## Perfecting Oil Burner Installations

MINNEAPOLIS-HONEYWELL AUTOMATIC CONTROL DEVICES ADD TO THE COMFORT, CONVENIENCE, SAFETY AND ECONOMY OF OIL BURNING INSTALLATIONS

INNEAPOLIS-HONEYWELL Automatic Controls in a wide variety of forms are already standard equipment on the majority of recognized domestic and commercial oil burners. The automatic control and protective devices thus employed serve

to direct the operation of the oil burner and to prevent its operation under abnormal conditions.

In addition to these elementary units Minneapolis-Honeywell manufactures a wide range of auxiliary controls which may be used to enhance the convenience, comfort and economy of oil burner installations, to contribute additional safety under special operating conditions, and to control precisely the distribution of heat throughout the building or system.

#### THE ALL ELECTRIC CLOCK THERMOSTAT

Where oil burning devices employ low voltage thermostats and control equipment, enhanced convenience and economy can be secured by specifying the new Minneapolis-Honeywell Electric Clock Thermostat. This unit provides not only a thermostat sensitive to the slightest changes in room temperatures, but an accurate time piece as well, the clock movement being regulated by the A.C. impulses from the power plant. Extremely sensitive; can be set to operate on a differential of 2° F. Automatically controls day and night heating levels. Available with low limit cutout which automatically cuts Low Limit Control out of operation when room temperature rises higher than thermostat setting. Also available with weekend shutoff which automatically continues the low night temperature through weekend period or over holidays when day temperature is not needed.

#### SUMMER-WINTER CONTROL SYSTEM

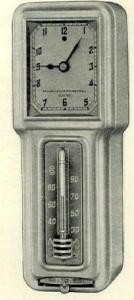
The Minneapolis-Honeywell Summer-Winter Control System enables the home owner to utilize his burner throughout the twelve months of the year to provide a constant automatic supply of domestic hot water. It is applicable to all steam, vapor and hot water heating systems, and embraces a complete set of controls that prevent the distribution of heat through the building when not required, while





Minneapolis-Honeywell Motorized Butterfly Valve and related controls offer precise regulation of heat distribution. The Modustats shown at left provide thermostatic control of individual radiators. Low-Limit Control, an effective means of preventing "Cold 70° F."





Minneapolis-Honeywell All-Electric Clock Thermostat

providing a constant supply of domestic hot water through occasional operation of the oil burner. The system is completely automatic, and the advantage of summer and winter operation of the burner, instead of only the winter months, is immediately apparent. Complete details for any type of installation supplied on request.

## LOW LIMIT CONTROLS FOR "COLD 70°"

When radiators cool off the air tends to become stratified, producing a condition of discomfort even with the thermometer on the thermostat at 70° or at the required setting. This condition is particularly noticeable on mild days when the oil burner is off for comparatively long periods.

Minneapolis-Honeywell Low Limit Controls correct this condition by re-establishing air circulation through the intermittent operation of the oil burner even when heat is not demanded by the thermostat. The radiators are thus kept slightly warm, re-establishing gravity circulation of the air. Adaptable to steam, hot water, vapor or warm air heating systems.

## MODUTROL SYSTEM FOR CONTROLLED HEAT DISTRIBUTION

A variety of units, including the Minneapolis-Honeywell Modutrol (for unit ventilators, concealed cabinet radiators and warm air heating systems); motorized valves (for zone control of steam and hot water supply mains); and Modustats (for the individual thermostatic control of radiators) provide means for the accurate and wholly automatic control of temperatures throughout all parts of a heating system of any type. Appropriate units added to automatic oil burning equipment provide truly automatic heat in the full sense of the phrase. Complete data supplied on request.

#### OTHER DEVICES AND ENGINEERING SERVICES

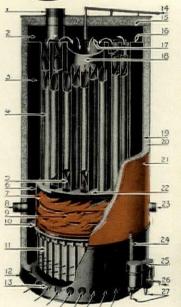
Minneapolis-Honeywell Regulator Company manufactures 422 automatic temperature control and protective devices, including limit controls, damper motors and regulators, unit heater and zone control systems, gas and oil burner controls, relays, mercury switches, and related devices. Complete engineering service is available to architects for the proper application of these products to the problems at hand.

## MINNEAPOLIS—HONEYWELL

BRANCH AND DISTRIBUTING OFFICES: New York - Boston - Hartford - New Haven - Providence - Philadelphia - Baltimore - Washington Buffalo - Syracuse - Rochester - Pittsburgh - Cleveland - Detroit - Chicago - Milwaukee - Indianapolis - Cincinnati - St. Louis - Kansas City Denver - Salt Lake City - San Francisco - Los Angeles - Portland - Seattle. CANADA: Minneapolis-Honeywell Regulator Co., Limited, Toronto and Montreal. EXPORT: New York City. CABLE ADDRESS: "Laboramus"

## SIMPLIFIED AUTOMATIC OIL BURNING

#### BOILER UNITS, "WEATHER CONTROL UNITS." WATER HEATERS AND RANGES



boiler outlet
heat chamber
water chamber
boiler tubes
heat deflectors
water leg
combustion
chamber
boiler return
gyrating flame
lower boiler h
Gyro-Flame
burner
easing hase -Gyro-Flame burner - casing base - air intake - flue deflector lever - removable heat chamber head - upper boiler head - deflector agitator - return flue - boiler shell - insulation - outer casing - crown sheet - boiler inlet - wiring conduit - M.-W control support leveling serews



M-W AUTOMATIC BOILER UNITS

for steam and hot-water heating. Built, shipped, installed as complete, matched entities. Burner element: Famous M-W Gyro-Flame Burner.

galvanized outlet
galvanized copper bearing steel head
galvanized copper bearing steel shell
galvanized seamless steel boiler tubes
5-M-W patented thermostatic
Control
Godfan copper bearing

5-M-W patented thermostatic
Control
G-galvanized copper bearing
steel head
7-burner control rod housing
8-heavy burner support casting
9-M-W patented oil burner
10-burner safety tube
11-M-W oil-burner control
12-oil line scraper rod
13-oil feed pipe
14-heavy cast-iron base
15-cast-iron flue collar
16-refractory insulation
17-boiler tube scraper handle
18-galvanized inlet
19-heavy steel outer casing
20-flame and burner inspection
door



Domestic and commercial types. Two sizes. Continuous, economical supply of hot water.



The complete elimination of motors and other mechanical operating details, the use of natural draft and the carbureting principle of vaporizing oil, and the integral design of oil burner and heater element are the three distinguishing features of Motor Wheel Boiler Units, "Weather Control Units," Hot Water Heaters and Ranges. The burners are made exclusively for the heating equipment in which they are used, and the heating units are designed exclusively for the burners, bringing about a balanced combination of known operating efficiency.

NATURAL DRAFT PRINCIPLE OF COMBUSTION

In all five types of units described below, the oil burners employ natural draft to vaporize the correct quantity of No. 1 fuel oil and to produce a clear flame of known intensity. The light oil is vaporized much as gasoline is vaporized in an automobile carburetor. An oil burning or gas pilot ignites the vapor produced. No electrical connections are required other than for the electrical thermostatic controls. Gravity feed eliminates the need for pumps and the use of natural draft eliminates blowers, fans and motors.

M-W BOILER UNITS FOR STEAM HEATING (Automatic)

Boiler and burner are combined into a single matched and balanced unit designed, built, shipped and installed as an entity. The burner element is the M-W Gyro-Flame Burner of special design which causes the air drawn in by natural draft to acquire a vigorous rotary movement as it vaporizes the oil in the vaporizing chamber. Combustion takes place above the burner unit in a series of gyrating flashes where the heat units immediately enter the vertical tubes of the boiler unit above. Here the gyrating principle is further sustained by spiral-shaped elements in the tubes causing the heat units to wipe all parts of the tube surface, for rapid transfer to the surrounding water. The spiral tube deflector can be mechanically agitated from outside the boiler casing to keep the fire tubes clean. Two sizes of M-W boiler units for steam heating are made as shown in the table below. shown in the table below.

M-W BOILER UNITS FOR HOT WATER HEATING (Automatic)
Substantially the same in design and construction as the M-W Boiler Units for steam heating, employing the same Gyro-Flame Burner and a similar vertical tube boiler. Sizes and capacities for both steam and hot water units are shown in the following table:

| No.<br>Model | Туре  | Operating Range in<br>Equivalent Steam or<br>Hot Water Radiation | Maximum<br>Oil<br>Consumption<br>Gallons<br>per hour | Minimum Draft<br>Required at<br>Boiler |
|--------------|-------|--|--|--|
| 400-S        | Steam | 100 to 425 sq. ft.   | 1  | .06"                                   |
| 400-W        | Water | 100 to 680 sq. ft.   | 1  | .06"                                   |
| 800-S        | Steam | 425 to 850 sq. ft.   | 2  | .08"                                   |
| 800-W        | Water | 680 to 1360 sq. ft.  | 2  | .08"                                   |

M-W WEATHER CONTROL UNIT
The M-W Weather Control Unit is a complete self-contained unit with an integral M-W oil burner, for warm air heating in winter and cooling by means of circulating air in summer. Each unit is equipped with a humidifier of adequate capacity and with a motor-driven blower for forced air circulation. Like the M-W boiler units for steam and hot water heating, the burner and furnace are integrally designed. The burner is of natural draft, vaporizing type, burning No. 1 fuel oil, entirely automatic in operation. Two models are offered as follows:

| Model No.  | Maximum Oil Consumed Gal. Per Hour | Maximum<br>Heat Delivered<br>Per Hour   |   |
|------------|------------------------------------|---|---|
| 307<br>308 | 111/2                              | 87,700 b. t. u.'s<br>134,500 b. t. u.'s | 5 |

M-W AUTOMATIC OIL BURNING WATER HEATER
A self-contained automatic oil burning water heater for domestic and small commercial hot water supply employing a natural draft, vaporizing type oil burner of special design in a vertical fire tube water heating element integrally designed. Burns No. 1 fuel oil. Made in two sizes as follows:

| Model<br>No. | Capacity in Gals.<br>Hot Water<br>Per Hour | Max. Gals. Oil<br>Per Hour |
|--------------|--|----------------------------|
| 26           | 25   | .22                        |
| 66           | 55   | .33                        |

For larger commercial hot water supplies, the M-W Boiler Units for hot water heating, Models 400 and 800, offer correspondingly increased capacities.

M-W OIL BURNING RANGE
Cooking ranges utilizing No. 1 fuel oil in a specially designed self-contained, natural draft burner. For restaurants, hotels, lunch rooms and similar commercial cooking purposes. Made in five models and two sizes.

Extremely economical to operate.

APPROVED DESIGN

All M-W Oil Burning Units are listed as standard by the Underwriters Laboratories and are equipped with the necessary electrical controls for fully automatic operation (except the oil burning ranges which are equipped for manual control).

Send for descriptive folders.

M-W OIL-BURNING RANGES
Two types—for homes, restaurants,
hotels, lunch rooms, roadside stands,
clubs, yachts, etc.



MOTOR WHEEL CORPORATION LANSING **MICHIGAN** 





Silent Glow Rotary Oil Burner

## SILENT GLOW OIL BURNERS

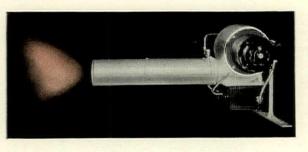
## In Types to Meet Every Heating Need

The three basic types of oil burners manufactured by the Silent Glow Oil Burner Corporation are designed to meet every type of boiler or furnace requirement through a wide range of capacities from threequarters of a gallon of oil per hour to 65 gallons per hour. The major charac-

teristics of the ten models and sizes offered are summarized in the table below.

SILENT GLOW MODEL 1000 A simplified pressure atomizing gun-type burner for domestic applications requiring equivalent steam radiation of 1,000 feet or less. Exposed metal parts finished in cadmium plating and black lacquer. Also available colors and chromium. SILENT GLOW MODEL

A pressure atomizing burner especially adapted for churches, schools, small apartment buildings and larger homes requiring the equivalent of 3,000 square feet of steam radiation or less. This is a deluxe model of superior construction throughout fushed in chromium plate and vitreous enamel. NT GLOW WEST OIL NERS tal rotary burn-



Above—Silent Glow Model 1000

Right-Silent Glow Model G

| mished in Circinia | in place and vitreous chamer.                              |
|--------------------|--|
| SE ANTE            | SILENT GLOW MIDWEST OIL BURNERS Horizontal rotary burn-    |
| 102                | ers manufactured in<br>six sizes han-<br>dling the heavier |
| 120                | oils up to No. 5 with-<br>out pre-heating. In all          |
|                    | models oil is atomized through a centrifugal               |
| <u></u>            | atomizing cup revolving at 3,450 R. P. M.                  |

| TYPES, CAPACITIES AND CHARACTERISTICS |               |                          |                  |                                |                              |  |
|---------------------------------------|---------------|--------------------------|------------------|--------------------------------|------------------------------|--|
| Model                                 | No.           | Type                     | Oil Grade<br>No. | Gals. Oil<br>Per Hour          | lgnition                     | Applications   |
| Silent<br>S-3B<br>S-3A                | Glow          | Vertical<br>Rotary       | 2 2              | 3/4 to 11/4<br>1 to 10         | Gas Pilot or<br>High Tension | Wall flame rotary burner for<br>domestic round or square ver-<br>tical boilers and warm air fur-<br>naces.                         |
| Silent<br>Model                       |               | Gun<br>Pressure          | 3                | 1 1/3 to 3½                    | High Tension<br>Electric     | For vertical or horizontal sectional or tubular boilers and<br>warm air furnaces of all types<br>within capacity range.            |
| Silent<br>Model                       |               | Gun<br>Pressure          | 3                | 13/4 to 10                     | High Tension<br>Electric     | De luxe unit for all types o<br>boilers, or furnaces within ca<br>pacity range.  |
|                                       | st 106<br>208 | Horizontal<br>Rotary Cup | 3<br>4<br>5      | 1/3 to 2½<br>1 to 7<br>4 to 25 | Expanding<br>Gas Pilot       | For domestic and commercia<br>applications in all types of boil<br>ers within capacity range. De<br>signed especially for handling |

## SILENT GLOW ROTARY OIL BURNER

This wall flame rotary burner is designed for small domestic installations where the equivalent steam radiation does not exceed 3,250 square feet. The oil is mixed with a controlled volume of air and thrown from rotating head over a hearth place against specially designed refractory grilles where it burns with a gaseous blue flame.

## DISTRIBUTION AND SERVICE

heavier oils.

Branch offices are maintained at Boston, Mass., Chicago, Ill., and St. Paul, Minn., through which regional distributors and agencies are supervised. All Silent Glow representatives maintain factory trained men. Branch offices offer engineering services to architects upon request.

An aluminum fan mounted on the spinner shaft forces approximately 30% of the primary air through the atomizing cup with the oil, while the remainder is introduced for combustion around the outside of the atomizing cup which is thus cooled and protected against

carbonizing.

Laboratories.

AUTOMATIC CONTROLS

All units, except when designed for manual or semi-automatic operation, are

equipped with standard con-

trols of listed type. All models are listed as stand-ard by the Underwriters

Silent Glow Mid-West Oil Burners AMERICAN ARCHITECT

## SILENT GLOW OIL BURNER CORP.

HARTFORD, CONNECTICUT

## THE READERS Have a Word to Say

## MORE ABOUT WORLD'S LARGEST ROOFS

Editor, AMERICAN ARCHITECT:

HEN I read the caption under the picture on page 29 of your May issue, "Detail of Travel and Transport Building, which is 125 feet high and 200 feet across. This is the largest unobstructed area ever enclosed beneath a roof," I took it to be one of those pardonable slips which are so obvious that they are scarcely worth comment; but when your correspondent, Mr. Harry Bogner, on page 96 of your July issue, finds it necessary to point to Breslau and to Leipsic, Germany, for examples of larger areas, I feel impelled to ask, why go so far abroad?

It would seem that the unobstructed area under the roof of The Travel and Transport Building is about 31,400 sq. ft. This may be compared with the following approximate areas:

| 8th Coast Artillery Armory, New York City | 145,000 | SQ. | ft. |
|---|---------|-----|-----|
| Atlantic City Convention Hall             | 144,000 | 44  | 64  |
| University of Minnesota Field House       | 90,000  |     |     |
| Chicago Stadium                           | 77,000  | 44  | 44  |

Other buildings in this country with unobstructed areas exceeding 31,400 sq. ft. might also be cited. It may be that your caption writer intended to apply his statement to dome roofs only, but even this would not make it correct, as Mr. Bogner has shown.—Gavin Hadden, Civil Engineer, New York.

## HOW TO MAKE A LIVING OUT OF ARCHITECTURE

Editor, AMERICAN ARCHITECT:

N the July issue of your magazine I read an article entitled "How to make a living out of Architecture," but do not consider that any satisfactory solution was offered. So much has been said and written on this subject that I wish to call attention to some very simple facts.

In general people make their living in one of two ways: either by giving services for which they are paid, as professional men, craftsmen, etc., or in a business, where profits are made from such transactions as sales of goods, securities, etc.

It is impossible for any professional man to make as much as a successful business man, as he is paid for services, and cannot, so to speak, make a clean-up on a transaction which may be made in an hour. However, if he conducts his business properly, he is fairly renumerated for work done, and does not assume the risk taken by the business man. Fortunes are made by taking risks, and for each one there are a large number of unheard-of failures. As the professional man does not take risks, he should not expect a large profit.

It is ridiculous to compare the earnings of an architect with those of a successful manufacturer. The manufacturer deals with the money of stockholders, and may fail both for himself and them. The architect can lose nothing beyond office expenses.

In general an architect should have three qualifications: Ability to do the work given him, ability to get the work, common sense or judgment.

If he does not have No. 1, it will be found out either in an architectural school, or in an office where he is employed, and his career in the profession will end, unless he becomes what might be classed as an architectural broker; that is, a man who simply runs an office, and employs capable men to do his work.

Failing in No. 2, he may rise to be a partner in a firm, due to his ability in No. 1 and No. 3. Qualification No. 1 can not be given by a school, it may merely be highly trained and developed, whereas No. 2 and No. 3 are born in the man, and can only be developed by business experience. I am ready to admit that a certain amount of business training might be of use to the architect who starts out for himself, but doubtful if it should be included in an architectural school, as they cannot cover everything, and many graduates never practice independently.

The average man lacking in No. 1 does not get very far, and turns to some other way of making a living, without much damage done. Unfortunately, in all work, the number of men employed has to be many times greater than the number of employers. Many men are better off on a salary, and misfortunes arise from men lacking in qualifications No. 2 and No. 3 attempting to go in business for themselves.

I think there are three simple "dont's" which would save endless trouble for the man starting for himself.

1. Do not start work for any man unless you think he can finance the building, or at least expects to pay you for the drawings. Endless work has been done for people who expect to get someone else to finance the project after drawings have been made, and who have no thought of paying for the drawings if it does not go ahead. If you do work of this sort, you are gambling, and should be prepared to lose, and not cry about it.

2. Do not start any work without being sure that the client knows what your charges are to be, and agrees to them, irrespective of whether the building is built or not. A contract is best, but in any case a letter should be written advising him. Failure to do this has led to endless trouble, especially with people who did not know they were to pay unless the building was built.

3. Do not lead the client to think he can get more than his money will buy, and refuse to make drawings for a more expensive building than he is willing to pay for. Many architects have made drawings for buildings which they knew would exceed the stated limit, with the feeling that the client might become carried away with their beauty, and build in the end. This may work occasionally, but usually ends disastrously.

If these rules were followed, less work might be done, but there would be fewer uncollectable bills. There is no point in doing work which is either not paid for, or for which the client gets nothing for his money.

An architect is employed by his client, and is supposed to be working in the interest of the man who employs him. He should not advise his client to erect a building which will not be a paying investment, or to build a house beyond his means, in order to get a job, any more than a surgeon should recommend an unnecessary operation for a fee, or a broker sell something unwise for his customer, for the sake of a commission.

It has been thoroughly proved that when an architect charges the recommended commission, and pays the average for draftsmen, office rent, etc., there should be a fair profit and return for his work; he should not ex-

pect more; he takes no risks of financial loss.

Endless articles have been written on office systems, some of which would add so much to the clerical overhead, that they are comparable to certain departments in the government, where the expense of collecting a tax may be greater than the tax collected. Accurate books should be kept, and drafting time should not be wasted. A good bookkeeper costs less than a good draftsman. An architect is better trained as a draftsman, and his time is worth more on his board than over the books.

A budding architect, who has nothing to lose but his own time can take chances making drawings without being sure of pay, as he may as well do that as sit in his office, but it is poor business to employ men to work

on any such project.

In normal times a man on salary in an architect's office is paid about the same as the average man of equal ability in some other business, and the average architect I believe receives about the same as the average man in some other professions. It is my belief that all professions are overcrowded at the bottom.—Edward F. Hoffman, Jr., A. I. A., Philadelphia, Pa.

## GOVERNMENT AID SUGGESTED TO REPLACE OBSOLETE BUILDINGS

Editor, AMERICAN ARCHITECT:

OLLOWING is the copy of a letter mailed May 20 and acknowledged by the President and Senator Robinson of Arkansas; also copy to Senator K. D. Mc-Kellar and Speaker Garner. The President, through Lawrence Richey, Secretary, promises to bring this to the attention of the Secretary of Commerce, who is looking after the program laid out by the President.

Subject: Employment and Return of Trade Based on a National State and Municipal Condemnation Measure or Law Regarding the Replacement of Dangerous Build-

Cities and towns through the United States have obsolete buildings which have been paid for many times over. As a rule, these buildings are dangerous to life and are fire hazards, unsanitary, and unsightly in their community. These buildings, as they now exist, are direct violations of existing Building Codes.

Now, why not a measure to condemn these buildings through the proper channels, and refinance their replacement through government loan aid or some other method considered safe and sound? By so doing, thousands of cities and towns throughout the nation will become in time places of beauty instead of a series of ugly makeshift buildings. Should this suggestion prove feasible, it should cause a resumption of the building industry. We of this field can go into the market for purchases of material and supplies including the employment of all classes of labor which will, in turn, revive shipping, manufacturing and trade in general. Our own potential buying power of the general necessities of living will augment the trade of those not directly connected with building, thereby affecting the products of raw material and farm products and instigating a general resumption of business.

No human or machine can endure where circulation is This, I claim, is the situation of America's greatest industry—the building trades—its circulative powers are cut off and have been this way for the past three years and it now is at its lowest ebb. It will, I am sure, provide a train of thought on a matter heretofore neglected. Many people were under the impression that the reconstruction measure would be beneficial to building, but are very much disappointed.

Trusting that you will see in this note, respectfully submitted for your consideration, a possibility of general relief, I am-J. J. Broadwell, Architect, Jackson, Tenn.

## SUBLETTING OF GOVERNMENT CONTRACTS

Editor, AMERICAN ARCHITECT:

HE manner in which numerous sub-contracts are let by contractors on government work is distressing. Many government contracts are let to firms who make a practice of following up government work and when awarded a contract sublet practically the whole thing after combing the country for sub-bids lower than those upon which the original bid was based. This means that much of the sub-work is done at a loss to the subcontractors who possibly made a mistake or were not familiar with government work—and the profits from such transactions go to the general contractor.

If the names of the various sub-contractors and the amounts of their bids were submitted in the original proposal and a requirement that these subs be adhered to, it would put an end to a practice which appears very unfair. I believe it would also place more work with contractors living in the immediate localities where the work is to be done, which would appear proper.

The above is but one of the objectionable practices of government contractors permitted under their contracts. Shouldn't we do something about it?—Frank H. Struble,

Architect, Salem, Oregon.

Editor's Note: A bill has been introduced in Congress to remedy this condition. The Huddleston plan, briefly summarized on page 40 of the July issue and intended to eliminate "shopping," has been adopted by the Boston Building Congress.

## FIREPLACE BUT NO CHIMNEY

Editor, AMERICAN ARCHITECT:

ISITING the Architectural League, I had the pleasure of inspecting the many creditable designs submitted for "A Small Suburban Library." I should like to draw the attention of the committee to an important omission in the winning design—the plan calls for a fireplace in the reading room, but the chimney is omitted on the elevation. I did not submit any design and have no personal interest in the selection.—Charles E. Hodges, Architect, New York.



## WOULDN'T THIS MAKE YOU BUY A NEW HOME, TOO?"

"JUST THINK—a home that's really cool and comfortable all summer long—and is kept that way by the same equipment that heats, humidifies and ventilates in winter! No more stifling, sleepless nights—no more wilting, breathless days, regardless of how hot the weather is outside! That's what I want and that's why I bought a new home now.

"Sure, building prices and materials have been really cheap for some time, but that wasn't

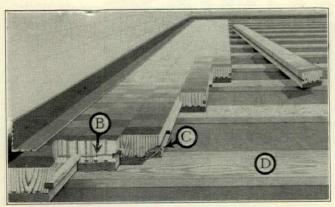


enough to clinch the sale with me. And to think that I only have to pay a little more than the cost of ordinary heating equipment for a home equipped with a Sirocco Conditioner. Wouldn't that make you want to buy a new home, too?"

The American Blower Corporation is one of the world's oldest and largest manufacturers of air conditioning equipment. It is the policy of the American Blower Corporation to collaborate with architects and consulting engineers in the design and application of air conditioning equipment, and to distribute its products through the established channels of the contracting trade. Send for architects' bulletin No. 1127.

AMERICAN BLOWER CORPORATION, DETROIT, MICHIGAN CANADIAN SIROCCO CO., LIMITED, WINDSOR, ONTARIO BRANCH OFFICES IN ALL PRINCIPAL CITIES

# THE MOST **Practical** FLOOR FOR GYMNASIUMS AND SCHOOL SHOPS



BLOXONEND the Original Strip Type Block Flooring

# Years Service Proves that BLOXONEND Construction Principles are Correct!

B Lateral Nailing

C Toe Nailing

D 1 x 4 in. Strips BLOXONEND—the original strip type block flooring has behind it a 16-year record of satisfactory performance. Kiln-dried blocks of selected Yellow Pine are securely dovetailed endwise onto substantial baseboards that are inflexible enough to carry over all uneven slabs or sub-floors. This guarantees the degree of smoothness in the finished floor that is expected of the accurately milled composite strips of BLOXONEND.

In gymnasiums and auditoriums where utmost resilience and foot comfort are essential, BLOXONEND is laid over and toe-nailed to floor strips with no fill between. The tensile strength of BLOXONEND—which is equal to a good inch floor—makes it possible to bridge these voids and obtain the necessary resilience. Special nails for lateral nailing come positioned in counter-sunk bores ready for driving.

A floor of BLOXONEND is handsome (natural color), inherently non-slip and non-splinter and remains smooth so long as the building stands. Its remarkable resilience (due to laying over strips with voids between) eliminates heel bruises and shin splints which injuries are usually caused by hard, unyielding floors. Write for free sample and descriptive booklet.

500 Schools Use Genuine Bloxonend

CARTER BLOXONEND FLOORING CO.

General Offices, Kansas City, Mo.



## Found in the U. S. Patent Office

(Continued from page 25)

"Thin pieces of paper are placed on opposite sides of the wire screen frame, and the frame, after the paper has been thus placed, is brought up to the mouth and the performer sings, speaks or hums through the paper. The sound of the voice is first split up through the fine pores in the paper, striking the front side of the wire screen and causing vibrations therein, then passing through the holes to the rear side of the wire screen, again causing vibrations therein, so that the sound of the voice is magnified. Any tone, tune or the sound of any instrument or the phonograph can be imitated thereby. The effect of these vibrations on the nerves is soothing and quieting. It is also useful in talking to deaf persons, as the sound can be heard by them much better than the ordinary voice."

These little touches make a house a home and remove the discomforts. Flies are one cause of discomfort. Suppose when showing a prospective buyer through the new house you came to the dining room and could point to a little machine plugged into the electric light socket.

"Oh, Mr. Smithers, what is that-a motion picture

machine?" exclaims the eager little woman.

"That, Mrs. Blivens," is the reply, "is the patented stereopticon fly catching machine." You thereupon press a button, the light is turned on, projecting a picture of a jar of honey on the white wall opposite. If there happens to be a fly in the room at the moment, he flies over and barges into the picture in the expectation of a meal. He is then, of course, caught upon the wall which you have thoughtfully coated with a sticky substance.

And so one might go on, adding to each room in the house those little features which our inventors have so thoughtfully provided. Just go down to the Patent Office and you can find all the ideas you want. Of course, you may have to pay the inventor a royalty for using his idea, but what of that? Surely, you would not have genius go unrewarded.

## 7 Jobs and 21 Active Prospects

(Continued from page 15)

greater interest in the exhibition and providing new attractions has resulted in serious consideration being given to a plan for including a display showing the possibilities of reconditioning buildings. Such expansion of the exhibition would be timely and should prove an invaluable medium for increasing modernization work and clearing it through architects.

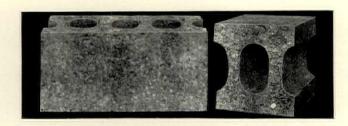
Although the exhibition was only opened in May of this year, the interest aroused has shown the advisability

of devoting additional space to the display.

The headquarters of a broad-gauge reliable building material dealer is a logical place for holding such exhibitions. Care should be exercised in displaying the type of houses and providing information of the kind in demand by the buying and building public of today. It is a merchandising problem and must be recognized as such. The idea has possibilities that can be made available to every locality in the United States at the present time.

# NEW MATERIALS & EQUIPMENT

BRIEF REVIEWS THAT MAKE IT EASY TO KEEP IN TOUCH WITH THE PROGRESS MADE BY PRODUCERS



## Nailcrete Nailable Cinder Blocks

86M The Nailcrete Corporation, New York, has placed on the market hollow cinder blocks using asbestos in combination with cement and either sand or cinders as a nailable, fireproof unit. The blocks are steam treated and stated to effect a saving in plaster. When used to back up brick, stone or other exterior finish, furring is declared to be optional. Blocks are 8x8x16 inches in dimensions.

## New Oil Fired Steel Heating Boiler

87M A new oil fired steel heating boiler has been placed on the market by the Bass Foundry and Machine Co., Fort Wayne, Ind. It is of all welded steel construction and is intended to develop the maximum efficiency of the gun type oil burner.

## Ice Used in Room Cooler

88M The Chicago Pump Company, Chicago, has placed on the market a new room cooler which uses ice as a refrigerant. It is called the "Northern-Breeze"; warm air is cooled, dehumidified and washed as it passes through a special unit cooler. It is portable, electrically operated and runs from eight to fifteen hours on 300 lbs. of ice. Dimensions, 30" wide, 22" deep, 50" high.

## Rising Stem Bronze Gate Valve

89M A new rising stem bronze gate valve has been introduced by the Kennedy Valve Manufacturing Company, Elmira, N. Y. It is for 125 lb. steam pressure and 175 lb. water pressure.

## Automatic Storage Water Heater

90M An automatic storage water heater made of monel metal and stated to withstand a hydrostatic pressure of 400 pounds has been placed on the market by the Whitehead Metal Products Company, Inc., New York. It comes in six sizes with respective capacities of 20, 25, 30, 40, 50 and 60 gallons. The heater is automatic and is equipped with snap action thermostat to prevent overheating, and has an automatic safety pilot.

## Westinghouse Water Heater

91M A new line of water heaters has been introduced by the Westinghouse Mfg. Co., East Pittsburgh, Pa. They are finished in a white cordovan, grey-trimmed exterior. Two types are in the line—the automatic, single heater tank and the adapt-o-matic two heater tank. An adjustable thermostat allowing for a temperature range of from 130 degrees to 180 degrees has been installed. Made in 10, 30, 50 and 80 gallon capacities.

## New Duplex Thermostat

92M A new Duplex thermostat has been placed on the market by the Barber-Colman Company, Rockford, Ill. It is suitable either for general use as a two-temperature thermostat or for applications requiring control of double range circuits. The instrument is essentially two room type thermostat units mounted side by side and individually adjusted to any range between 60 degrees and 80 degrees by means of a lever and scale at the bottom of each unit. A manual or automatic switch may be used to change the thermostat at morning or evening, placing the proper unit in control of the heating equipment.

## Acidproof Sinks with Integral Drainboards

93M A new line of acidproof sinks with integral drainboards has been introduced by the United States Stoneware Co., New York. The sinks are made of chemical stoneware and are guaranteed acid, alkali and corrosion proof all the way through. They are molded in one piece. Finished with a dark brown glaze to insure easy cleaning.

## General Electric Introduces Oil Burning Furnace

94M A new type of oil burning furnace utilizing the heavy and less costly domestic fuel oils has been developed by the General Electric Company, Schenectady, N. Y. The new unit, completely assembled at the factory, is completely automatic; the entire apparatus is enclosed in steel. Supplies hot water in summer. A new principle of combustion is used, called progressive impact atomization. It is declared to be unusually economical in operation, according to a number of tests made last year in actual installations.

## New Finish for Exterior Painting

95M The Paint and Varnish Division of E. I. du Pont de Nemours and Company, Wilmington, Del., announces Dulux White, a new finish for exterior painting. The vehicle is a synthetic oil product new in the painting industry. Sets quickly.

To Get More Information, Use Post Card on "Catalog Insert" Preceding

New Night Light

76M The development of a night light for use in lighting stairways, stair landings, corridors, and hospitals has been announced by Curtis Lighting, Inc., Chicago. The unit consists of a box that will fit into a shallow partition 3" deep. The cover has a glass window through which light is directed onto the floor adjacent to the unit. A shutter controls the amount of light. Cover is installed flush with the wall. It is known as "Glo-Ray."

Copper Radiators

97M A new line of copper radiators for domestic, industrial and general heating purposes has been placed on the market by the Long Manufacturing Co., Detroit, a subsidiary of the Borg-Warner Corp. The new heating unit operates on low steam pressure. Most of the models are of the built-in-wall type.

New Paging System

98M A direct paging system for factories, offices, stores, garages, hotels, theaters, railway stations, hospitals, etc. has been announced by the Stromberg-Carlson Telephone Manufacturing Company, Rochester, New York. The equipment consists of microphone, amplifier and loud speakers. With the microphone at the telephone switchboard the operator can reach anyone in the plant.

Rustproof Paint

99M A new type of rustproof paint has been placed on the market by the Skybryte Company, Cleveland, Ohio. It is called "Rust-tox" and is claimed to be not only rustproof but, when used over rusted surfaces, to prevent further rusting. The product is colorless and transparent, though it may be pigmented if desired, and is a good vehicle for aluminum flakes. It may be brushed or sprayed on at any temperature above 35 degrees F. Resists acid fumes, smoke, salt air and oxygen.

Room Cooling Cabinet

100M An ice storage cabinet with an electric blower which circulates cooled air into the room has been placed on the market by the Modine Manufacturing Company, Racine, Wis. The device is called "Ice-Fan"; it draws air from the room, passes it through the ice-charged cooler where it is cooled, and delivers it to the room. It is also claimed to dehumidify.

## Period Collection of Salubra Wall Coverings

Wall covering, have introduced a new period collection of designs suitable for colonial work. This collection was developed from original sources. Some of the designs are exact reproductions of originals, others are interpretations embodying characteristic motifs of the various periods.

## Insulating Paint

1,600 volts of AC current has been placed on the market by the Eastern Mabelite Corporation, New York. The paint is stated to be acid resisting, heat resisting and to have remarkable abrasive qualities. It is also said to be a positive stop to electrolysis and corrosion.

## Concealing Bolt and Screw Heads

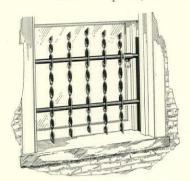
103M A new device called the "Crowner" has been placed on the market by the Rawlplug Company, Inc., New York, for the purpose of covering and concealing the heads of bolts and screws, thus sealing them against tampering. The device is a flat washer with multiple points projecting at right angles in such a manner as to give the appearance of a crown. The crowner is placed on the shank of the screw or bolt, which is then driven home. A special tool is placed over the projecting points and tapped with a hammer, which draws the points together over the center of the washer to form a smooth, hemispherical cap which conceals the screw or bolt head. The device is made of rustproof metal to match any desired finish.

## Protection Against Pilot Failure

a device which provides instant and positive protection against the escape of unburned gas or oil in the event of flame or pilot failure. It is called the Protectoglow and is made by the Minneapolis-Honeywell Regulator Company, Minneapolis, Minn., being entirely electric and without moving parts. A feature is that it can handle installations where conventional controls are inadequate. It operates through a tube which acts as an electrical relay and is capable of operating on an electric current passed through the flame; should the flame fail, the circuit through the flame is broken, instantly shutting off the gas or oil flow.

## New Window Guard

105M A window guard that does not damage woodwork or paint, that cannot be removed unless



unlocked with a key, and that does away with bolts, screws, etc., is called the "Shur-Loc" window guard and has been placed on the market by the Shur-Loc Window Guard Corp., New York. The guard is placed directly below the upper window sash, permitting the upper win-

dow to be lowered but a few inches, but not interfering with the operation of the lower sash.

To Get More Information, Use Post Card on "Catalog Insert" Preceding

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SMITH & WESSON SPRINGFIELD, MASS.

## Through Europe on a Bicycle

(Continued from page 13)

all at the table when we asked him for a speech. "I greet you" he said with the utmost good humor, "not as the crazy looking Frenchman which I overheard you calling me on the road this morning, but as a perfectly sane American citizen!" He was a great artist and had an unusually clear perception of the underlying essentials of beauty in nature and in architecture.

UR route took us to Paris, through the forests of Fontainbleau and Compeigne, down the valley of the Loire with its inimitable chateaux, and back through the picturesque hill towns of Normandy. At Caen we noticed signs of preparations for a celebration. The next day was a national fete day, the anniversary of the Republic. In the evening the fun began by the firing of cannon from the old fortress of William the Conquerer; the illumination of houses with lanterns and the display of French, Russian and even American flags. There was also a procession by a motley throng. All this fired our patriotism and we decided to have a procession of our own. So we purchased flags and lanterns, two of the boys obtained tin flutes and, with the Stars and Stripes and a big French flag in front, we paraded the streets of the dirty old town to the astonishment of the inhabitants.

This trip through France proved such a success that a few years later I decided to take another. This time there were four in our party and we again used bicycles, going to England first. Upon landing in Liverpool I found a telegram asking me to come to London to be an usher at the wedding of a friend. I departed hurriedly in my bicycle togs, and when I arrived found that the affair was to be a formal one with some of the English nobility present! However, I repaired to the Jewish quarter and rented the necessary clothes. So much do clothes that one habitually wears become a part of one's self that these rented garments seemed hardly attached to my body during the ceremony—and this feeling was augmented when my ill-fitting hat almost fell off while I was walking from the church to the carriage!

When returning north I stopped at Oxford, registered at a hotel for the night and settled myself at a table in the dining room. Presently a tall, athletic looking man came in, warmed his hands at the open fire and glanced around as if to decide where he would sit. Then he came to my table and asked if he might sit with me. He was cordial, talkative and interesting, and had an unmistakable English accent. But I could not put these two together and place his nationality. Finally I asked him, whereupon he laughingly said, "Well, I am an Englishman, but I was a cowboy on your western plains for two years and it took the edge off me!"

Starting from Liverpool our route took us first through Port Sunlight, then to Chester, and on to Oxford, Cambridge and London.

Not a paragraph, not a chapter, but a whole book one should have to describe a city like London, which for generations has been the abode of aspiring English writers, philosophers, painters, poets and statesmen. I will not attempt it here but proceed to relate some experiences which happened to us in Southern France.

One warm morning in Auxerre I started to sketch a church while sitting on a doorstep, full in the hot sun. Presently the blinds of a nearby window were opened and a woman peered out, asking whether it was not too hot to be doing that sort of thing and offering to have her two boys hold an umbrella over me while I worked. Soon they tired, however, and then the man of the house came out and disappeared down the street. Presently he returned. He was carrying two long poles, a ladder and a piece of sail cloth. These were placed up against the house and an awning built over my head! As I finished my sketch I overturned an ink bottle. The woman across the street brought water, soap and a towel with which to wash my hands, while he who had built the awning asked me to remain and partake of wine.

But it was not all like that. Mr. Pennell had excited the venturesome spirit in two of us to climb high in the mountains to La Chaise Dieu, which translated reads, The Chair of God. Peasants we met on the way asked us whether we were trying to ride up to the stars—push our way to them would have been putting it better, so steep was the ascent.

At noon we entered a village where we were such curiosities that children screamed with delight at the sight of us and rushed to tell their parents of the strange apparitions. The woman in the cafe who took our order walked backward so that she would not for a moment lose so strange a sight.

THE village church had a charming interior and we decided to sketch it. The curé came in, uncovered some furniture for us, and then departed leaving us alone. Time wore on. Suddenly I realized that someone had entered the church and was standing behind me. I turned and looked into the eyes of a gendarme. He asked for my passport and also asked many other questions. Finally, when my answers did not seem to be satisfactory, he ordered me to go with him to the station. There messengers were sent out for the rest of the town guards. When they arrived a most important parley was held. Half of them thought I was a German spy and should be detained for the night. The other half were for letting me go.

They were about evenly divided, so I saw that the psychological moment for saying something in my own defense was at hand. My French was terrible but I tried to tell them this: That I was travelling through France making sketches of its important buildings, that I had honored their town by including their church among the number, that I knew that these formalities were required by their duty, but if there was nothing more required, I would have the honor of bidding them good-day. Then I made a move toward the door. No one tried to stop me. I moved closer to it, bowed low, bade them good-day, opened the door—and went out!

My companion was packing up our things. When we went to get our wheels, mine, which I had locked, was there but his was gone! We could look down the street to the public square and noticed a large crowd gathered there. We promptly pushed our way through it and in its center found his wheel, with a Frenchman trying to

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such finely wrought glass need be expensive, the cost of Steuben Architectural Glass is decidedly reasonable; recently prices have been materially reduced.

You will find Steuben Architectural Glass described in Sweet's Catalogue, but for your own files we would like to send you our brochure, "Sculptured Architectural Glass by Steuben Furnaces," showing many of the proprietary Steuben designs of leading architects. Address Steuben Division of Corning Glass Works, Corning, New York.

Steuben Architectural Glass in intaglio, designed by Raymond Hood, Architect, New York, N. Y., for elevator cabs of the Daily News Building, New York, N. Y.

Steuben ARCHITECTURAL GLASS ride it! Needless to say we got out of that town as fast as we knew how.

At dusk we reached La Chaise Dieu. As we wound our way through the streets we were followed by children and also by a man who evinced unusual interest. Upon registering at the inn and ordering our dinner, the latter did likewise and secured a table close to ours. During the meal we noticed that if he were chewing his food when either of us spoke he would immediately stop chewing. The act of chewing, we reflected, interferes with hearing, so we knew that we were being shadowed. As we arose to leave the room he also arose, and as we were going out he placed his hand upon the shoulder of my friend and said in the strangest English I have ever heard, "I beg your pardon, gentlemen, but I have read English from books and teach English in the village school, but this is the first time

in my life that I have ever heard English spoken!"

He did not want us to go to bed and in the morning was waiting on the doorstep. He conducted us to the village church and insisted that the curé get all his special treasures to show us. When it was time to leave he accompanied us to the outskirts of the town and as we rode away—on a straight coast of nearly a mile—we could look back up the hill and see him watching until he was a mere speck in the distance!

After visiting Venice—going by rail—our trip ended with the resolve that we would soon do it again—and I for one did. So anxious was I to go again and that in some kind of company, that I loaned a fellow draftsman the wherewithal to go with me, giving him ten years in which to repay it. He took all of that for I still have his promissory notes! But then I had another glorious trip—and so did he!

## How To Make the Front Page

(Continued from page 33)

let us say, "It is a fallacy to assume that the employment of an architect is merely an added expense to the home builder," the article might have been arranged with this lead: "Local home builders who are engaging in their first building experience this year, which promises to establish a record for Blanktown, need to be reminded that the employment of an architect is a vital step,' said Mr. Christopher Wren D'Espouy, prominent local architect and director of the Blankville Chapter of the American Institute of Architects, who has recently returned from the Institute convention"—etc., etc.,—far into the night. This method gives the desired local angle, and also a local name. Names are the joy of an editor's heart; the more correctly spelled names he can get in an edition, the warmer his little heart glows.

NEWSPAPER reader in Kalamazoo gets very little kick out of reading about the honor awards in Philadelphia, numerous learned gentlemen to the contrary notwithstanding. However, if it were proposed to establish a system of honor awards in Kalamazoo, an incidental discussion of the way the system works in Philadelphia would be correct. It may possibly cover you with modest confusion to learn that your home town newspaper is more interested in you than in some plutocratic designer of skyscrapers who has the poor taste to live in some other town, but such is indeed the fact.

While I know only enough about the newspaper business to realize how very little that is, still it is possible that some of the things that have been profanely pointed out to me by more experienced journalists may be of use to architects who are engaging in the perfectly laudable enterprise of interpreting the profession to the public. I might call these suggestions: The Ten Commandments for the Architectural Publicist.

1. Give the building page editor a break. He will be much more inclined to slip in some of the promotion articles if you will see that he gets the routine news promptly and correctly. Remember you can get this information by telephoning your colleagues; he can't.

2. See that he has on file photographs of the leading architects of your town, and especially of the officers of your professional society. Most architects seem to have

a haunting fear that if they give a newspaper man their photograph he will enter it in a bathing beauty contest. This seldom happens.

3. Don't try to get the building industry entirely reformed this week; the papers will be coming out next week, too. In other words, don't try to tell it all in one long article; short articles will have more chance of conforming to the mechanical exigencies of the paper.

4. Don't call names; lumber dealers advertise; you don't.

5. Remember the local angle; almost any subject that occurs in the architectural field has some local application, or can be fitted to a local situation.

6. Every paper needs short fillers for its building pages, and "half a stickful" is better than no mention. Most articles submitted to newspapers are too long and must be cut. Do your own cutting on the long ones, and supply plenty of short fillers, too.

7. Be sure that illustrations submitted for newspaper reproduction will reproduce. Pen and ink is the best medium. If you must use water color drawings, have the renderer be careful with the yellows, which print black, and the blues, which usually print out. Black and white and sepia washes are always preferable to water color.

8. If you submit cuts to the paper, be sure that they are the right kind. Most newspapers use 60-screen cuts; find out what your paper uses.

9. If an architect's name is on a drawing to be reproduced, it should always be placed where it will not be trimmed off. Newspapers in order to get the building itself as large as possible in the cut, will always trim off most of the surroundings and sky. If your name is at the bottom of the drawing, it will probably disappear; put it as close to the building as possible.

10. Play fair with the papers; if there are competing papers, release it to both of them at the same time, with the release date marked on the copy or illustration. If one is a morning and the other an evening paper, alternate, giving each the first opportunity in turn. And finally, and first and foremost, don't high-hat editors or reporters. If they call you up at ungodly hours to ask you why Frank Lloyd Wright thinks the Chicago Fair will be a "Babylonian orgy of architecture." try to tell them. I did. See these grey hairs?

## PERSONALS

RICHARD J. NEUTRA has been engaged by the University of Southern California, Los Angeles, to give a graduate course in architectural design.

WALTER JOHN SKINNER, architect, formerly with Muirhead Shops, interior decorators, has opened an office at 952 Main Street, Bridgeport, Conn., for the practice of architecture and interior decoration. He desires manufacturers' catalogs.

J. YANNOPOULOS-CASSARIS, Rue Lycabettus 21, Athens, Greece, is interested in American building materials and wishes to get in touch with those exporting building materials to Greece.

FRANCISCO LEVY, architect, has moved from New York City to Lares, Puerto Rico. He would like to receive manufacturers' catalogs and samples.

STURGIS ASSOCIATES, Inc., has been organized for the practice of architecture as successor to the Office of R. Clipston Sturgis with offices continued at 120 Boylston Street, Boston. The organization is composed of William Stanley Parker, William B. Coffin, William Adams, S. Winthrop St. Clair, and Alanson H. Sturgis. R. Clipston Sturgis will maintain an association with the new organization as consultant.

OLLIVIER J. VINOUR, A. I. A., has opened a special consulting department at 915 Glennwood Ave., S. E. Atlanta, Ga. He desires manufacturers' catalogs and samples.

D. BURR DU BOIS has opened an office for the practice of architecture at 1134 North First Avenue, Tuscon, Arizona, with the mailing address of P. O. Box 2601, Tuscon.

LOUIS C. TIFFANY will, as president and art director of Louis C. Tiffany Studios Corporation, continue his activities in the field formerly covered by Tiffany Studios. His address is 46 West 23rd Street, New York.

ROBERT AND COMPANY, architects and engineers, Bona Allen Building, Atlanta, Ga., announce the appointment of J. Warren Armistead, Jr., A. I. A., as head of their architectural department.

HUDSON & HAMMOND, architects, have dissolved partnership. Mr. Hudson will continue his office at the present address, 760 Empire Building, Seattle, and H. G. Hammond will establish new offices at 4507 West Trenton Street, Seattle.

SKETCHES of modern homes were displayed for two days in the windows of the Rike-Kumler Department Store by members of the Dayton Chapter, A. I. A. The houses ranged in cost from \$4,000 to \$6,500, there being given the name of the architect, nature of materials suggested and estimated costs. No other articles were displayed in the main street window of the store. A number of inquiries resulted.



# This House Was Still Spotless White Five Years After It Was Painted

It is at Portland, Oregon, and belongs to Harry A. Herzog, who designed it, lives in it, and painted it five years ago with Cabot's DOUBLE-WHITE. He writes as follows:

"Five years ago, I built a little home for myself. The exterior is hand split cedar shakes and the chimney common brick. I used two coats of Cabot's DOUBLE-WHITE for the finish. Curiosity as to the lasting qualities of this material kept me from repainting as soon as I normally would.

"I recently made a careful investigation and I was unable to detect one spot on the shakes or bricks where the original material is exposed. The only signs of deterioration that I could detect were the powdering of the surface and the slight popping of a few of the brick joints—the utter whiteness of this material had not been in the slightest lost—I intend to give it but one additional coat and see how long that is going to last. The clean whiteness of the exterior is always a pleasure to me and a source of wondering comment to all who see it."

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## NEW BULLETINS

SAFETY FOR THE HOUSEHOLD. Illustrated bulletin issued by the Bureau of Standards, Washington, D. C. Purpose, to emphasize the seriousness of certain risks frequently occurring in or about the home, to give simple methods of care and caution to protect life and property from such hazards, and to stimulate interest in public measures to provide safety for the household and the community. For sale by the Superintendent of Documents, Washington, D. C.

STRENGTH OF LIGHT I-BEAMS. Report of an investigation conducted by the Engineering Experiment Station of the University of Illinois in cooperation with the Jones and Laughlin Steel Corporation. By Milo S. Ketchum and Jasper O. Draffin. Published by the University of Illinois, Urbana, Ill. Price, 25 cents.

DURABILITY OF SLATES FOR ROOFING. Bulletin No. 12 published by the Department of Scientific and Industrial Research, 16 Old Queen Street, Westminster, S. W. 1., London. Obtainable in the United States at the British Library of Information, 270 Madison Avenue, New York. Price 4d net.

SCHOOL OF CITY PLANNING and City Planning as a Professional Career. By Henry V. Hubbard and Howard K. Menhinick. Description of course at Harvard University. Published by the University at Cambridge, Mass.

SCHOOL OF LANDSCAPE ARCHITECTURE. Discussion of course offered at Harvard University, Cambridge, Mass.

#### DEATH OF DR. GEORGE K. BURGESS

R. GEORGE K. BURGESS, for nine years director of the Bureau of Standards, died July 2. He entered government service over twenty-five years ago as assistant physicist. He was in the front rank of metallurgists and his work in this field during the world war won him nation-wide recognition. Born in Newton, Mass., 1874, he graduated in 1896 from the Massachusetts Institute of Technology with the degree of B.S. His Sc. D. was received from the University of Paris. On returning to this country, Dr. Burgess taught physics at the Massachusetts Institute of Technology and later at the University of Michigan. His experiments with the late Dr. C. W. Waidner blossomed into the Waidner-Burgess standard of light by which the illumination of lighting equipment could be measured with exactness. His work in pyrometry laid the foundation for the now widespread use of high temperature measurements by American industry.

Dr. Burgess served as an expert on the International Aircraft Board of the Allies and later became a member of the National Advisory Committee on Aeronautics. He was the author of a number of books. In 1927 he was a delegate to the International Conference on Weights and Measures in Paris and two years later went to Tokio as a delegate to the World Engineering Conference.

## Stock Plans for Brick Houses

RITICISM has frequently been directed against the Common Brick Manufacturers' Association because of its making available stock plans. An explanation is printed in the May-June issue of the Association's organ, "Building Economy." This explanation has much to commend it for, unfortunately, there is altogether too much truth in the statements made. It reads, in part, as follows:

"The weakness in the architect's position is that, generally speaking, he has made no serious attempt to sell himself, his services and his profession, to the builders of small homes. He has yet to convince this type of prospect that his services are worth the fee he asks. And that the building contractor isn't capable of doing the job as well.

"Small home builders as a rule do not bother about architects. They haven't been impressed, educated, if you will, to the need of one. Their meager knowledge of construction is culled from the magazines. Their ideas of design, and frequently their choice of plan and type of home, come from the same source. And they place a child-like trust in the contractor.

"The architect has willfully and flagrantly neglected this field. In our own case a plan service became an imperative part of our promotional effort. House plans were necessary if small brick houses were to be built. And the architects weren't worrying about whether they were being built at all, much less whether they were being built of brick.

"It is encouraging to note that in many cities today the local institutes are busying themselves in an effort to sell architecture to the public. It is equally unfortunate that they were half a century late in beginning. And incidentally through their own bureau the national organization is offering a service of better than the average stock plans.

"The small house field is becoming increasingly important. Upon it right now depends largely the revival of the construction industry. When the architect comes to realize its possibilities there will be less building of houses haphazardly by so-called jerry builders, more of real architecture in this type of home and, let's hope, no need for the objectionable stock house plan.

"A forward step in this direction is provided by the recommendations of the committee on design of the President's Conference on Home Building and Home Ownership which found that the average small home is defective in design and too frequently poorly built. The committee made some very pertinent suggestions regarding design, construction and the responsibilities of architects, especially in the small home field. The architects have the solution of the stock plan problem in their own hands.

THE Ion Lewis Scholarship in Architecture, offered by the University of Oregon, was this year awarded to Henry Abbott Lawrence.

ORE than 20% of American homes will be mechanically cooled within the next five years, according to C. H. Landwehr, president of the Holland Furnace Company.

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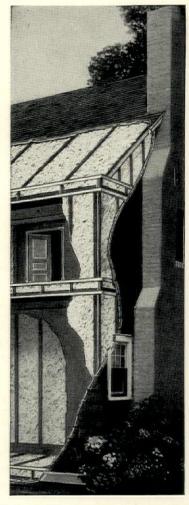
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## What Architects Are Talking About

(Continued from page 35)

will be called upon to decide whether cooperation between individual business concerns in an industry looking toward stability, based upon reasonable prices, violates the Sherman Anti-Trust Law or the Clayton Act. There are many who feel that it should be illegal to sell below the cost of production and particularly for the purpose of injuring a competitor, and that more flexibility be incorporated in existing laws to apply in times of depression or national emergencies."

HAVE always felt that a well designed house of the same area and general specifications was worth a larger loan than a similar house without these qualifications because the former is more salable than the latter, and salability is one of the biggest factors to consider in appraisals, and if a house is salable, it reduces the possibility of foreclosure tremendously." That is the opinion of Frederick R. Peake, vice president and manager of the Community Building and Loan Association, Berkeley, Cal.

ARBLE and other stones are exported from Italy principally to the United States, France, Germany, Great Britain and Belgium. According to "The Italian Exporter," nearly 200,000 tons of rough marble were exported in 1929 as compared with 115,000 tons in 1931. Approximately 72,000 tons of building stone were shipped in 1929 and 45,000 in 1931. Slate fell off about 3,000 tons in 1931 as compared with 1929, which totaled a little over 9,000 tons.

CLOUGH WILLIAMS-ELLIS, F. R. I. B. A., will give a series of lectures in the United States this coming fall, according to the Institute of International Education, New York, which is arranging his speaking tour. The lectures will discuss the function of architecture and the importance of design in civilization.

THOSE who claimed that the new Class 2 construction in the new New York City building code was unsafe were confounded at a fire test recently conducted.

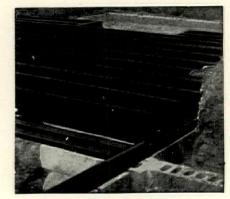
This class permits light steel joist construction in Class 2 buildings.

PREDETERMINATION of the prevailing rate of wages to be paid on all government construction work is provided for in the Metcalf Bill, which has passed both Senate and House of Representatives. The main purposes of the bill are to guarantee to mechanics on Federal public works payment of prevailing wages as provided for in the Davis-Bacon Act; to predetermine the prevailing wage so that the contractor may be able to bid with an intelligent understanding of what his labor cost will be; to penalize the contractor who pays less than the prevailing wage or who causes mechanics to refund part of their wages, and to require the government to pay prevailing wages on all construction work performed by the government with hired labor.

THE 1932 Paris Prize Competition offered annually by the Society of Beaux-Arts Architects was won by Richard H. Granelli, a draftsman with Schultze & Weaver. Medals were awarded to Max Abramovitz, New York (who was selected as alternate) and to Theobold Holsopple, Washington, D. C. The fourth finalist was Maurice Kleinman, Chicago. The competition was for an opera house to serve the national capital and to be situated in a public park.

EDERAL construction of post offices in towns of over 2,500 is proposed by the Registered Architects of Oregon. According to the plan, the building would house all activities of the Federal service. It is pointed out that where an annual rental of \$600 is paid, a \$15,000 building could be afforded on the basis of 3% interest, 2% amortization and 1% repairs, the building being completely amortized in fifty years.

A STUDY of style changes was recommended to the Porcelain Enamel Institute by R. Guy Cowan, who pointed out the necessity for cooperating with the makers of linoleum and kitchen furniture. He said that the designers and makers of women's costumes have been cooperating for years, as when a new color or style in



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Plants—Carbondale, III., Grenada, Miss., Louisville; Ky., North Little Rock, Ark., Montgomery, Ala. Marine Ways—Paducah, Ky. dresses comes out, at the same time are offered for sale all the accessories that go to make up the modern costume ensemble—shoes, hats, jewelry, stockings, etc. "So I suggest that individually or as a group you work with the other fellows to present the kitchen as an ensemble."

STUDY of the physical and chemical characteristics of Pennsylvania building stones and Pennsylvania slate is being undertaken by research workers under the Greater Pennsylvania Council, a state planning organization, Harrisburg, Pa. The chairman of the technical advisory committee is William A. Hamor, Mellon Institute of Industrial Research, Pittsburgh.

THE Forty-eighth Annual Exhibition of the Architectural League of New York will be held at the 57th Street Galleries February 17 to March 11, 1933. The final date for reception of exhibits will be February 6. Arthur Loomis Harmon is chairman of the committee in charge.

A N exhibition of the summer work of members of the Architectural League of New York will be held at League headquarters beginning October 6. Work will consist of sketches in black and white or color, photographs or work in the crafts. Leon V. Solon is chairman of the committee in charge.

A LIST of architects to be suggested for consideration in church work is being assembled by the Bureau of Architecture of the Methodist Episcopal Church. Architects who wish to have their name placed on this list should address the director of the bureau, Rev. E. M. Conover, 1701 Arch Street, Philadelphia. Ten cents should be enclosed with the request for blanks. Only architects who have practiced for at least five years should apply.

THE Ninth Paris Prize in Sculpture of the Beaux-Arts Institute of Design, New York, was awarded to George J. Sklar. Ray Wever and Gabriel Kohn tied for second place. Fourth place went to Walter Yoffe, fifth place to Otto G. Dallmann, sixth place to Charles O'Donnell.

SOVIET "radio city" is planned and the Russian government expects to inaugurate a world wide contest for the best design for the radio center. There will be 43 studios for broadcasting in addition to studios equipped for television.

FFICERS of the American Society for Testing Materials have been elected as follows: President, Cloyd M. Chapman, consulting engineer; vice president, William H. Bassett, metallurgical manager, the American Brass Co.

A N interim revision of the National Electrical Code, covering non-metallic surface extensions, has been adopted by the American Standards Association, New York City.

THE Associated General Contractors of America has gone on record as recommending the "One Price System" to reduce price padding and bid peddling.



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## How To Design Stone Lintels

(Continued from page 29)

14½" should be used. If selected stone is used with the bed horizontal, the depth may be reduced to 12". Note that the weight of the lintel itself has been deducted in the tabular values and need not be considered.

Since a wall will arch over an opening if the height of masonry above the lintel is more than one half the length of the span, the load carried by the lintel, in that case, is the weight of the triangular section of the wall resting on it. The effect on the lintel, however, is somewhat more than the same load uniformly distributed, because of its triangular distribution. The equivalent uniformly distributed load is about equal to the weight of a wall one-third as high as the length of the lintel.

The depths of lintels required in such cases, where arching occurs, can be read at once from Table V without calculating the loads. The table is based on brick masonry weighing 120 lbs. per cubic foot. When arch action is not certain, the load carried should be estimated and the lintel selected from Tables I, II or III.

Stone lintels are used commonly in connection with steel lintels and cracks frequently result from a lack of understanding of how stone and steel act in combination. In fact, it is almost impossible to divide the load. Either the stone carries the entire load and the steel lintel acts merely as a form or centering, or the load is carried by the steel and the stone cracks, if it is in one piece, or opens at the joints, if it is in several pieces. The latter is a safer arrangement, as most of the settlement occurs during building, while the mortar is soft and the opening of the joints do not show as cracks.

HIS will be made clear by considering the simple case shown in Fig. 1. It is obvious that whatever deflection there is, must be equal in the stone and steel lintels. It can easily be shown from the characteristics of the materials and the laws of mechanics that the stress in the steel is about five and one half times that in the stone irrespective of the load or span, if the stone is Indiana limestone. Other stones would not differ much from this. Therefore, when the stress in the stone is just sufficient to crack it, say 1000 lbs. per sq. in., the stress in the steel will be 5500 lbs., or less than a third of the usual working stress. It is evident that if the steel has been designed for a fibre stress of 18,000 lbs., the stone will crack long before the steel has reached that load. A stone lintel of this type should have sufficient depth to carry the entire load, the steel lintel acting merely as a form for a few courses of brickwork.

If the stone facing is carried on the steel, as shown in Fig. 2, the stone should always be jointed to allow for a slight settlement and the steel lintel in this case should be designed for not more than three-quarters of its safe structural load. The deflection of 1/30 of an inch per foot of span, usually allowed in structural steel design, does not apply to steel members carrying stone facings. This limit is only safe for plastered ceilings.

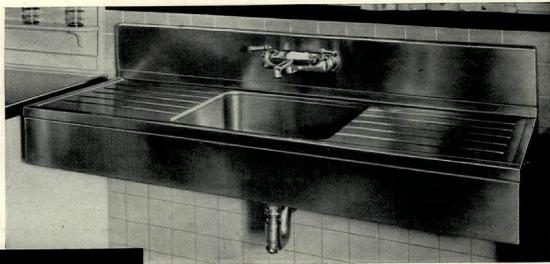
Architectural design sometimes requires a lintel or transom to be in one piece and at the same time limits the depth to a size that will not of itself safely carry the superimposed load and its own weight. A common case of this is the architrave above the columns of a portico with a pediment or attic wall above it. If the span between the columns is too wide for the depth of the architrave acting as a lintel, it appears to be a simple solution to put in a steel beam to "help" carry the load. This is impossible, unless the steel is made very strong.

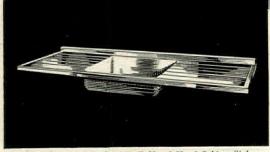
S an example, suppose a limestone lintel has a span of 16'-0" and a depth of 20" and the load carried, including the weight of the lintel, is 1200 lbs. per lineal foot. A 12"B25 lbs. would safely carry the load, from the standpoint of the steel, but the deflection would cause the stone to crack. To carry the stone without stressing it beyond a safe limit, the beam must be a 20"B 88 lbs. The best procedure in this case is to joint the stone and hang the blocks from the steel. If the lintel must be in one piece, a size must be selected that will at least carry its own weight and the steel and superimposed masonry be so designed and set that none of the weight will come on the stone lintel. This requires care in detailing and supervision but can usually be accomplished by leaving a space between the stone lintel and the steel and an open joint above the lintel to be pointed only after all the load has been applied and the steel member is fully stressed. The safest plan is to leave pockets for the bearings of the lintel and slip it into place after all other work is built, if feasible.

It is a fallacy to try to make steel and stonework act together. It is uneconomical and frequently disastrous as well.



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