NA
A52

THE AMERICAN ARCHITECT

PUBLISHED WEDNESDAYS IN NEW YORK
FOUNDED EIGHTEEN HUNDRED SEVENTY SIX
VOLUME CXVII FEBRUARY 18, 1920 NUMBER 2304

PENNSYLVANIA HOTEL,
NEW YORK
Architects:
McKim, Mead & White

Equipped with:
12 Otis 1:1 Gearless Traction Passenger Elevators.
7 Otis 1:1 Gearless Traction Service Elevators.
1 Otis Worm Gear Traction Baggage Elevator.
4 Otis Worm Gear Traction Passenger Elevators.
3 Otis Drum Type Freight Elevators.

"ELEVATORS—OTIS"

ndum for a specification which the
e him no worry either during con-
has been completed.

is based on knowledge that an Otis
ility in design and construction and
ate with a smoothness and economy
f his choice from every point of view.

dth and depth of experience in ele-
period of more than sixty-five years,
ery Otis employee is that the pre-
petuated.

TOR COMPANY
wenty-sixth Street, New York
ipal Cities of the World

946522

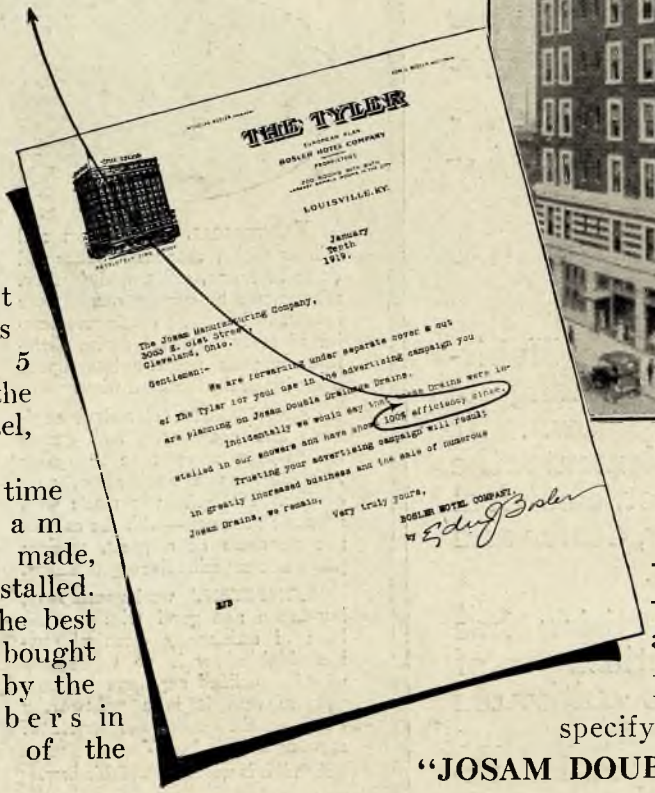
P.P

The American Architect, published weekly at 243 West 39th Street, New York, N. Y. Entered as second class matter January 6th, 1909, at the Post Office at New York, N. Y., under the act of March 3rd, 1879. Subscription price in the United Statesvand Possessions, $10.00 per year. Issue No. 2304 dated February 18th, 1920.

Американский архитектор
85.11
A47

---"100% efficiency since".

Tyler Hotel—Louisville, Ky.
Architect
D. X. Murphy & Bro.


THE TYLER
LOUISVILLE, KY.
January 26th, 1919.
The Josam Manufacturing Company,
3000 E. 61st Street,
Cleveland, Ohio.
Gentlemen:-
We are forwarding under separate cover a cut
of The Tyler for your use in its advertising campaign you
are planning on Josam Double Drainage Drains.
Incidentally we would say that Josam Drains were in-
stalled in our showers and have shown 100% efficiency since.
Trusting your advertising campaign will result
in greatly increased business and the sale of numerous
Josam Drains, we remain,
Very truly yours,
BOSLER HOTEL COMPANY,
By Edward J. Bosler
EJB

The first Josam Drains were installed 5 years ago, in the Brevoort Hotel, St. Louis.

Since that time 153,436 Josam Drains were made, sold and installed. Specified by the best Architects — bought and installed by the best Plumbers in every section of the Country.

A Josam-ized Job is an asset —never a liability. Once installed —Josam Drains need no further attention.

Protect your client's interests by specifying absolute leak-insurance

"JOSAM DOUBLE DRAINAGE DRAINS."

There is a "JOSAM" for every installation wherever there is a ceiling below.

Write for Catalog No. 3—You Need It!!

The Josam Mfg Co.

MICHIGAN CITY, IND.

Formerly CLEVELAND, O

NEW YORK	CLEVELAND, OHIO	CHICAGO, ILL.	ST. LOUIS, MO.	SAN FRANCISCO, CALIF.
7 West 45th Street	3063 E. 61st Street	Insurance Exch. Bldg.	317 De Baliviere Ave.	1002 Merchants Nat'l Bank Bldg.

946522
ЦЕНТРАЛЬНАЯ ГОРОДСКАЯ ПУБЛИЧНАЯ БИБЛИОТЕКА им. Н. А. НЕКРАСОВА
ОТД. ИСКУССТВА И ИЗОБРАЗИТЕЛЬНОЙ ПРОДУКЦИИ

HABIRSHAW

"Proven by the test of time"

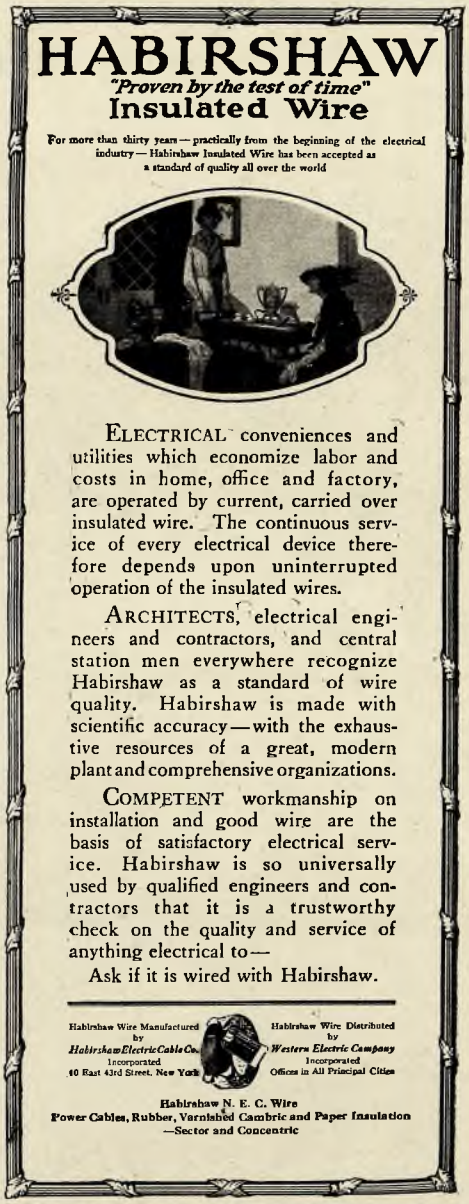
Insulated Wire & Cable

THE advertisement reproduced here is representative of the Habirshaw policies in public advertising. It appeared in Saturday Evening Post and other national media.

ADVERTISING adds to Habirshaw value by making its qualities publicly known. It supports and supplements the work of the architect, electrical engineer, contractor, dealer and central station man.

Habirshaw advertising has promoted general utilization of electric power—has cultivated the acceptance of higher standards in material and workmanship.

Habirshaw has built success on the basis of co-operation with the electrical industry.


HABIRSHAW

"Proven by the test of time"

Insulated Wire

For more than thirty years—practically from the beginning of the electrical industry—Habirshaw Insulated Wire has been accepted as a standard of quality all over the world

ELECTRICAL conveniences and utilities which economize labor and costs in home, office and factory, are operated by current, carried over insulated wire. The continuous service of every electrical device therefore depends upon uninterrupted operation of the insulated wires.

ARCHITECTS, electrical engineers and contractors, and central station men everywhere recognize Habirshaw as a standard of wire quality. Habirshaw is made with scientific accuracy—with the exhaustive resources of a great, modern plant and comprehensive organizations.

COMPETENT workmanship on installation and good wire are the basis of satisfactory electrical service. Habirshaw is so universally used by qualified engineers and contractors that it is a trustworthy check on the quality and service of anything electrical to—

Ask if it is wired with Habirshaw.

Habirshaw Wire Manufactured by *Habirshaw Electric Cable Co.* Incorporated 10 East 43rd Street, New York

Habirshaw Wire Distributed by *Western Electric Company* Incorporated Offices in All Principal Cities

Habirshaw N. E. C. Wire
Power Cables, Rubber, Varnished Cambric and Paper Insulation
—Sector and Concentric

Habirshaw Wire Manufactured by
Habirshaw Electric Cable Co.
Incorporated
10 East 43rd Street, New York

Habirshaw Wire Distributed by
Western Electric Company
Incorporated
Offices in All Principal Cities

Paper Insulated Cable
Round Conductor Cables
Sector Cables

Varnished Cambric Insulated Cables
Armored Cables

Rubber Insulated Cables
Code (Black Core)
Intermediate (Red Core)
30% Hevea R. S. A. Standard

Carey ROOFINGS

THE GUARDIAN TRUST CO.
DENVER, COLO.

are invested in by the most cautious investors.

BANK OF BUFFALO
BUFFALO, N.Y.

FRANKLIN LIFE INS. CO.
SPRINGFIELD, ILL.

WESTERN & SOUTHERN LIFE INS. CO.
CINCINNATI, OHIO.

SEE OUR CATALOGUE IN SWEET'S

THE judgment of an architect or a banker client who selects Carey Roofing is supported by *precedent*, by favorable public *opinion*, and by a splendid record of Carey Roofing *performance*.

Carey Roofings are used on hundreds of the very finest banks and insurance buildings in all parts of the country.

Carey Roofings are favorably known in every section. They are advertised nationally in a way that places the maker squarely behind his products.

Carey Roofings applied thirty years ago are giving good service today, proving durability by concrete example.

Carey specification Number 4 is a popular one for the type of buildings illustrated.

There are several Carey built-up specifications. There are Asfaltslate Shingles—Carey Roll Roofings—in fact, a roof for every type of building. Ask for Specification Book.

THE PHILIP CAREY COMPANY
505-525 Wayne Ave., Lockland Cincinnati, Ohio
50 Branches and Distributors

Arch-20-4

Office
Quartered White Oak

Residence of
C. A. Carlisle,
South Bend, Ind.
Hiss & Weekes
Architects

When a firm of standing and repute has established an unbroken record of work well and truly done, it can lay just claim to the confidence of architect and client.

MATTHEWS BROTHERS MANUFACTURING COMPANY
MILWAUKEE
WISCONSIN
FINE WOODWORK
52 VANDERBILT AVE
NEW YORK

Woodworkers for over 60 years

The AMERICAN ARCHITECT

CONTENTS

Vol. CXVII No. 2304

WEDNESDAY, FEBRUARY 18, 1920

Owned and Published by
THE ARCHITECTURAL AND BUILDING PRESS, INC.
No. 243 West Thirty-ninth Street, New York

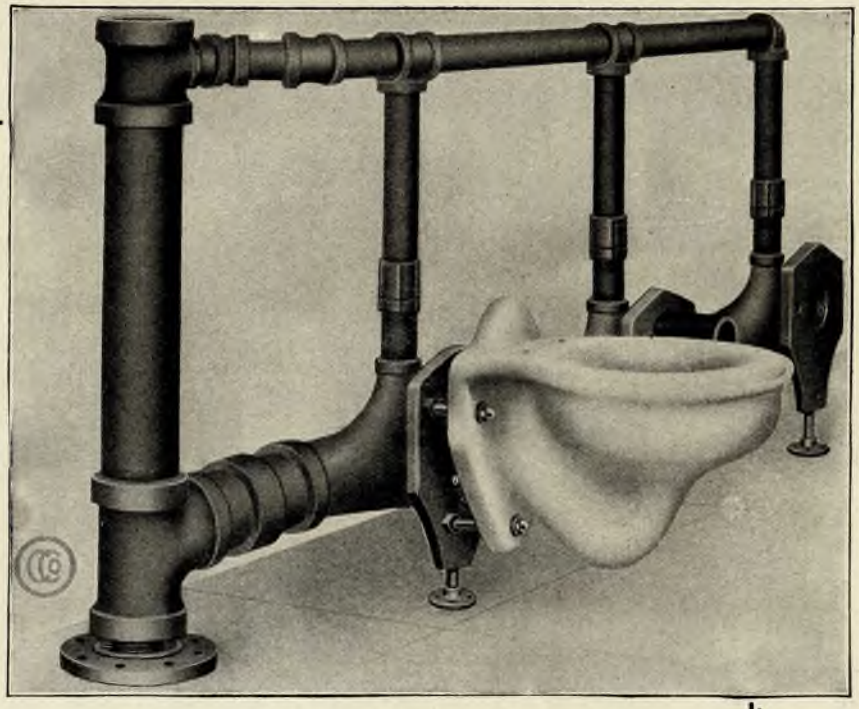
E. J. ROSENCRANS, President and Treasurer
FREDERICK S. SLY, Vice-President

WILLIAM H. CROCKER, Editor
EDWARD F. HAMMEL, Engineering Editor
ARTHUR T. NORTH, Western Editor
NATHANIEL SHAW, Associate Editor

Board of Directors
H. J. REDFIELD
E. J. ROSENCRANS H. M. SWETLAND G. E. SLY
FREDERICK S. SLY WILLARD C. HOWE

CHICAGO, Mallers Bldg., Page A. Robinson, Western Manager CLEVELAND, Guardian Bldg. SAN FRANCISCO, 320 Market St.
Subscriptions in the United States and Possessions, Mexico and Cuba, Ten Dollars. Other Countries, Twelve Dollars. Payable in New York Funds. Single Copies (Regular Issues), 25 Cents.

4 fittings in 1



CRANE
Drainage Fittings

Adaptable for buildings of reinforced concrete construction.

When these fittings are used in connection with wall hung closets it is not necessary to cut the floors, as the horizontal waste line is entirely above the floor.

These fittings, as illustrated, are tapped for the closet connection at different distances from the center of the run, so that when the closets in a battery are set in line and the fittings placed in consecutive order according to the tapping numbers given them, the waste line is given a pitch.

Each fitting takes the place of a drainage tee, nipple, "Y" and yoke, required when regular fittings are used, which reduces the number of joints for each closet and simplifies the piping, making **four fittings in one.**

SALES OFFICES, WAREHOUSES AND SHOWROOMS:

BOSTON, SPRINGFIELD, BRIDGEPORT, ROCHESTER, NEW YORK, ALBANY, BROOKLYN, PHILADELPHIA, NEWARK, CAMDEN, BALTIMORE, WASHINGTON, SYRACUSE, BUFFALO, SAVANNAH, ATLANTA, KNOXVILLE, BIRMINGHAM, MEMPHIS, LITTLE ROCK, MUSKOGEE, TULSA, OKLAHOMA CITY, WICHITA, ST. LOUIS, KANSAS CITY, TERRE HAUTE, CINCINNATI, INDIANAPOLIS

FOUNDED BY R. T. CRANE, 1855

CRANE CO.

836 S. MICHIGAN AVE.

CHICAGO

WORKS: CHICAGO AND BRIDGEPORT

DETROIT, CHICAGO, ROCKFORD, GRAND RAPIDS, DAVENPORT, DES MOINES, OMAHA, SIOUX CITY, ST. PAUL, MINNEAPOLIS, DULUTH, FARGO, WATERTOWN, ABERDEEN, GREAT FALLS, BILLINGS, SPOKANE, SEATTLE, TACOMA, PORTLAND, POCATELLO, SALT LAKE CITY, OGDEN, SACRAMENTO, OAKLAND, SAN FRANCISCO, LOS ANGELES

CRANE LIMITED MONTREAL, TORONTO, WINNIPEG, CALGARY, VANCOUVER, SYDNEY, N. S. W. LONDON, ENG.

Фундаментальная
Библиотека
Военно-Инженерной Академии
Р.К.К.А
Инвентарь № 19867

OLD CITY GATE, CORDOBA.

THE AMERICAN ARCHITECT

VOL. CXVII WEDNESDAY, FEBRUARY 18, 1920 NUMBER 2304

Фундаментальная Библиотека Военно-Инженерной Академии Р.К.К.А. Инвентарь № 19862

Competition for a Stadium on the Lake Front, Chicago

An unusual architectural competition has been held recently in Chicago. It was unusual in the subject, a stadium; unusual in the size, to seat 100,000 persons at maximum capacity. It is only with the increasing popularity of athletic sports that stadiums have become a necessity for carrying on such enterprises. So popular have they become that tremendous audiences congregate to view the major sports. In the larger cities baseball parks with a capacity of 20,000 to 35,000 spectators are common. These are taxed to their utmost when star attractions are played. Football stadiums have been erected that will seat 60,000 spectators and at many universities are found those of 15,000 to 25,000 capacity.

The war, with its great parades, has given the people a taste for pageants. This is a very desirable thing because the American people have not possessed a proper desire for such forms of spectacular amusements. Perhaps we will now absorb somewhat of the spirit of many of our foreign born citizens and rightly enjoy the *fête*. Great pageants, illustrating phases of American history, would not only be illuminating to our foreign born brothers, but might be as much so to many of the native American stock. These festivals have another value in creating enthusiasms and in stimulating the imagination along proper channels.

The need of such a structure in Chicago has been realized for a long time. After several years of consideration and discussion a dual arrangement has been made between the City of Chicago and the South Park Commissioners of Chicago. Under this agreement the City of Chicago is to furnish the funds with which to construct the stadium and the South Park Commissioners are to furnish the site, maintain and operate the stadium. The site is on made ground immediately south of the Field Museum, which is at the southern extremity of Grant Park. The new park system of filled in lands, lagoons, bridges, etc., will extend from Grant Park south to the Hyde Park district, the entire system to be constructed by filling in portions of Lake Michigan along the shore line. This system of lakeside parks and drives will extend then for a distance of about eleven miles, from the southern end of Jackson Park to the northern extremity of Lincoln Park on the north. The only interruption will be a short distance of about one and one-half miles of North Michigan Avenue, devoted to high class stores, office buildings and hotels.

The new stadium will be nearly midway in this extensive park system and easily accessible to western portions of the city. It will be the geographical center of the finest and most extensive system of parks and boulevards in the world.

The stadium will be unusual in its seating capacity, a maximum of 100,000 and an ordinary of 60,000 persons. It is not easy to visualize a seated audience of 100,000 persons surrounding an arena capable of accommodating many thousands of persons at a time. There is a demand for such structures and Chicago will soon be able to stage outdoor events with better facilities than any other city in the world. With its fine summer climate, due to its location on Lake Michigan, it will be the great rendezvous for summer events on land and water and in winter unexcelled for winter sports.

The competition was held under the direction of the South Park Commissioners under the program as here given. Invitations to compete were extended to Edward H. Bennett and William E. Parsons, Coolidge and Hodgson, Zachary T. Davis and William F. Kramer, Holabird and Roche, Jarvis Hunt, Marshall and Fox.

These six competitors are all of Chicago and well represent the architectural profession in that city.

The Park Commissioners invited a jury to make the award, consisting of Prof. A. A. Stagg, Physical Director, University of Chicago; Martin A. Ryerson; J. F. Foster, General Superintendent, South Park Commissioners; Richard E. Schmidt of Schmidt, Garden and Martin; Peirce Anderson of Graham, Anderson, Probst and White.

Copyright, 1920, The Architectural & Building Press (Inc.)

Mr. Anderson was chosen by the competing architects. Two of the five jurors were architects, Messrs. Schmidt and Anderson.

The Competition Program

Professional Adviser.

The owner has appointed D. H. Perkins, architect, 814 Tower Court, Chicago, professional adviser for this competition. He has been directed to prepare this program and to give such assistance and interpretation as may be required, either by the owner, the competitors, or the jury. He will confer with the jury but he will have no vote.

Anonymity.

No design will be considered, the drawings or wrappers of which bear any note or mark revealing their authorship. All drawings shall be wrapped in a plain cover on which the words "Stadium Competition" and none other shall be printed. A plain sealed envelope enclosing the author's card shall be attached to the outside of the wrapper.

On the day set for their delivery the professional adviser will engage an expressman, who shall call at the office of each competitor, receive the drawings and deposit them in a vault in the Art Institute of Chicago.

At the first meeting of the jury the adviser will open the wrappers, put a number on each envelope and a corresponding number on each drawing, in the presence of the jurors. The adviser shall retain the envelopes containing the authors' cards, with seals unbroken until the jury has made its award, after which the envelopes shall be opened in the jurors' presence and the authors' names announced.

Return of Drawings.

Within one week after the award all drawings except those of the successful competitor will be returned to their authors. If the owner desires a public exhibition of the entire number of drawings he will so advise the competitors and if their consent is given they will be exhibited and published.

One Design.

No competitor will be allowed to submit more than one design in this competition.

Communications.

All communications and inquiries relating to this competition by the competitors shall be in writing and shall be addressed to the professional adviser. He will send answers to all such inquiries to each competitor, together with copies of the questions.

No such communication received after thirty days from the date of acceptance by all of the competitors will be answered. Competitors will be advised of this date.

Time.

All drawings must be ready for collection on or before November 22, 1919. The jury will make its award on or before December 6, 1919.

Award.

The award to the author of the design adjudged the best by a majority of the jury shall be a commission from the owner to prepare working plans and specifications after the competitive sketches have been revised by the architect and approved by the owner.

To each of the other five competitors a cash payment of $1,000 shall be made within one month from the date of the award of the jury.

Agreement.

The stadium when constructed will be erected by the owner. The architects will not be required to procure contractors' bids, nor to supervise construction. The owner may desire consultation by the architect during construction, in which case a proposition covering such services will be requested.

In consideration of the submission of drawings in this competition the owner agrees to enter into a contract for professional service with the successful competitor within thirty days from the date of the award by the jury.

This contract, among other items, shall contain the following provisions, namely:

That "professional service" shall include the revision of the competitive sketches to conform to suggestions and requests by the owner, thereby making preliminary studies of design complete enough to form a basis for working drawings; also, the preparation of working plans, specifications, scale and full-size details and diagrams for all structural or ornamental work as well as all mechanical engineering work required for the complete construction of the stadium. This shall include diagrams and specifications for all foundation work, superstructure, heating and lighting so that the owner may be able to start construction immediately upon receipt of the same without further architectural or engineering service.

The owner shall make a statement of changes or revisions, if any are desired in the competitive sketches, within ninety days from the signing of the contract, and the architect shall submit revisions if requested within ninety days from the receipt of such instructions from the owner.

The owner agrees to pay the architect the sum of $5,000 for the revised preliminary studies of design within thirty days from their receipt and to give his approval of the same and his order for working plans within the same period.

The owner agrees to pay for complete plans, specifications, mechanical diagrams and scale and full-size details a fee equal to 3½ per cent on the cost of the stadium, less the previous payment for preliminary studies, when the working drawings and specifications are delivered.

Grading, road construction, filling, planting and other landscape work shall not be included in computing the cost basis for the architect's fees.

Should the owner and the architect be unable to agree upon the proper cost of the structure for the purpose of computing the fee of the architects, such cost shall be determined by arbitration by three arbitrators, one selected by the owners, one by the architect and the third by the two thus chosen.

Site.

The site for the stadium lies on the lake front, south of the Field Museum, east of the Illinois Central right-of-way, west of South Park Avenue, extended and north of Sixteenth Street extended. A plan of the grounds and environs accompanies this invitation.

The site for automobile parking lies south of Sixteenth Street, between the Illinois Central and South Park Avenue.

The ground surface at the north shall be grade 31. It shall slope or step down to grade 15 at Sixteenth Street. The arena will be level at grade 7.

Description.

The proposed stadium shall consist of an open amphitheater for spectators surrounding (wholly or partially) an arena. It shall be so arranged that large numbers of people may view processions, pageants, military maneuvers,

concerts, outdoor dramatics, athletic contests, track meets, horse shows, fairs, winter sports, ice carnivals, etc., etc.

Construction.

The construction shall be of fire and weather resisting material.

The design and structure must be up to or better than the standards which would be required under the Chicago building ordinances if this building were under the jurisdiction of the Building Department.

General Arrangement.

South Park Avenue will be at grade 31 at the southeast and southwest corners of the museum site. It will descend to grade 15 opposite Sixteenth Street, and rise again to a higher grade at Twenty-second Street.

The space south of Fifteenth Street is reserved for automobile parking for spectators at the stadium, but the designer is at liberty to arrange parking space north of Sixteenth Street if he considers it advisable to do so. No design will be penalized which does not do so.

The descending grades outside of the stadium will be gradual or in steps to conform to the architect's design and suggestion.

The competitors may wish to show temporary seating both below and above the permanent seats. It may be extended into the arena if it does not interfere with the sight lines. Above or around the main structure a base for temporary seating must be provided. It may be either of concrete construction or of earth filling between retaining walls, or partially of both, but in no case may this base be higher than grade 40.

It is assumed that the ends of the structure will be either semi-circular, elliptical or polygonal, but the designer will not be required to make them of similar size. If he chooses, the long sides need not be parallel.

Requirements and Capacity.

All of the following items are mandatory:

An arena, the longest dimension not less than 1,000 feet. A running track exactly one-third mile long, 12 inches from the inside border. The track shall be 30 feet wide. Provision must be made for portable elevated turns for bicycle races. Provisions for motorcycle races need not be made.

Entrances, one or more, at or near the north and south ends for incoming and outgoing processions so that armies may approach at one end, maneuver within the stadium and leave at the opposite end. These entrances must not interfere with the theater at one end.

Space for these requirements will take all the area that is available and will be sufficient for all other uses to which the arena will be put.

An outdoor uncovered theater is required at one end, presumably the smaller end of the structure if both ends are not alike. This theater must be provided with a temporary platform, stage and screen, shutting off the portion of seats and arena not in use. This shall be for out-of-door dramatics, band concerts, etc.

Seating.

The main structure shall be a series of banks and seats of a capacity to accommodate 60,000.

Provision for temporary seating shall accommodate 40,000 people; it may be partially above and partially below the main permanent structure. It may extend into the arena.

Display of Bunting.

Very liberal provision for festal display of bunting must be provided.

Reviewing Stands.

One or more reviewing stands must be provided. They must be suitable for the most important public occasions.

Accessories.

Beneath the permanent seating provision must be made for:

A suite of offices, the equivalent of ten rooms, 15 x 20.

Numerous public comfort stations, distributed throughout the substructure.

A number of hospitals and first-aid stations.

Special provision for storing temporary seats and supports; also, for the stage and screen for the theater.

Stables for horses and cattle during fairs and conveniences for transportation of exhibits.

Dressing rooms in connection with the theater.

Storage for flag poles, decorations and furnishings.

Lighting.

Provision must be made for lighting the space under the seats, as far as possible by natural means, but adequate artificial lights must also be provided for evening use.

The decorative use of lighting for evening use of the stadium must be provided liberally so that spectacular evening displays may be given.

Heating and Ventilating.

All space beneath the seats designed for use must be ventilated by natural means. Such provision must be made as no heating apparatus nor mechanical ventilation will be installed other than heating for the toilets, first aid, emergency rooms and offices if they are used during winter carnivals.

Refreshments.

Convenient spaces must be provided in numerous locations for soda fountains and confectionery and other refreshments.

Drawings Required.

All drawn with black ink on sheets of white opaque paper. They may be mounted on linen, but they must not be mounted on stretchers.

First, a general ground plan showing the stadium and surrounding drives and approaches and the south building line of the Field Museum. Not all of the parking space south of Sixteenth Street need be shown. The ground plan shall be at a scale of 100 feet to the inch. The treatment and use of all of the space between the Field Museum Terrace and the stadium must be drawn on this ground plan and shall show all drives, walks, approaches and entrances.

Second, two plans at a scale of 32 feet to the inch, one showing the seating arrangements, the other showing the plan of the substructure and accessories. A third partial plan showing intermediate levels may be made if the competitors wish to do so. (Note—The top of all drawings of plans shall be north.)

Third, two or three exterior elevations at 1/16 inch to the foot, one showing the side, the second showing one end and the third showing the opposite end if it differs from the first.

Fourth, one longitudinal and one transverse section at a scale of 16 feet to the inch.

Fifth, drawings of entrances, special features or typical sections are requested at ⅛-inch scale showing plans, elevations and sections of such portions or details as cannot be effectively shown at 1/16-inch scale.

Sixth, one general view bird's-eye perspective from a point in line with the center of Sixteenth Street, either

east or west of the stadium. The view must be taken from an elevation between 300 and 800 feet above the lake.

The rendering shall be in black ink or sepia in pen or brush. No water color perspective will be allowed or considered.

The number and size of the sheets of drawings is optional with the competitors.

Description.

A typewritten description of about 1,500 words, giving the author's ideas of the uses for this stadium as designed by him, the methods by which its features are to be employed and its value to the community developed as well as the method of construction proposed would be received and considered. (This is not a mandatory request.)

The competitors are requested to make a statement of the cubic contents of the structure shown by their plans.

Response.

The owner desires responses from the competitors on or before August 21, 1919, advising him whether or not they accept this invitation and will agree to enter the competition and comply with its conditions. Such responses may be addressed to the Secretary of the Commission, Washington Park, Chicago.

The jury adjudged the design of Holabird and Roche to be the best of those submitted. The position of the other competitors, if they were placed, has not been announced.

THE AMERICAN ARCHITECT is pleased to publish the six designs and also the descriptions submitted by the competitors. In doing this it furnishes its readers an opportunity to study the various interpretations of the program by the competitors, which study will be interesting and of possible use as the demand for such structures becomes more common.

Description Submitted with Design for a Stadium on the Lake Front, Chicago

By Holabird and Roche, *Architects*

Selected as the Best Design by the Jury

IN the solution of the problem two requirements were considered of paramount importance:

First, that the proposed stadium should in no way conflict with the Field Museum;

Second, that the majority of the permanent seats should be concentrated around a comparatively small area, to afford to the greatest number the best view of those athletic games and similar events as could not be expected to fill the stadium to capacity.

Solution of the First Requirement

(*a*) The Field Museum is considered the head of the composition, the axis of stadium being the same as that of the museum.

(*b*) The north end of the arena is left entirely open, affording to each spectator an unobstructed view of the museum.

(*c*) North from the east and west porticoes, the permanent seats are entirely below grade 31, which is the grade of the esplanade in front of the museum. In this north sector the structure is merely a series of terraces, finishing opposite the end pavilions of the museum in simple sculptured walls and stairways. By this treatment of the north end of the stadium, conflict with the architecture of the museum is entirely avoided.

Solution of the Second Requirement

(*a*) The width of the arena is made as small as practicable, being 300 feet between walls.

(*b*) The important east and west stands (marked by porticoes) are made higher than the north sector, to give a larger number of seats in this portion of the stadium. A football field is centered on the center line of these stands. The finish of the one-third mile track and of a 220-yard straightaway is opposite the reviewing stand at the center of the west stand.

(*c*) The combination of these two stands with the theater seats (semi-circular south end), comprise the large majority of the permanent seats, and these seats are of nearly equal value for most of the events and displays that will be presented in the arena.

(*d*) In order to concentrate the seats around a small area, it is necessary to extend the height of the stands above grade 40. This is justified,

First, because the spectators are thereby afforded a better view of all details of the spectacles held in the arena, and

Second, because this arrangement permits the north sector to be kept at such a low elevation and to be treated so simply that there is no conflict with the Field Museum.

Seating.

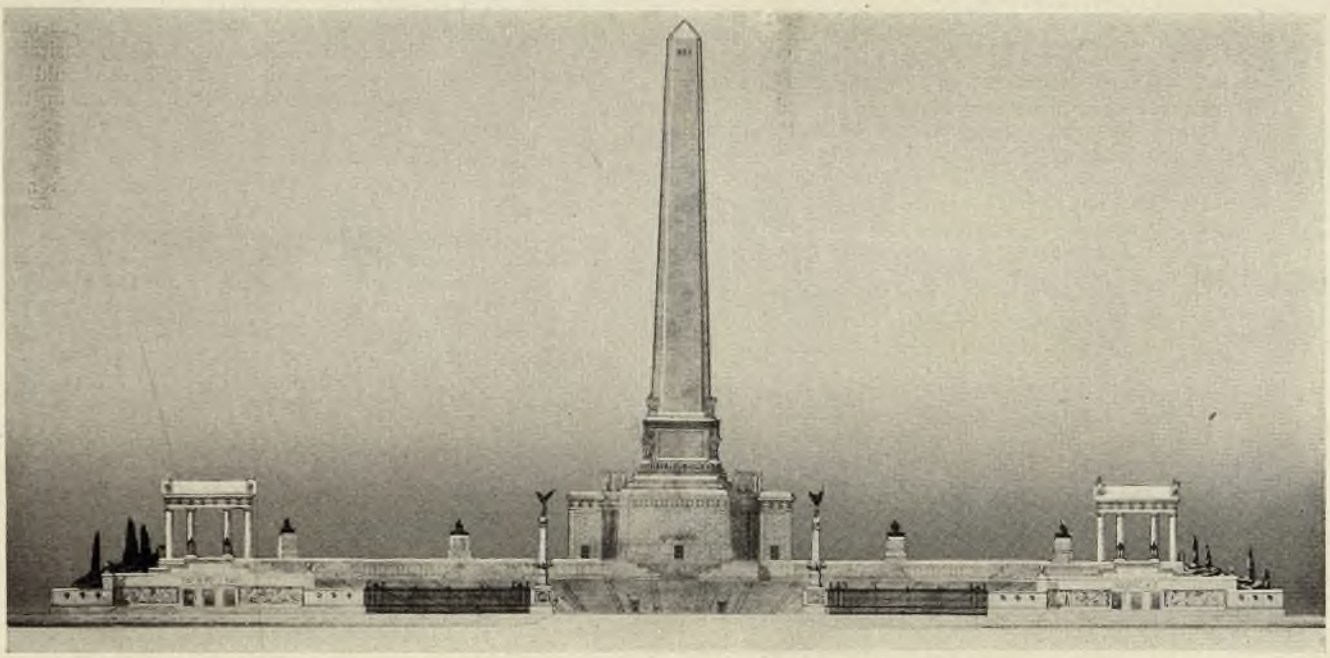
As shown, in the sections, the surface of the amphitheater is slightly bowled, in order to give the proper lines of sight and, at the same time, keep the stands as low as possible. The 60,000 permanent seating includes the main east and west stands, full height, the theater, except the upper terraces and, in the section north of the main stands, the seating below grade 31.

The 40,000 temporary seats are provided for on the upper theater terrace, the three terraces north of the main east and west stands, and a portion of the north end of the arena.

The full 100,000 seats surround the whole stadium uniformly to the top promenade indicated on the drawings.

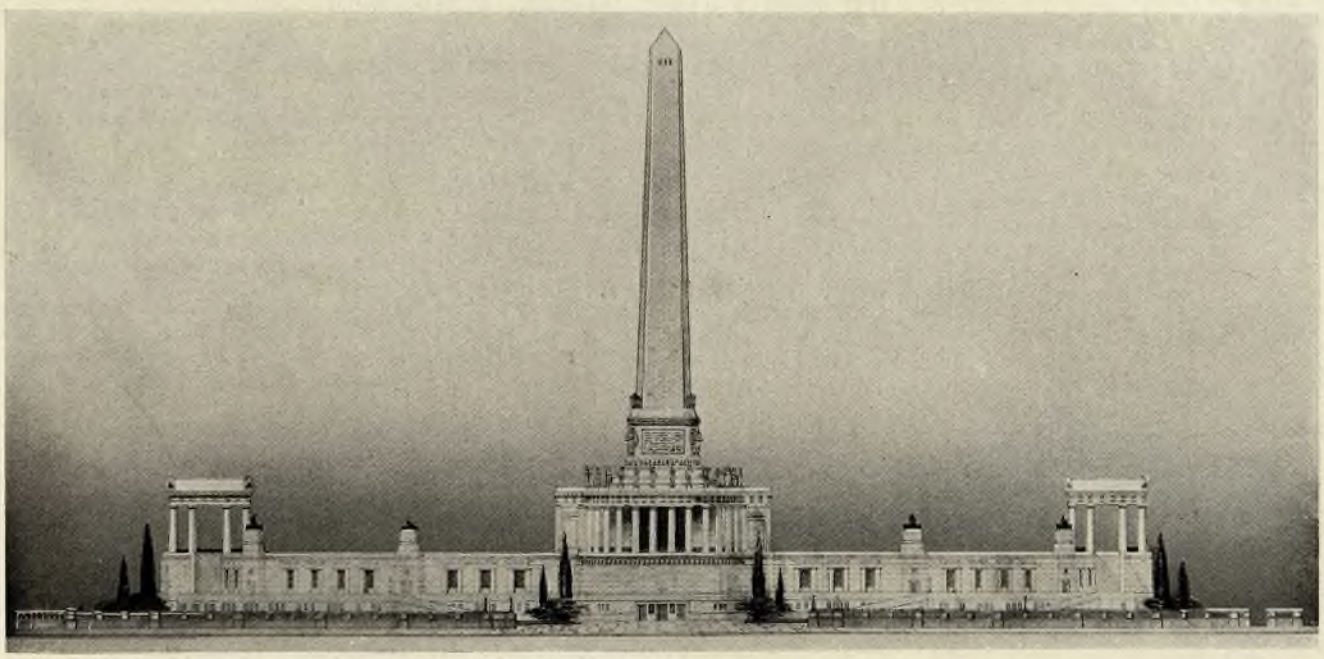
The terraces form bases for the temporary seats, and, by this arrangement the seating becomes especially flexible, as any number of terraces may be filled with temporary seats, leaving a finished structure in the event they are not all covered.

The terraces also have the advantage of serving as promenades for the spectators and sightseers.



NORTH ELEVATION

TRANSVERSE SECTION LOOKING NORTH



SOUTH ELEVATION

COMPETITION FOR A STADIUM ON THE LAKE FRONT, CHICAGO

FIRST PRIZE, ACCEPTED DESIGN—HOLABIRD & ROCHE, *ARCHITECTS*

Access.

A promenade at grade 31 extends entirely around the stadium. From this promenade, at suitable intervals, extend passageways and ramps leading to the banks of seats. People may enter at the north end on this level or any of the terrace levels and proceed to the section they are seeking.

Entrances at suitable intervals are provided along the exterior of the stadium. These lead through the structure and, by tunnels and ramps, to the various banks of seats.

Direct access to upper promenade is furnished by stairways.

In addition all main aisles in the amphitheater lead directly to arena, where egress is furnished by the entire north end, or by passages south of main east and west stands.

Pageants and large bodies of troops would enter from the north, pass south by the west reviewing stand, circle the theater with its reviewing stand and then move north and out again. In this way there would be no limit to the number of troops or the size of pageants.

In addition, two 30-foot passageways from the arena are provided at the south end of the main stands.

Superstructure.

The superstructure comprises a wide promenade, covered on the east and west by two monumental porticoes. Along this promenade sockets are provided for display of flags and bunting, also bases for searchlights at the southern end. On the drawings, no special scheme of bunting display has been shown, as this would vary to suit the occasion. At the extreme south, in the scheme as submitted, is proposed a large monument commemorative of the men from Chicago who lost their lives during the war. The idea of the monument might be termed one of the uses for this portion of the stadium. The site is of such a commanding nature, with the 1,500-foot sweep to the Field Museum that it seems highly desirable that advantage should be taken and that here should be placed a monument worthy of Chicago's effort in the Great War.

Space Under Stand.

The space under the main east and west stands and under the theater, has been left free from columns. This is divided into three large halls having approximately 125,000 square feet of floor space, making space available for large automobile, livestock, dairy, industrial and educational, or other exhibitions. Temporary booths or stalls can be erected to suit the requirements of the occasion. Although the program demands only heating for accessories, this space could very easily be prepared for any permanent winter uses that may be required, such as all-year-round swimming baths and gymnasiums, recreation and assembly rooms, or civic concert auditoriums. In the future park development to the east of the site, the interior arrangement of this project would lend itself to permanent or semi-permanent shops along the Boulevard face.

Parking Space.

Parking space for automobiles has been provided in the long triangle at the south of the arena site.

Construction.

The stadium will be constructed entirely of masonry, using the best materials that the funds available will allow.

Cubic Contents.

The cubic contents of the structure as presented total 10,562,000 cubic feet.

Description Submitted with Design for a Stadium on the Lake Front, Chicago

By Edward H. Bennett and William E. Parsons, *Architects*

General Purpose.

The aim has been to design a stadium for general uses rather than one serving any one specific purpose.

The stadium should be suitable not only for public gatherings and spectacles of a military or a non-military character, but also for the more specialized uses of athletics and games.

One of its chief uses will undoubtedly be that of great tournaments and reviews of a military character, of great gatherings on festival days in connection with public parades through the downtown streets and to such occasions as the Olympic games, floral exhibits, horse shows and circuses, in addition to football, baseball, track and other athletics.

The stadium may serve a useful purpose in connection with universal military service, or for the military classes of schools, whose public reviews, prize drills and other contests may be held there.

The theater may be operated separately from the main arena, except on occasions when the noise there will render performances in the theater difficult.

On great occasions all of the temporary seats may be used, but it is thought that for such uses as football games it will be desirable to mass the temporary seats on the long sides of the arena.

In either case the terrace will be an important factor for the distribution of the crowds, especially on free days. It being continuous the public may circulate from one side to the other and select their seats with freedom.

For ice carnivals the center of the field may be flooded and toboggan slides may be arranged, built up on the seats in such numbers as may be desired.

The value of the stadium to the public will be very great. In connection with the development of the South Shore its construction would encourage the people of Chicago to use the lake front together with the Field Museum, bathing facilities and such other buildings as may conceivably be built in the future to form a group.

The elements of this group would mutually support one another, they would have common transportation facilities and generally would present a variety of opportunity in the way of entertainment and instruction of undoubted value to the community.

Conception of the Problem

The conception of this stadium is that of a bowl, modeled in such a way that it is partially sunk in the

ground, rather than that of a building. In view of the existing topographical condition and the proposed road levels such a plan may be carried out admirably.

The general expression of the exterior is that of a terrace with an appropriate terminal at the north end and carrying the more substantial enclosure of the theater at the south end, and arrangement practically dictated by the conditions and orientation of the site.

A free display of bunting and other temporary decoration may be used it is believed, as indicated on the side elevation.

General Plan

The form chosen is governed in the first place by the outline of the site, having for its dominant features the Field Museum on the north and the proposed park and lagoons on the south and east. Its exact form, including the rounded ends, has been controlled by the factor of *maximum visibility* of the field from the seats. It is claimed for this plan that there are none but good seats.

It is believed that considerations of good seating have contributed to rather than detracted from the shape of the bowl and its general appearance.

Main Outlines: The ends of the structure are dissimilar in size and curved and the sides are straight, but transitional curves are arranged between these straight sides and the ends with a view to avoiding the appearance of narrowing or pinching at the center, common to some of the stadia of the Roman circus form. Straight sides, it is believed, have particular advantage for the lining up of military and other formations.

The theater has been designed as moderate in size as it is believed is consistent with the purpose of the utilization of the stadium arena as a whole. The differentiation architecturally also has been carried as far as seems consistent with unity of expression in the entire composition.

The unsymmetrical arrangement or gradual widening of the field on the north and south axis, it is believed, will give a more ample appearance and a better maneuvering ground. Owing to the fact that it fits the site perfectly it is believed that it will be at once recognized as the most reasonable and finest arrangement.

Administration Group: The administration offices are placed where it is thought they will be accessible and will control the entire structure to the best advantage. With them are grouped the various rooms and other services required by the program.

In addition to these are provided lockers, dressing-rooms and toilets, as may be necessary for those engaged in indoor training, the rifle pit, etc., in such manner that the whole group may be economically heated from the central heating plant as indicated on the plans.

Economic Consideration

Since the stadium must be built upon land, the greater part of which is submerged and that it will have to be carried in all probability on piles and concrete piers, it is obvious that the expense of unnecessary filling material under the structure should be avoided.

The fullest possible advantage it is thought should be taken of this great space, which may be developed in this way to its greatest usefulness. All the requirements of the program have been included in the plans, but in addition various suggestions have been made for the use of this lower space, to be operated in conjunction with the stadium.

Special attention is invited to the arrangement by which adequate natural light and ventilation is afforded throughout this lower structure.

Circulation and Access—Ramps

There are no stairways with the exception of four supplementary flights on the outside.

The stadium, due to the capacity demanded, occupies the greater part of the site selected, but it has been the aim to adapt every foot of the ground remaining to the purposes of circulation of the public.

Street Cars: Provision is made for a street car right-of-way bordering the Illinois Central with two loading platforms.

The general circulation for automobiles and other vehicles surrounds the site and between it and the arena is disposed a circulation as broad as possible, for the distribution of the public approaching or leaving the stadium.

There are twenty-six entrances leading to the vast concourse arranged under the platform for the temporary seatings and fourteen additional exits.

This concourse will serve for the distribution of the public or for sheltering them in the emergency of bad weather.

Sixty-three passages practically at street level, lead directly from this concourse and the arcade around the theater to the seating spaces. A maximum of 1,200 seats is served by each passage. In addition a number of ramps lead to the terrace bordering the arena, for distribution to the permanent seats and to the temporary seats which are to be placed on this terrace.

SEATING SPACE AND CAPACITY

SEATING SPACE (SQ. FT.), INCLUDING AISLES

	Stadium	Theater	Total
Permanent	213,248	62,528	275,776
Lower temporary	59,040	8,088	67,128
Upper temporary	100,800	——	100,800
Total seating space			443,704

SEATING CAPACITY (PERSONS)

Permanent	46,520	13,474	60,014
Lower temporary	12,194	2,690	14,884
Upper temporary	25,668	——	25,668
Total			100,566
Standing room in and above colonnade of theater			3,000

Temporary Seats: From the above figures it is seen that the temporary seats have been so arranged that a large percentage of them are below the permanent seats. These lower temporary seats are easily handled for storage, easily accessible when in use and are generally desirable.

Dimensions: The distance back to back of permanent seats is 30 inches, of temporary seats is 28 inches. The risers in the permanent seating range from 8 to 12 inches, as determined by sight lines.

It might be stated that the distance back to back of seats of 30 inches is the same as that used in the Yale bowl. This space is considered satisfactory. The distance of 27 inches used in the Harvard Stadium has been demonstrated to be too small.

The seating capacity is based on seat widths of 17¾ inches to 19 inches, the minimum being at a few points in the curved seating.

The arrangement and dimension of seats, aisles, entrances and ramps was decided upon, the sight lines determined and all problems of operation (for free amusements, for occasions when an entrance charge is made, either with or without reservation of seats and for exhibition use) were studied in the light of a first-hand knowledge of similar features in the largest stadia and halls of the country.

Storage of Seats: The lower temporary seats may be stored with minimum effort by shifting them through movable panels in the arena wall. Those on the upper terrace may be carried up and down by trucks, using the special ramps and the freight lift. By these means the seats may be placed or stored with a minimum amount of effort.

Theater.

The theater is segmental in form and the stage may be so placed that all seats will have a good view. It is surrounded by a colonnade and wall, which it may be stated with authority will improve the acoustical qualities of the theater. These qualities are stated to be better in the Harvard Stadium than in the Yale Bowl when used for theatrical performances.

Pool: In conjunction with the theater stage it is suggested that a pool be built for aquatic exhibitions. It is believed that if this were done the stage itself should be operated mechanically on runways, the stage itself being thus utilized to floor over the pool and throw its area into the main arena.

Awning: It is suggested that the theater may be partially covered with an awning if desired, as shown on the drawings.

Space Under Stadium Structure

A very considerable space is found under the permanent seats and under the terrace for the temporary seats.

Provision is made for the various services required by the program, administration offices and locker rooms for use of contestants in the stadium and for the participants in the performances of the theater, the storage of seats, stables, etc.

In addition to these, provision is made on the plans for the following: 1. Lockers and dressing-rooms available for bathing in the lagoon adjacent to the stadium. 2. An indoor running track for winter training. 3. A 200-yard rifle range. 4. A continuous driveway for the distribution of materials and a freight lift, also additional exhibition space. 5. In the theater in addition to the property rooms, dressing rooms, etc., are indicated a band room and rehearsal room. 6. A small plant for heating is shown on the plans.

Toilets: The toilet arrangements have been proportioned to the seating capacity, as established by actual experience in other modern stadia. They have direct outside light and ventilation.

Architectural Treatment

The style selected follows classic traditions, which are adapted to modern requirements. As already stated it is conceived as a vast terrace, the elevation of which does not rise higher than the terraces of the Field Museum, with which the stadium is intended to harmonize in style.

The chief motifs of embellishment are those in conjunction with the main entrance and the two lateral entrances and the theater.

The structural material is intended to be reinforced concrete, stone or pre-cast concrete forming the exterior surfaces.

Throughout it has been thought desirable to be governed by considerations of reserve in the permanent construction, especially where so large a public monument is concerned. Provision, however, is made for a display of temporary decorations and illumination.

Natural Lighting Under Seats and Terrace

The concourse is well lighted in the daytime through the passages, ramps and large entrance ways. The lower level is lighted by areas, through the passageways, and where necessary by wired glass panels in the seat risers. Sidewalk lights have been avoided because of the large cost of maintenance.

Artificial Lighting

In addition it is suggested that movable lighting standards for flood lights be provided in the stadium of sufficient height and number to illuminate the entire arena or such portions as may be necessary for night performances and that searchlights or other illumination be established on the higher points of the composition, such as columns, pavilions and terraces of the theater.

Naturally the general illumination of the composition should include the south façade of the Field Museum, as this building incloses the north end of the stadium, and while dominating the view, will, it is thought, harmonize perfectly with the arrangement of the stadium itself.

Stadium

The space provided under the terrace and seats for uses as required by the program contains 6,985,000 cu. ft.

In addition to the above the unfinished space suitable for use as bath house, lockers, indoor training space, target range and rehearsal rooms contains 2,095,000 cu. ft.

This extra space is left unfilled because filling would be an added expense; also because the space is valuable and may be put to uses as suggested or to other uses.

Note: A plan which would contemplate partial filling under the stadium seats and terrace to a level of say 23 feet, instead of to the arena level, which is about 7 feet, as is done in this plan, would materially reduce the storage and exhibition space, greatly increase the yardage of fill required and add to the cost of the structure an amount equal to the cost of the added fill, less a saving in lower level finish of that part which is needed.

It is assumed that foundation, wall and pier and floor construction would be practically the same in each case.

If partial filling, as stated above, were done, exhibition and storage space would be reduced by 260,000 square feet. Earth fill in excess of that required by plan as presented would be 202,500 cubic yards.

Types of City Plans

By JOHN NOLEN, *Sc.D., City Planner, Cambridge, Mass.*

THE classification of cities according to the type or character of the city plan may be considered under three heads: (1) Types distinguished by the style of the plan; (2) types distinguished by dominent function; (3) types distinguished by size.

Most cities can trace their origin to military, trading, or commercial requirements. In the foundation of Greek cities, for example, four distinct periods have been noted. In the first of these the city was planned as a place of refuge against hostile attack. In the second, its chief use was in the development of trade. In the third, artistic embellishment was the leading feature. And the fourth period embraces the time of the decline.

Cities generally owe their existence to geography, and such individuality as they have is due largely to topography. The chief topographical characteristics determining cities are the sea, rivers, hills and plains. It has taken decades of urban development and of mistakes to impress upon the cities of the United States the necessity to respect and conserve these natural features, to which they owe not only their form, but often their very life.

Cities that have been laid out upon preconceived plans may be broadly divided into two classes: The first is the radial system, or what is often called the spider's web plan; the second, the rectangular or gridiron plan.

The radial type has been most common in Europe. The rectangular or checkerboard type has been used widely in the United States and in new colonies generally. It would not be difficult to show that from the point of view of traffic facilities, as well as city attractiveness, the radial system has proved the better one in use. An interesting criticism of the limitations of the rectangular plan adopted for New York City by the Commission of 1807 has been given by F. L. Olmsted, Sr., in which he says, "Some two thousand blocks were provided, each theoretically two hundred feet wide, no more, no less; and even since, if a building site is wanted, whether with a view to a church or a blast furnace, an open house or a toy shop, there is, of intention, no better place in one of the blocks than another . . . If a proposed cathedral, military depot, great manufacturing enterprise, house of religious seclusion or seat of learning needs a space of ground more than sixty-six yards in extent from north to south, the system forbids that it shall be built in New York . . . There is no place in New York where a stately building can be looked up to from base to turret, none where it can even be seen full in the face and all at once taken in by the eye; none

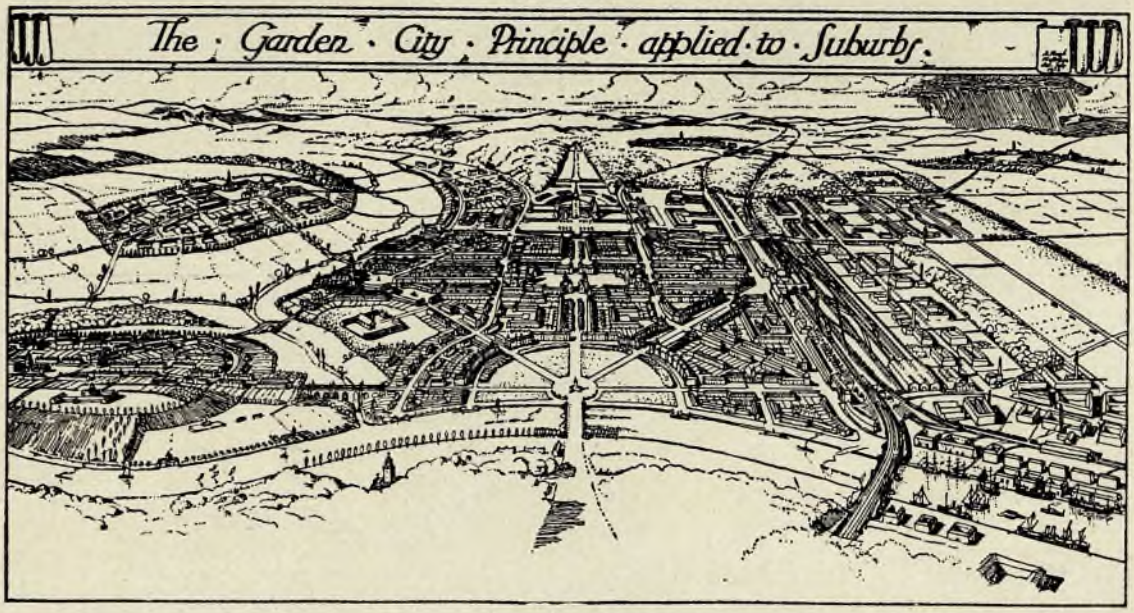
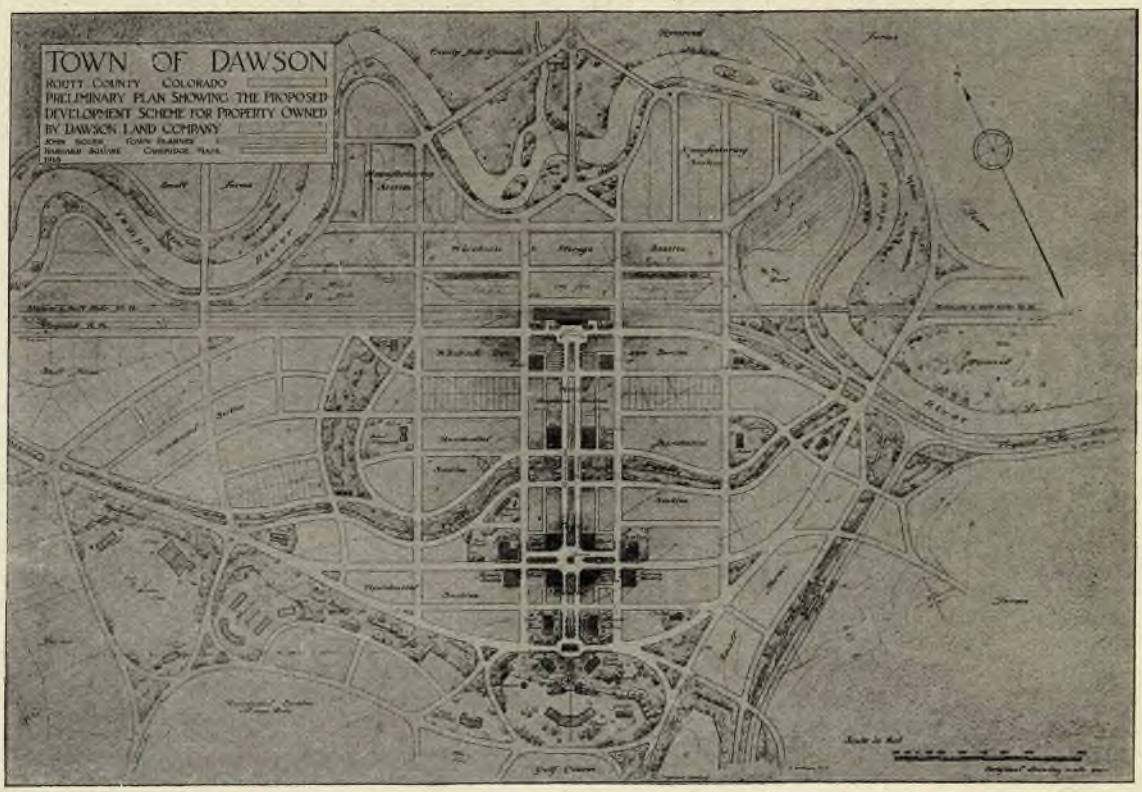


Diagram illustrating the development of a town by means of self-contained suburbs with defining belts of open space.

where it can be viewed in advantageous perspective . . . Such distinctive advantage of position as Rome gives St. Peter's, London St. Paul's, New York under her system gives to nothing."

A combination of the radial and rectangular systems has many advantages, and is particularly adaptable to the addition of new areas to old cities. The plan of the city of Washington is an interesting study of the combination of the chess-board and the radial systems.

It is not likely, however, that we shall find in any "system" the correct method of dealing with the traffic requirements of cities in the future. If they are to be fulfilled, no purely rectangular or radiating system is likely to be of great use. "Success in town planning," writes Dr. J. Stübben, the eminent German engineer and writer, "is more likely to be attained by seeking out the natural topographical conditions. A full consideration for the levels, roads, and boundaries must be the basis upon which all schemes must rest, and these considerations can only be left out of account if they become antagonistic to the legitimate requirements of traffic and town extension, or for economic or aesthetic reasons. The closer a town plan adheres to the natural conditions, the more original and attractive it will be. The filling in of the secondary roads to the main network of thoroughfares should be approximately rectangular, because the rectangle is the most convenient form of building block, and for the actual traffic requirements the diagonal system can always be resorted to. The radial form of arrangement is advisable for important focal points; town gateways, railway stations, the approaches and similar situations. Curved streets adapt themselves as a rule better to hilly ground than straight ones; for wide vistas, distant perspectives, and grand monumental effects the straight line asserts itself. The day has gone by for the unqualified em-



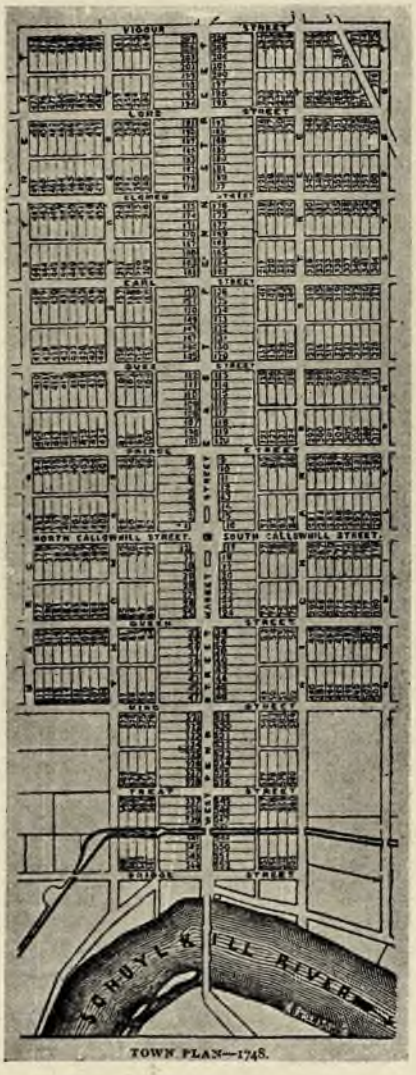
ployment of definite systems; henceforth they should not play a ruling but a subsidiary role."

The classification of cities according to the types distinguished by dominant functions include government cities, such as national or state capitals; commercial cities, industrial cities, residential cities, especially those serving as resorts; garden cities; and ideal types, as, for example, the city proposed by Mr. H. C. Andersen of Rome, Italy, or the city planned in connection with the memorial project in commemoration of the landing of the Pilgrim Fathers at Plymouth in 1620.

From the point of view of city planning, one of the most interesting types in this classification is that of the "garden city," the best example of which is Letchworth, England. The founding of Letchworth was undertaken in the belief that the problem

of the housing of the industrial classes, which is agreed to be one of the pressing problems of our modern civilization, could only be tackled successfully by a fundamental change in our methods of urban development. The existing methods of haphazard building, which resulted in a few years in the creation of new slum areas, were not only socially bad, but expensive. The increasing wealth of the country, the growth of population, and the extension of trade, were responsible for this urban development, but it was clear that some new method had to be adopted if the new areas were to be anything but gigantic mistakes and burdens for future generations. The garden city of Letchworth is not a fantastic or impossibly idealistic scheme. It is simply town building according to modern town planning knowledge. Among the most interesting publications on this subject are "Garden Cities," by Ebenezer Howard, the founder of Letchworth, and a more recent volume entitled "The Garden City—A Study in the Development of a Modern Town," by C. B. Purdom.

Cities distinguished by size afford examples of types involving planning of our largest cities or groups of cities, as in metropolitan areas, or smaller cities with a population in the neighborhood of 100,000, or towns, and even villages. The planning and replanning of the smaller cities takes on added importance when we consider how great is their number, the population affected, and their relative rates of increase. Of the total population of the United States, according to the census of 1910, more than one-half, or 53.7%, is still rural; only 46.3% is urban. Of this 46% more than one-half or 25.5% of the total poulation, is included in towns and smaller cities with a population ranging from 2,500 to 125,000, and only 20% in the larger cities with a poulation of from 125,000 to 1,000,000 or more. Moreover, the relative increase of poulation is greater in the smaller cities, especially those with from 50,000 to 250,000, being 41% against 32% for cities of 1,000,000 or more. The number of places of course, grows steadily with the decrease in population. For example of cities of 1,000,000 there are only three; or from 500,000 to 1,000,000, five; of 250,000 to 500,000, eleven; of 100,000 to 250,000 thirty-one; of 50,000 to 100,000, fifty-nine; of 25,000 to 50,000, one hundred and twenty; and of 2,500 to 25,000, twenty-one hundred and seventy-six. Cities with a population of 100,000 or over number only fifty.



ORIGINAL PLAN OF READING AS LAID OUT BY THOMAS AND RICHARD PENN, SONS OF WILLIAM PENN

The planning problems of the smaller cities are much like those of the larger cities, except that the smaller cities have a better opportunity to head off many of the evils resulting from the early lack of proper planning on the part of cities that have now grown large.

The planning of the most sparsely settled units is now attracting attention, and has recently been well discussed in a bulletin of the American Civic Association by Professor F. A. Waugh. He points out that "Country Planning" must follow. The country has just as great a need and just as good a right to be planned as the city. Something over half the people of the United States still live in the country. Moreover there are sound reasons for thinking that, just at the present time, the general weal of society is more concerned in the salvation of the country than in the next improvements in the city."

This is undoubtedly true, and the dweller in the country has now reached an attitude in these matters that causes him insistently to contend that in the planning and development of his town there shall be equally thoughtful and competent consideration as that given to the larger communities.

This feeling may be said to extend even to the towns distantly located from urban centers, and this general aspect of society toward these vital problems is one that should be seriously considered by those engaged in town-planning.

How Zoning Helps Real Estate and Business

By HERBERT S. SWAN, *Secretary, Zoning Committee, New York*

MILLIONS of dollars will be spent within the next few years on new buildings in every city in the United States. This money may just as well be spent toward the permanent upbuilding of the community as upon hit or miss, haphazard growth involving endless construction, demolition and reconstruction without ever achieving any degree of finality. It won't cost any more—indeed, it will cost considerably less and at the same time it will produce a much better city to live in and to do business in for generations to come.

The time to zone our cities is now. Every year that is allowed to lapse without the adoption of zoning means that much less zoning in the end. Wait until next year to adopt a zoning scheme and the erection of two or three tenements will place it in the tenement house class. The erection of a factory or a garage may even put it in an industrial zone. We must have zoning to protect what we have got.

Zoning expresses the idea of orderliness in community development. Just as we have a place for everything in a well-ordered home, so we should have a place for everything in a well-regulated town. What would we think of a housewife who insisted on keeping her gas range in the parlor and her piano in the kitchen? Yet anomalies like these have become commonplace in our community housekeeping. In what city do we not find gas tanks next to parks, garages next to schools, boiler shops next to hospitals, stables next to churches, or funeral establishments next to dwelling houses? What would be considered insanity if practiced in the ordinary house is excused as an exercise of individual liberty when practiced in the city at large. And yet misplaced buildings are to be condemned much more than out-of-place pieces of furniture.

To the owner of neighboring property the invasion of an injurious use often spells financial ruin—a ruin even more complete than if his building were destroyed by fire, for in that event his loss would be made good in part at least by insurance. But for the values destroyed in blighted districts there is no insurance; each owner must stand his own loss.

The individual's loss is also the public's loss. To the former the invasion of offensive uses spells depreciated values, increased vacancies, lower rentals, the calling of mortgage loans, foreclosure; to the latter, reduced assessments, unpaid taxes, tax sales.

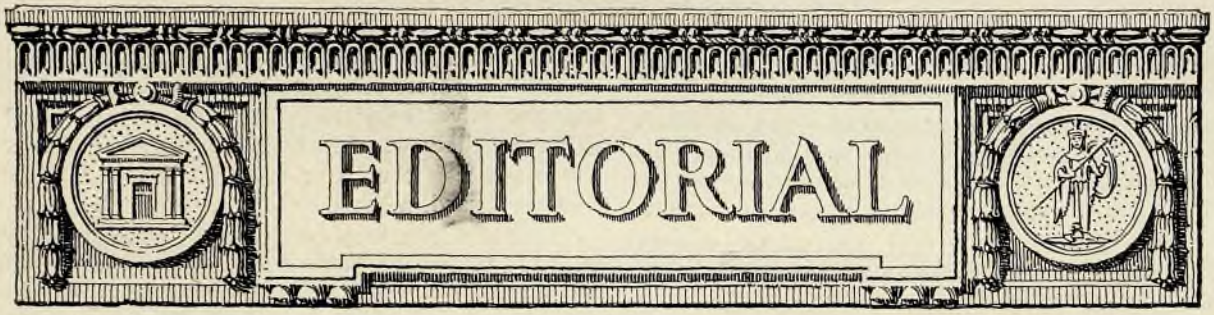
The present high cost of labor and materials emphasizes as never before the necessity for orderly building. With two houses worth as much as three several years ago, there is much more to be lost now than formerly through uncontrolled building. Mounting prices make it increasingly more necessary to conserve the value of all buildings, old no less than new, from premature and avoidable depreciation.

Taxes on real estate were so heavy before the war that many cities, hard pressed for additional income, were already searching for new sources of revenue. The tax on land and buildings, it must be remembered, yields all the way from 30 to 70 per cent. of the total municipal revenue in different cities. Under these circumstances it is quite evident that the stabilization of real estate values is of fundamental importance to the improvement of the municipal revenue system. During the next few years the real estate tax promises to assume even greater importance. The tremendous financial demands of the war in forcing the national government not only to increase existing taxes but to impose many new ones have had the effect of shutting off many potential sources of revenue to the local governments and of throwing them permanently back upon the real estate tax as the continued mainstay of their revenue system.

When New York had been taught only too well that unregulated building meant anarchy in its industrial and residential development; that putting apartments next to private houses, gas tanks next to schools, and factories next to department stores proved not only unprofitable, but involved the demoralization, if not the collapse of real estate values—the acceptance of zoning came as a matter of course and now all the wonder is that the city did not effect and exercise control over building a half century ago.

In New York the testimony of real estate experts is almost unanimous that the adoption of the zoning law has stabilized land values. The effect of the zone plan has been particularly noticeable in the districts reserved for detached houses. In such districts there has been an increased demand for private residences since the enactment of the zoning law. The restrictions have resulted in a great improvement of real estate conditions in such neighborhoods. Where the prohibitions against objectionable uses of land imposed by restrictive cove-

(Continued on page 219)



In order to supply our readers with material of current interest, the news and comment appearing in issues of THE AMERICAN ARCHITECT delayed by the printers' strike will be as of actual rather than stated date of publication.

Reaction in Trade Unions

THE Building Trades Council of New York, composed of representatives of forty-one unions in the building industry, has recently decided that all steel frame work of new buildings which has been erected by non-union steel workers must be torn down before it will permit all of the members of the various unions comprising this council to complete the structures.

In an interview published in a daily paper, the president of the Building Trades Council is reported to have stated: "What they have spent is a complete loss to them. Those buildings on which no work is being performed to-day ought to serve as an example to others who are contemplating building and having steel work done by non-union firms."

Here, apparently is an example of a labor leader strangely reactionary. He harks back to days when labor was less sure of itself and needed to use the encouragement of bluster and sabotage to gather its force. An extravagance of destruction by the young or in the forwarding of a new idea may be forgivable: it is an exhibition of new-found strength which does not know how to put itself to good use. But surely the labor unions have become sufficiently matured to give up these youthful manners. Their leaders should have intelligence to realize that it is not that they are merely causing financial loss to people against whom they bear a grudge, but that they are also destroying the accomplished work of other men and taking from the public its right to use that accomplished work. It it unfair and illogical, it is childish and it reaches no good or logical result.

THE day has long passed when labor unions must use any means at hand to show their power and to develop that power. The power is obviously there but the intelligence with which the power is to be used is not so apparent. As Americans we are willing to be shown. We are to a great degree a good natured lot of experimentalists but we are, at the same time practical. We want to see results. If buildings are half done, we want to see them finished and not torn down and started over again. When labor unions are receiving as full attention as has ever been given to any distinct social or economic power in Washington—it is painful to have evidence of a reversion to destructive tactics.

Power doesn't mean a grab at fat-living so much as it means responsibility. Ten years of socialist oratory has drawn from the pages of history to emphasize this point. There is no quarrel with fat-living so long as it is paid for, not only in cash but in moral responsibility. There is no quarrel with unions or with the power of unions, for in America we all work, but, in the present housing shortage, a refusal to work in Chicago and the present similar refusal in New York is a declaration distinctly unwise. Men turn their backs upon a service which they owe the public and go to the movies. The justice or injustice of the dispute has nothing to do with such a plain infringement upon the rights of society,—an infringement which succeeds in nothing but to prove a power to do harm which has long since been sufficiently substantiated.

THERE will never be any satisfactory basis established between labor and the employers of labor until labor both as an individual unit and in its organization of unions, more clearly understands the true meaning of service. When labor accepts employment at a scale of wages it has itself arbitrarily fixed, it carries an obligation that the service rendered shall be efficient and capable. Every large employer is to-day painfully aware that the attitude of his labor is more indifferent as to efficiency than ever before. He knows that costly and careless errors committed during regular working hours have often to be corrected during over time and the largely increased overtime scale. And he also knows that the corrections are cutting down the profit originally small and now shrinking to a possible loss.

Labor would declare a general strike where an employer failed to adhere strictly to his agreement with its unions but there is no recourse for poor service when by the very nature of the agreement

the character of the labor should be as thoroughly defined as is the scale of wages demanded.

Labor never in the history of its organized effort had better opportunity to prove to a critical public that while demanding a strict and adherence on the part of the employers to its agreements, it realized its own responsibilities and by disciplinary measures corrected the indifference and incompetency of its members and the poor quality of their service.

The Case Against the Billboard

ARCHITECTS are already aware of the unfortunate results artistically that go hand in hand with billboards. Attention has also been called to the fact that real estate values are adversely affected by their proximity. But there are other phases of the subject which directly interfere with the aims of municipal well-being, and hence architecture, which have not in the past been emphasized.

Billboards are mostly temporary frail structures with broad surfaces easily blown over in a storm. They are usually of wood and inflammable. They may either cause the spread of flames or constitute barriers behind which may lurk a cut throat or other dubious characters. They may shut out light from the lower floors of residences, leaving the ugly exterior back of the sign as the only outlook. Rubbish and litter frequently congregate in an unsanitary state at the base of billboard jeopardizing public health.

That the billboard may some day be banished from the public view is a hope which more than ever bids fair to be realized. This tendency is distinct, for the number of regulations to eliminate or control these offensive structures is constantly increasing. Among the most successful agents for the annihilation of the billboard may be mentioned the zoning laws, particularly those of the larger cities. These have in many cases imposed limitations upon the location and construction of billboards. Similar laws should be adopted by every small town.

Those who have community welfare at heart, whether architects or landscape architects, or organizations like the American Civic Association, zoning committees and the like, are unanimous in their desire to regulate the use of the billboard. In a recent issue of the New York *Times*, Herbert Swan, secretary of the zoning committee of that city, has this to say about the billboard:

Prior to the adoption of the zoning resolution there existed in New York absolutely no safeguards to protect residential districts against billboards. Advertisers were free to erect huge signs wherever they wished—whether the site chosen was opposite a church or a warehouse, a park or a railroad yard, a home or a gas house. No locality had any amenities which the billboard was bound to respect—it could go anywhere. A private dwelling had no more rights in a residential district than fences featuring glaring signs and objectionable signs.

All this has been changed by the zoning resolution, which prohibits property situated in residential districts from being put to any but its legitimate uses and the accessory uses customarily incident thereto.

Dwellings, including dwellings for one or more families, boarding houses, and hotels having thirty or more sleeping rooms.

Clubs, excepting clubs the chief activity of which is a service customarily carried on as a business.

Churches, schools, libraries, or public museums.

Philanthropic or eleemosynary uses or institutions other than correctional institutions.

Hospitals and sanitariums. Railroad passenger stations. Farming, truck gardening, nurseries, or greenhouses.

The term "accessory use" does not include any building or use not located on the same lot with the building or use to which it is accessory. A private garage for more than five motor vehicles is not deemed an accessory use. Presumably the only kind of signboard constituting an accessory use is the ordinary "To Let" or "For Sale" sign affecting the premises on which it is located.

Commercial advertising can in no sense be deemed accessory to any of the uses specifically permitted in residential districts. The erection of signs in the future will therefore be confined to such sections of the city as are situated in business districts or unrestricted districts.

The zoning resolution has at one stroke done more to remedy the billboard evil in the residence districts of the city than all the laws and ordinances previously passed on this subject put together. Instead of merely regulating the height, size and construction of signs, it frankly recognizes the fact that there is no such thing as a billboard respectable enough to rub elbows with churches, schools, and private homes. When hereafter erected the billboard must go where it will cause a minimum of harm—alongside business buildings and industrial establishments.

How Zoning Helps Real Estate

(*Continued from page 216*)

nants were formerly limited in their duration they are now permanent.

The zoning law in assuring these districts of an orderly development in the future has strengthened values to a considerable degree. Free from any fear of invasion from garages, stores or apartment houses, the home owners in these districts are settling down to enjoy the relief which the zoning law has given them.

Nearly all the private houses erected in New York since the adoption of its zoning law have been built in the districts set aside by the law for detached houses. Nobody cares to run the risk of having a garage or a warehouse next to his home when he can avoid it.

The beneficial effect resulting from the zone plan is also shown in other ways: vacant land in some sections sold until the war intervened at higher prices than it did before the adoption of the law. New houses now being erected are of a higher type and better finish than the old ones in the same districts. The zone plan is proving of inestimable value to the private home sections of the city.

Business streets, too, are feeling the wholesome effects of the law. Keeping business off residential streets means keeping it on business streets. Haphazard development hurts business property as much as it does residence property. The sporadic store invading quiet home streets not only demoralizes residential values; in decentralizing the shopping district it also disintegrates business values.

The whole purpose of zoning is to encourage the erection of the right building in the right place. It protects the man who develops his property along proper lines against the man who develops his property along improper lines. Rightly understood zoning means the substitution of an economic, scientific, efficient community program of city building for wasteful, inefficient haphazard growth.

The first step in zoning is the enactment of enabling legislation. The exact legislation necessary in any particular state varies according to the degree of home rule exercised by cities. In some states where cities have very broad powers of home rule no enabling legislation is required. In most states, however, cities enjoy only such powers as have been specifically granted them by the Legislature; the powers not expressly conferred upon them are denied. The majority of cities are probably in this situation.

After the enactment of the enabling legislation comes the appointment of the zoning commission. Experience has demonstrated that the best way actually to accomplish anything in the way of zoning is for the city to appoint in the absence of a city planning commission an unpaid commission of representative citizens, this commission having conferred upon it adequate authority and money to engage the necessary expert help to make a comprehensive survey of the city and to formulate regulations and lay out districts controlling the heights, use and area of buildings throughout the community. Having framed a tentative draft of the regulations and maps, the commission should hold public hearings. Notice of these hearings is generally given in the press in the same manner as notice of any other proposed ordinance. The suggestions made by property owners at these hearings will prove of great value to the commission in preparing its final report which when thus amended is submitted to the city council for consideration. The council, of course, holds public hearings on the final maps and ordinance reserving the right to amend either up to the time the regulations are finally enacted.

The personnel of the commission is a constantly recurring problem to every city that embarks upon a zoning program for the character and ability of the commission will determine as nothing else the success of the work. Shall the commission be composed of city officials or of representative citizens engaged in various lines of work? The primary qualification for membership is that a man should enjoy the confidence of the community and that he should have considerable breadth of vision and a judicial attitude of mind. It is what a man is able, and not only able but willing and ready to contribute to the zoning work that should determine whether or not he is put on the commission. No man should be appointed simply because he happens to be a city official, a prominent citizen, or a member of a prominent organization.

Too large a commission is not desirable. The difficulty of obtaining a quorum, the necessity for many committees and the general shifting of responsibility accompanying large bodies all make a small commission more effective than a large one.

Even a large city will seldom, if ever, require a commission of more than fifteen. New York had sixteen; St. Louis, thirteen; Newark, eleven. A commission of seven would probably suffice for most cities of a hundred thousand. Towns of ten to fifteen thousand might actually find a commission of three or five adequate.

The knowledge of local needs can be obtained very much more satisfactorily through conferences and meetings with interested parties than by increasing the size of the commission. Neighborhood and taxpayers organizations are glad to appoint committees on zoning to co-operate with the commission in elaborating the regulations for different

localities. For exact information concerning the height, use and area of buildings, however, the commission will be forced to rely upon the detailed data compiled by its staff. Many people may think they know all about their city, and in some cases they probably do, but their knowledge cannot take the place of maps and charts classifying different kinds of buildings in defining the several districts.

To be most effective a zoning scheme must be city wide. Piecemeal zoning inevitably results in leaving a large part of the city unzoned and the part zoned will be zoned without reference to the best interest of the city at large. When the whole city is zoned at one time it is possible to treat all districts similarly situated and of like character in the same manner. When one section of the city is zoned at a time this is very difficult, if not quite impossible. Each locality being studied separately, the regulations adopted will, of course, be drafted to suit the idiosyncracies of its own particular development. A comprehensive survey embracing the entire city would, however, reveal the presence of dozens of localities, each perhaps slightly different yet sufficiently alike to be treated together as one class. The establishment of a multiplicity of kinds of districts, when a few would suffice, serves no good purpose—it only creates confusion and tends to bring all zoning into disrepute.

There is also another point to be considered and that is the attitude of the courts toward zoning. In order that the ordinance passed may have its legality sustained it is especially important that every care be exercised in framing the proposed regulations so that they fit local conditions, that they are not arbitrary or discriminatory, and that they do not fall within the ban of class legislation. Above all reasonableness must be the test of both the classification and the districts established. Whether the legality of any particular zoning scheme will be sustained depends more upon the carefulness and fairness put into the preparation of the regulations than upon a lack in the forward-looking attitude of our highest court.

The question of passing a temporary ordinance protecting residential districts appears to come up whenever a city considers the adoption of a zoning ordinance. Once appointed, the zoning commission will be repeatedly urged to formulate restrictions for certain localities before completing plans for the entire city. This the commission should consistently refuse to do for when the legality of the law is tested in the courts the city will be in a much stronger position to defend the scheme if it is able to say that all the regulations are mutually interdependent and part of a common plan. Of course, it is hard to see sections ruined while protective measures are being formulated but the harm done in this respect will prove very small. If the commission concerns itself with special districts at the start the injury done in the city at large due to the later adoption of the plan will, no doubt, be much larger in the aggregate than the benefits conferred upon a few scattered residence districts temporarily protected. There are also other objections to temporary ordinance. Such regulations having once been imposed, the owners in such sections of the city are apt to consider themselves adequately protected and lose all interest in the final working out of the plan. A tentative plan, moreover, is likely to prevent the erection of buildings in sections where they would be allowed in the final plan. Persons who have their building projects interfered with in this manner will naturally be more or less disaffected and oppose the enactment of any regulations.

The proposed zoning ordinance just prepared for Newark, N. J., establishes several new precedents. One of these has to do with building lines, the other with the limitation of congestion. As these provisions are of more than local interest a few remarks may not be amiss.

In the past the freedom enjoyed by every owner to erect his building on the street line has seriously prejudiced the highest residential development of many streets. There is probably nothing that enhances the attractiveness of a street with private homes more than an open strip of ground between the street line and the building line. Setting back the houses permits the maintenance of a front lawn with grass and trees; it shuts out the dust and noise of the street; it promotes family privacy; and it affords additional light and air. And yet in the absence of any obligation binding all the owners within a block to observe a minimum setback line, each owner has felt it necessary to build his house on the street line. His own self-protection has demanded this. If he did not erect his house on the sidewalk, his neighbors on either side might. Being pocketed between two buildings, his house, instead of facing a street, would really front upon an outer court. Countless owners trusting to the comity of their neighbors have had their values ruined by themselves observing the amenities of the district.

If we wish to preserve the front yards in our residence districts we cannot permit a situation to continue which rewards the despoiler and blackjacks the benefactor of a neighborhood. A method must be found to protect the house that conforms to a minimum setback line. The proposed Newark ordinance suggests such a method which, though it may not be ideal, still affords a considerable degree of production to residence districts.

The proposition is briefly this: Where at least one-half of the buildings situated on either side of a street between two intersecting streets conform to a minimum setback no new buildings may be erected to project beyond it unless an open space is left on each side of the building beyond the setback. Each of these open spaces is required to have a minimum width at every point beyond the setback equal to at least one per cent. of the width of the lot on which the building is situated for each one per cent. that the building projects beyond the setback.

The effect of this provision will be absolutely to prohibit any new building in a block where half the existing buildings observe a minimum setback line from projecting beyond half the distance to the street or from occupying more than one-quarter of the area between the setback line and the street line. In actual practice, however, it is doubtful whether any building would ever project more than one-quarter of the distance to the street.

It is a strange phenomenon that despite a half century fight against bad housing conditions, congestion of population should proceed at an accelerated rate in many cities. More improved and enlightened housing legislation may have effected higher sanitary standards in the environment surrounding the home but it has not checked the ever-increasing concentration of population. Indeed, to a degree, it has even seemed that this overcrowding of the land was due to the very measures which were designed to improve conditions.

In New York, for instance, new bridges and tunnels have only extended the congested area. The rapid transit lines extending far out into the cornfields have not dispersed the population. Bridges over the rivers, tunnels under the rivers, and subway and elevated lines everywhere gridironing the metropolitan district have all helped each in its turn to create new congested centres in the purlieus of the city.

How to control congestion is probably as important and difficult a problem as any that confronts some cities to-day. Height regulations afford no satisfactory solution to the question for even though the height limits adopted be as low as it is practicable to impose, the fact remains that a large number of families can be housed in low buildings. Nor will area regulations get to the bottom of the matter for the court and yard requirements will usually be found to admit of the construction of a fifty-family house as readily as the erection of a three-family house. To prevent an undue congestion of population it is becoming increasingly more clear that it is necessary to go beyond the imposition of height and area regulations.

Experience shows that in the absence of any restriction on congestion there is practically no limit upon the population that can and *will* be housed on a unit of ground. In New York, for instance, the new tenements now being erected accommodate a larger number of persons on a given land area than any of the old slum houses on the east side. The average density of the tenements erected in Manhattan in 1914 was 852 persons per acre (counting 4.6 persons to the family). In Brooklyn for the same year it was 697 persons per acre. The maximum density was over 1,600 per acre. These figures in each case refer to the land within the block exclusive of that in streets. Statistics show that the maximum is rapidly becoming the average. In 1914 there were 119 tenement houses containing 4,125 apartments erected in Manhattan. These apartments which provided accommodations for a population of 18,975 persons, occupied by actual measurement a land area of only 22¼ acres. Making due allowance for the area within streets, this is at the rate of over a half million population per square mile.

To remedy this evil the Newark Commission therefore recommends that no dwelling or tenement house hereafter erected shall accommodate or make provision for more than a given number of families. The number in any particular case varies according to the district and the size of the lot. Thus in the A and B districts the limit expressed on an acreage basis is 140 families; in the C district 105 families; and in the D district 25 families. This is equivalent in the A and B districts to eight families on a 25x100 foot lot, in the C district to six families. In the D district it is equivalent to two families on a 35x100 foot lot. A family is defined as any number of individuals living and cooking together on the premises as a single housekeeping unit.

In Newark, and in Eastern cities generally, the problem is very much more than one of preserving detached house districts. The one-family row house and the multi-family house undoubtedly harm the private detached house, but the same can be said of the big tenement alongside the two or three family house. The establishment of one-family detached house districts, though it limits land-overcrowding in these districts, does not restrict it in those parts of the city left open to apartments. There the owners would be allowed to pile up as many apartments as they might choose.

Keeping all kinds of industry out of residence districts is expected to go a long way in improving social conditions, for zoning offers at one stroke, without any expense or any increase of rents, a method of protecting such housing standards as we have achieved against steady deterioration. It does

more than that—in defining the direction and character of city growth, it lays the basis for an ever-increasing improvement in the social and economic conditions affecting the whole community.

Never has the intimate relationship between good housing and successful industry been plainer than it is to-day.

The stabilization of employment conditions and the reduction of labor turnover are dependent to a larger extent upon what improvement can be effected to industrial housing. So long as no protection is thrown about the environment of the workman's home, so long as it is allowed to be hemmed in with manufacturing establishments pouring out grime, dirt and smoke we can expect slums filled with hordes of unskilled nomads who wander from plant to plant and from town to town not only taking no interest in our civic life but bearing our institutions the keenest resentment. If the housing of munition and shipyard workers has taught nothing else it has taught that a most intimate relation exists between social unrest and bad housing.

To man the works we must house the man but the environment of the house is of almost as much importance to the work as the house itself. If there is no house, the man cannot be housed; if the house is not situated in a congenial neighborhood the man will not want to live in the house.

How zoning can be made of as great help to industry as to residence and business is well illustrated in the case of Alameda. Since the adoption of its zoning ordinance the city has commenced the construction in its industrial district of a belt line railroad, which will serve all factories, connecting them not only with each of the several railroads, thus relieving the factories from domination by any one railroad, but with the waterfront so that freight can be floated across San Francisco Bay in carload lots. A highway, nowhere less than 100 feet in width, skirting the edge of the industrial district throughout the length of the city has also been planned. Laid out for the purpose of facilitating the movement of factory traffic, this street will be improved in such a manner that its pavement will stand up under heavy loads and endure hard wear. The protection of the district against fire, too, is being looked into by the city. So long as factories were allowed to locate anywhere in the city, it was difficult to serve them with sufficiently large water mains. But, now, as factories in the future are permitted to be located in only one district, the city can readily afford to give them all the fire protection that conditions may make necessary.

That the relative competitive strength of a city in the domestic and foreign markets of the world is frequently conditioned to quite as great an extent by the arrangements of the industries within the city as by the availability of raw materials and the proximity of a consuming public is just beginning to dawn upon us. Economical means of transferring and distributing freight within the city contribute proportionately no less to the development and expansion of its commercial and industrial hinterland then efficient outside connections by rail and water. Heavy terminal costs are as much a drag upon a city's prosperity as high freight charges. Every cent saved in needless trucking means just that much more money available for the extension of the city's commercial and industrial radius by rail and water.

When factories and warehouses are not located with reference to freight terminals, a situation frequently develops where the downtown streets are unnecessarily congested to the inconvenience and financial loss of the whole city. A similar condition results where mutually interdependent industries locate in widely separated parts of the city instead of near one another. It is maladjustments of this kind that zoning is designed to remedy.

Among cities similarly situated as to markets and raw materials, it is the city in which manufacturing can be carried on with the lowest overhead expense that will be the most prosperous. The city that drones along and does nothing to promote its industrial development is, in effect, encouraging grass to grow on its own streets. Nobody would consciously subsidize a competitor, yet every possible reduction in operating costs not taken advantage of, really constitutes a bounty to a rival for it may be the money wasted on needless trucking and abnormally high insurance premiums which enables him to earn the margin of profit to remain in business.

That a program of industrial zoning and development is essential in every city cannot be questioned. For years the pecuniary losses suffered on account of unregulated building in certain cities have not only equalled but exceeded those suffered from fire. The city that does not protect its citizens against fire is generally considered derelict in its sense of public duty. The same is rapidly becoming true of the city that does not protect its citizens against unregulated building.

Current News

Happenings and Comment in the Fields of Architecture and the Allied Arts

In order to supply our readers with material of current interest, the news and comment appearing in issues of THE AMERICAN ARCHITECT delayed by the printers' strike will be as of actual rather than stated date of publication.

Registration of Architects

Information as to laws for the registration of architects, now in force in the following states, may be obtained as follows:

California, State Board of Architecture, Sacramento; Colorado, State Board of Examiners of Architects, Denver; Florida, State Board of Architecture, Jacksonville; Idaho, Department of Law Enforcement, Boise; Illinois, Department of Education and Registration, Springfield; Louisiana, State Board of Architectural Examiners, New Orleans; Michigan, State Board for Registration of Architects, Lansing; Montana, Board of Architectural Examiners, Helena; New Jersey, State Board of Architects, Trenton; New York, State Board for Registration of Architects, Albany; North Carolina, State Board of Architectural Examination and Registration, Raleigh; Oregon, State Board of Architectural Examiners, Portland; Pennsylvania, State Board of Examiners of Architects, Harrisburg; South Carolina, State Board of Architectural Examiners, Columbia; Utah, State Board of Architecture, Salt Lake City; Washington, State Board for Registration of Architects, Olympia; Wisconsin, Board of Examiners of Architects, Madison. Such laws are pending in Indiana, Iowa, Minnesota and North Dakota.

Big Paris Building for World Buyers

London correspondence reveals the following information: Plans for the great Marche du Monde, or meeting place for the buyers of the world, which is to be established in Paris in two years, contemplate the erection of a vast building nine times the size of Trafalgar Square and containing not only 5000 shops but many special features, including the most luxurious club and the largest banquet hall in the world. Details of the scheme were given by Sir Charles Dundas, secretary of the Association of Great Britain and France.

"The object," he said, "is to give producers and buyers of the world the facility to perform all their transactions in one place.

"It will be the only building in the world where the rentals will decrease according to the length of the leases, and where the tenants will be considered as valued clients and not as objects of speculation.

"The building will be of six stories, with a frontage of 350 feet. It will be nine times the size of Trafalgar Square and will cost approximately £4,000,000.

"This enormous building," continued Sir Charles Dundas, "will contain 5000 shops, the most luxurious club in the world for buyers and producers, swimming and Turkish baths, gymnasium, restaurant, grill room, roof garden, several lecture-rooms, industrial cinema and the world's largest banqueting room.

"Briefly, what is contemplated is the erection and operation of a veritable city, in which it may reasonably be estimated there will be a floating population of manufacturers, producers, merchants, buyers and the necessary employees, exceeding 30,000 people."

Sir Charles added that the advantages of this huge project to the British buyers and sellers would be enormous.

"One of the principal objects of having this world's market in Paris," he said, "is because the French capital is the pivot of the railway centers of Europe, and the advice of the buyers of the world has been taken on this matter."

Mutilating Historic Boston

Just at the time when Park Commissioner Gallatin of Manhattan announces that the site of the reservoir in Central Park will be made into a meadow and not used for a stadium or any other construction, word comes from Boston that slices are to be cut off from the little old Common and that an arcade is to be run under the tower of the Old South Church in order to relieve the congestion of the streets.

No spots in America are more crammed with historic memories than these two, comments the Brooklyn *Eagle*, and the presence of the growth of the city must have been intense to force consent to the laying of profane hands upon them. Boston Common is the only survival we have of the old English custom of common lands, it having been laid out originally as a free pasture and training ground. The cows and the training days have long since departed from it, but it remains an unrestricted breathing spot in the very heart of the city, not less sacred in the eyes of the Bostonian than the codfish above the State House door on the hill which looks down upon it. As for Central and Prospect parks they are parvenues, flaunting their modern wealth of equipment in the face of the dignity of the plain old Common, which stands for liberty and not for wealth. Fortunately this historic playground is not to be seriously injured, merely pared off on the Boylston Street and Tremont Street sides so as to give more space for traffic without reducing the grass-grown area, the change being permitted on condition that no further invasion of the Common shall be made.

The change of the Old South Church will be more disturbing, but it is even more necessary for the convenience of the modern city. Fortunately the body of the church, now one of the most interesting historic museums in this country, if not in the world, will not be touched. The tower in front will have an arcade built under it for the sidewalk, so that the curb of narrow and crowded Washington Street can be moved up to the very foot of the tower and the width of the present sidewalk added to the roadway.

Boston Common was bought in 1634 by Governor Winthrop and others as a common cow pasture and training ground, and was one of the several such tracts of communal lands and planting grounds. To-day it is the sole remainder of these ancient commons, other holdings having passed into private hands.

It was on Boston Common that Revolutionary soldiers drilled; from its limits at Park Square, then the Back Bay in fact as well as in name and now "made land,' the British started for Lexington on April 19, 1775. On the

common the British mustered their forces to attack Bunker Hill and British artillerymen set their guns on Flagstaff Hill during the siege of Boston. Colonial expeditions set out against Louisburg and Quebec from the old common, and Massachusetts regiments assembled there prior to going to the front in the Civil War.

Ceramics

Perhaps no more than one person in ten knows what the word "ceramic" means; probably not one in a hundred appreciates all it implies in its modern, practical bearings, states Edwin E. Hollenback, president of the Master Builders' Exchange of Philadelphia. The work of the members of the American Ceramic Society now embraces not only the potter's art, to which it was originally limited, but also every branch of industry concerned with the working into form and the burning into permanent shape of silicate rocks and non-metallic minerals. It ranges from sewer pipe, common brick and terra cotta to spark plugs and optical glass. It embraces the foundation stones of modern building. Before the outbreak of the World War, and even during the initial stages of the war's progress, ceramic products held fourth place in the list of manufactures. Their total amounted in value to $400,000,000 as recently as 1914.

The products incident to the field of hardware and their distribution come home to everyone as intimately, for they include the carpenter's hammer as well as the farmer's plow, and they enter into the construction of the home, the factory and the office building.

People everywhere are affected in the prices they pay, in their health and in every phase of living and working by the developments in the countless departments of modern ceramics.

American Skyscrapers to Replace Dickens' Slums

London's greatest rookery district, valued at more than $1,000,000,000, formerly a portion of the estate of the Duke of Bedford, has been put on the market to a powerful American syndicate.

The district includes the historic Covent Garden Market, the Drury Lane Theatre, the Waldorf Hotel and the famous Bow Street police station.

All of these places are familiar to thousands of Americans.

The transaction is one of the greatest in the history of London's realty market. It follows on the heels of the acquisition of the Aldwich Island site by the Bush Terminal interests of New York, paying an annual rent of $220,000.

The territory is situated in the heart of Dickens' London, being bounded by the King's Way, the Strand, Queen Anne Street and Longacre.

It contains the century-old slums which the American syndicate proposes to clear and replace by modern business skyscrapers.

A National Architect Whom Time Almost Erased

Our article in the Dec. 24 issue under the above caption was a review of a paper originally written by Charles C. Wilson, Columbia, S. C. Mr. Wilson's identity with the account was inadvertently omitted.

Advocates Municipalization of Hospitals

The municipalization of voluntary hospitals is advocated by Dr. Duncan Forbes, medical officer of health of Brighton, England, in *The Hospital Gazette.* He admits that people owe a debt of gratitude to the voluntary subscribers, but since it is the same people every time who are the large subscribers, and since hospitals are getting so expensive, he feels that the taxpayer should be made to pay instead of the few large subscribers.

The establishment of state or municipal hospitals would lead, in his opinion, (1) "to an equitable distribution of the burden of upkeep; (2) to a less wasteful method of collection of funds; (3) to a more equal distribution of beds to which patients would be admitted on doctors' certificates according to the urgency of their cases, and not by subscribers' letters as at present; (4) to an early general increase in the number of hospital beds maintained; (5) to an improved medical service; (6) to closer co-ordination of municipal and hospital work."

For Better Administration of Forest Policies

In an effort to do its share to secure economy in state affairs and a reduction of waste, particularly by avoiding duplication of effort in various state institutions, the New York State College of Forestry at Syracuse has asked Conservation Commissioner George D. Pratt to call a state conference of all state agencies involved in forest advancement, for a delimitation of the respective fields of the various institutions. That the conference be called at the earliest possible date is the hope of the College of Forestry, in order that a program for the coming season may be outlined.

Commissioner Pratt has previously indicated his belief that there should be some such conference, at which arrangements might be made to prevent duplication of effort by such organizations as the State Conservation Commission, the College of Forestry, and the department of forestry of the State College of Agriculture at Ithaca. The present danger is that the various state institutions interested in forestry will overlap in their activities, and instead of conserving state funds by operating each along a definite specific line, will duplicate effort, and at the same time fail in doing specific work which should be done for the good of the entire state. The New York State College of Forestry at Syracuse has already avoided some such duplication by giving up its forest nurseries where trees were formerly grown for the state, believing that the furnishing of forest nursery stock was a province of the Conservation Commission, and not of an educational institution.

"The need is now so great for real constructive work, and the requirements of the various state institutions so great, that we should by all means avoid duplication of effort between various state agencies," said Dean Hugh P. Baker, in announcing the request for a conference on this subject, "and we believe that a harmonious agreement can be reached by such a conference.

"The New York State College of Forestry at Syracuse has believed from its inception that the most rigid economy should be maintained, and it was on this theory that during the war years we actually cut down our requests for state assistance, when other state institutions continued to ask steadily increasing appropriations for their work."

Inter-Relation of Building Commissions in New York State

A bill has been introduced by Assemblyman Charles F. Mos of Albany, N. Y., creating a commission to select sites for state buildings in the city of Albany. This commission is to consist of the Trustees of Public Buildings, the State architect and the Board of Contract and Supply of the City of Albany, and is created for the purpose of promoting architectural and landscape uniformity and unity of action between the state and the city by the adoption of a plan for the development of land now owned or hereafter to be purchased by the state for the erection of state buildings. This commission is also to be authorized to consider the question of the use of the property heretofore purchased for the proposed new state office building for a state park.

Plans for Rehabilitating Tuscany

Future American tourists in Tuscany will imagine themselves suddenly transported to California, if the plans of the American Red Cross now under way for rehabilitating the district recently laid waste by the earthquake materialize. As soon as news of the disaster reached American Red Cross headquarters in Italy, states *Modern Hospital,* relief parties were dispatched to Tuscany, the list of workers including two contractors. American Red Cross and Italian contractors discussed plans for rebuilding the devastated area, and the Americans recommended the low, solidly built type of house popular in California—of stone or concrete, with roof firmly attached.

While awaiting the decision of the Italian Government the natives are being housed in tents and portable houses. The portable house manufactured by the Red Cross in France, co-operating with the Friends' Unit and the French Government, has proved invaluable in this emergency. A large shipment of these houses was sent to the stricken district immediately upon receipt of news of the earthquake, and with hammer and nails they were soon erected. Instructions for erection accompanied each house, so that even an inexperienced workman could put it up without difficulty.

Bishop to Approve War Memorials

LONDON, Feb. 3.—Delightful British parish churches of Norman design are being spoiled by war memorials of typical twentieth century design, according to the bishop of Chelmsford. To erect these memorials, said the bishop, wrong-minded patriots took away a portion of the churches' most picturesque masonry and substituted something modern which was hideous, and which spoiled the whole outline of the buildings.

In the future permission of the bishop of the diocese must be obtained before a memorial may be instituted.

England Builds

Tilbury, England, has begun a great housing scheme involving an expenditure of £1,500,000 for the benefit of transport workers at the docks.

It is proposed to erect 1520 houses, which will be equipped with baths and all modern appliances for sanitation and comfort. These buildings will be grouped about a triangular central park.

"Roman de la Rose" Scripts Found in French Peasant's Garden

The "Roman de la Rose," one of the most priceless possessions of the Meaux Museum, has been found, it is learned from the *Public Ledger* of Philadelphia. It was stolen when on its way back to Meaux from the place of safety to which it had been removed at the time of the German offensive in 1918. The precious manuscript was discovered in a thorn bush near the railway line at Chatillon Sur-Seine.

One morning a workman, whose garden abuts on the line, found an old book in his garden. He gave no attention to the find, which did not interest him until he happened, casually, to read in a newspaper of the theft of the rare manuscript. Thereafter he made a search, with the result that all the missing manuscripts have been found. They are damaged slightly by rain, but can be restored.

It seems that the rare mediæval treasures had been packed in chocolate boxes and the thieves thought they were getting something good to eat. One can picture their chagrin on finding merely manuscripts, and their greater chagrin when they discover now they have let slip one of the most valuable rarities in the world to Bibliophiles.

Spain Introduces the Skyscraper

At a recent conference of property owners and architects in Bilbao, Spain, it was decided that owing to the great increase in land values there, twenty and thirty-story buildings will be built hereafter.

Government Needs Draftsmen

The United States Civil Service Commission announces that the Government is in need of a large number of draftsmen of various kinds. It is stated that fully 1000 draftsmen were appointed in the Government service during the last calendar year. During this period of reconstruction technical men are especially needed. Besides draftsmen there are openings for surveyors and computers, also assistant and associate engineers, electrical, mechanical, civil, chemical, and ceramic.

Further information and application blanks may be obtained from the secretary of the United States Civil Service Board at Boston, New York, Philadelphia, Atlanta, Cincinnati, Chicago, St. Paul, St. Louis, New Orleans, Seattle, or San Francisco, or from the United States Civil Service Commission, Washington, D. C.

Picture Bought for Song in South Africa May Be Priceless

A British army officer recently purchased for seven and one-half shillings ($1.80) in a Pretoria auction room a picture which art critics believe to be a missing Rembrandt—a work of priceless value. The picture, portraying the Crucifixion, has been sent to advisors of the great art gallery at The Hague for examination. The theory is that the picture was brought to South Africa by a member of a family of Dutch noblemen who were patrons of Rembrandt.

Competition for the Capitol Building for the State of Nebraska

A preliminary program approved by the Nebraska Sub-Committee on Competitions of the American Institute of Architects and adopted by the Nebraska Capitol Building Commission has been issued. The final stage proposed in this competition is to be confined to the three premiated in the preliminary stage and seven, more or less, to be chosen from outside the state and invited by the Commission to compete. The names of the competitors in the final competition have not yet been announced. Each competitor in the final stage with the exception of the winner will receive $2,000, payable immediately after the award has been made. Thomas R. Kimball of Omaha, Neb., and president of the American Institute of Architects, has been retained as professional adviser. It is the intention to judge and evaluate the competing drawings, theses and cost statements before the identity of the authors is disclosed. The Commission will appoint at the close of the preliminary stage of the competition a competent architect from outside the state to act with it as a jury to determine the winners in the preliminary stage. Judgment will be first rendered on the anonymous showing cost as of two-thirds the value of the whole, the identified exhibits being evaluated thereafter separately and final award made on the average of the two. Further information as to this competition may be obtained by addressing George E. Johnson, acting secretary, Nebraska Capitol Building Commission, Lincoln, Neb.

Obituary

John C. Olmsted, widely known landscape architect, who designed many exposition grounds and park systems throughout the country, died at his home in Brookline, Mass., in his sixty-eighth year. He planned the grounds of the World's Fair at Chicago, and exhibitions at Seattle and Winnipeg, Manitoba. Park systems laid out by him include those at Boston, Chicago (South Parks), Buffalo, Rochester, N. Y., Hartford, Conn., Louisville, Milwaukee, Seattle and Spokane.

Mr. Olmsted was a nephew and the adopted son of Frederick Law Olmsted, the landscape architect of Central Park, whose partner he became in 1898, and with whom he was associated in his most notable work.

Personals

Francis Averkamp has moved his offices from 63 Park Row, New York, to 600 West 181st Street, same city.

James Earle Miller, for fifteen months lieutenant in the Quartermaster Corps, U. S. Army, has reopened offices for architectural practice at 23 South Sixteenth Street, Philadelphia. Samples and catalogues desired.

M. Leo Elliott, formerly of Bonfoey & Elliott, architects, and later in the service, has now opened offices in the Hampton Building, Tampa, Fla., for architectural practice. Catalogues and samples are desired.

H. L. Wardner and George D. Tesch announce the dissolution of the firm of Wardner & Tesch. Mr. Wardner continues his practice in the office at 508 Everett Building, Akron, Ohio. Mr. Tesch has opened offices at 404 Everett Building and desires catalogues.

Architects Dittoe, Fahnestock & Ferber have opened offices in the Conrad Building, Cincinnati, Ohio. This was stated in our issue of Dec. 24 with the name Garber for Ferber. Mr. Frederick W. Garber is still of the firm of Garber & Woodward, Union Central Building, Cincinnati.

Paul S. Robinette, Louis U. Bruyere and Donald E. A. Cameron, employees of the late Thomas F. Huber, architect, of Toledo, Ohio, have taken over and are carrying on his practice under the name of Robinette-Bruyere-Cameron, architects and engineers, at the same location, Suite 755, Spitzer Building, Toledo, Ohio. The new partnership will be pleased to receive literature and samples from the building material houses as well as to meet their representatives.

Mr. Fred B. O'Connor, who has been with the architectural department of the State of New York as special architectural designer for the past fifteen years, has resigned to accept the position of chief draftsman and office manager for Russell and King, architects, Syracuse, N. Y. Mr. O'Connor has personally designed some of the most important State buildings and institutions in New York State. Some of his best work is expressed in Cornell Drill Hall, Ithaca; Troop B Armory, Albany, and the development of Sing Sing and Wingdale prisons.

News from Various Sources

Northern Manitoba is on the threshold of a development era. A railway is to be built into the Athapapusko Lake country, and a smelter to be established. A city of 20,000 people is expected to spring up in the next three years.

* * *

It is understood that an application will be made shortly to the Dominion Railway Commissioners for an increase in freight rates; an advance of 20 per cent all round will probably be asked for, and if it is granted it will have an important bearing upon the cost of living and the entire fiscal situation.

* * *

Dr. Reusch, Austrian Minister of Finance, in requesting the Assembly to sanction the immediate appropriation of 2,750,000,000 crowns, largely for the purpose of purchasing food, disclosed that $48,000,000 of the American loan has become exhausted.

* * *

Holyoke, Mass., has a rehabilitation school where disabled veterans of the World War can learn trades to make themselves self-supporting. Holyoke furnishes the building, the machinery and the money. The school is in an eight-room building. It has accommodations for retraining men in the following numbers. Machine shop practice, 55 or 60; drafting, 15; pattern-making, 5; carpentry, 10; composition and press work, 6. The school will bring the men back to at least their former earning capacity.

* * *

The American Academy of Fine Arts, overlooking Rome from the Janiculum Hill, has resumed its normal work. Those students who did their duty during the war have laid aside their uniforms and with added fervor have taken up the brush and chisel. The American Academy is by degrees, as the passport regulations become easier, filling up. It now has twenty students and expects soon to have the normal number of twenty-five. It is already so pressed for room that they have had to put a few women students in a nearby villa.

Weekly Review of Construction Field

Comment on General Condition of Economics with Reports of Special Correspondents in Prominent Regional Centers

THERE seems much promise in the policy formulated by the committee of labor relations of the Cleveland Chamber of Commerce. Their plan suggesting constructive work is being directed toward reaching the necessary harmony between labor and employers. "Representative negotiations" is their term used to replace "collective bargaining" and, as defined, is a provision for negotiations between employer and a committee of his employees aided, if they so desire, by an advisor of their own choosing. The plan is an adaptation of the methods of the railroad brotherhoods as well as those of the "shop committee."

The plan opposes compulsion by employer or employee to maintain union or non-union shops, but allows for the possibilities of mutual agreement upon matters of this character. It recognizes that the eight-hour day has become more or less standard. But probably its most important declaration is that the right of the public to service is above the employee's right to strike or the employer's right to "lock out" and that it advocates uninterrupted service to the public pending settlement of disputes and proposes publication of facts relating to labor controversies that the public may be advised of the merits.

All this seems a simple exhibition of common sense. The *New York Sun* made a calculation that the loss through strikes in 1919 was $2,000,000,000, of which capital lost $1,266,357,450 and labor $723,478,300. The public's loss in money and inconvenience is not computed. Figures announced by the U. S. Shipping Board are of a loss by strikes during the month of January amounting to $37,000,000. This figure also takes no account of the losses to the public due to congestions in the ports, spoilage of perishable cargo and the delays of food and supplies. Such absolute and public waste is plain folly.

WHILE it is true that labor has succeeded in securing the elimination of the anti-strike clause from the railroad legislation; having the right to strike does not mean that they will use that right. The Grand Chief of the Brotherhood of Locomotive Engineers is a member of the Cleveland committee which has placed the public's right to service first.

So wide-spread is the realization of the great need for production and so loud the demand for housing throughout the whole country that it becomes difficult to believe that labor unions will be willing to face the adverse public opinion which a stoppage of work would entail.

The present outlook is dark in Chicago, but the men cannot fail to hear the note struck by the committee of labor relations of the Cleveland Chamber of Commerce nor the response of the long-suffering public who are quite unable to judge whether the claims of striking workmen are, or are not, just. They only know that their urgent wants are not satisfied nor given even the slightest attention. While so many people live in hotels or boarding houses with goods, furniture, pictures and books in storage, waiting for an apartment to be finished that they may move in and live in comfort—and the unfinished apartment stands day after day unfinished and idle—there is a limit to patience and there is a growth of vigorous public sentiment. The lesson, obviously, has little to do with the way the profits of production are to be divided between capital and labor, but upon production it is insistent.

Wages and Production.

It is said by *The Wall Street Journal*: "There is evidence that projectors of building enterprises have to a great extent abandoned the idea of waiting for a fall in prices. High costs as a factor retarding construction are not given the attention that they were a year ago. Although costs are now higher than ever before, the belief is quite general that there can be no material reduction in the near future and many building enterprises planned in the last three years will be started this year."

This is substantiated in many ways. It means that capital accepts its part of the responsibility to satisfy the imperative demand for building production and is going ahead despite all the practical difficulties of the present and the risks that future returns from such expenditures may be inadequate. Despite the objection which is voiced against increases in rent to a point where legislation is being brought to bear upon "rent profiteering." Taxes, with the increase of the cost of government, seem likely to become even more expense, and yet so insistent is the demand for housing and factory space that work is contracted to tremendous values.

The $235,000,000 reported by the Seventh Federal Reserve District as work contracted for during January, even if divided in half to allow for the increase in comparative costs, is $52,000,000 higher than the average for that month during the ten years preceding and a gain of 78 per cent over that average. This 78 per cent is not an inflated total but shows capital available for so much of an increase in production.

According to the U. S. Department of Labor, average wages have increased 61 per cent in the past ten years while the regular hours of labor have decreased by 8 per cent per week. The wages of a mason's laborer in New York have increased during that period from $1.50 to $6.50 a day. But the most discouraging phase of the situation is that generally throughout the attitude of labor, there can be found no endeavor to increase production and thus make the necessities of life more plentiful and available for all, but there is instead a feeling that wealth is the money which passes from hand to hand and for which they give just so many hours of their time. How that time is spent is not regarded by them as their responsibility. What happens to the material which passes through their hands is apparently not their greatest interest. This, decidedly, is not good craftsmanship. It is a waste comparable to the wastage of strikes and in this case accountable almost wholly to the lack of responsibility of the mechanic. The cause seems fundamental in our national character. Are we called a nation of materialists because we haven't the slightest respect for material? We have gotten on in a way *nouveau riche*. But our natural resources are not unlimited as we shall have some day to learn and it is not too early to start now.

In England, an association is developing equally supported between the employers and the building trades; a conference, so to speak, for the development of constructive ideas and methods of work. It takes no cognizance whatever of the arbitration of wage disputes but centers solely upon the development of working conditions which shall increase production and the standing and reputability of the trades. English radicalism is strongly col-

ored nowadays with the guild idea. If it leads the men who work with their hands toward finer craftsmanship, if the mechanic gets to think better of his work in life and less bitterly of the silly extravagances of the rich, the progress of improved living conditions for all the people will make strides.

(*By Special Correspondence to* THE AMERICAN ARCHITECT)

CHICAGO.—Only a few days ago the Associated General Contractors' Convention in Chicago announced that "a building boom amounting to $6,000,000,000 and lasting five years, which is expected to relieve the shortage of dwellings, is to be launched in the spring." An announcement which referred to the whole nation, including Chicago.

Since then two things have happened in Chicago. The leaders among the building trades unions got their heads together and decided to make a blanket demand for $1.25 per hour for all union men in the building industry: carpenters, plumbers, masons, etc. This increase was to be asked despite the fact that the carpenters only last fall were given an increase to $1 an hour for an eight-hour day—after they had remained out on strike for ten weeks and delayed building at a critical time.

Then, added to this complication, is the steady increase in the cost of building materials which climb from week to week until they are almost prohibitive in some regards. Coupled with these labor and material difficulties is the lack of sufficient transportation to enable the needed building construction to proceed. That the return of the railroads to private ownership on March 1, will further complicate matters is almost certain, for the public will demand more of the carriers and expect immediate relief from the shortcomings of federal control.

But so far as Chicago is concerned the outlook just at this time is not very rosy and it looks as though the "building boom" is to be delayed. Already several million dollars' worth of improvements which were planned have been ordered held in abeyance until the owners can figure with some degree of accuracy as to the probable costs.

Voters of Chicago have approved a bond issue of $20,000,000 to begin work on the Lake Front improvement which is to extend over a period of fifteen years. This is the biggest public improvement ever undertaken by Chicago and ultimately will mean practically a rebuilding of the city. The city council also has passed the zoning ordinance which will be worked out in conjunction with the general city plan.

Conditions affecting the steel market changed but little during the past week. Curtailment of operations is still being forced owing to the car shortage and the railroad embargoes which are being felt by practically every steel company in the eastern part of the country.

Reports seem to indicate that there was a slight decrease in the demand during the past week, but this is not considered significant as it is probably due to the fact that inasmuch as the mills are sold out for months ahead a policy of waiting has been adopted with regard to accepting new contracts. Consumers have found their recent orders are being declined and they are therefore deciding to wait for some new development which would bring about a different situation, at least temporarily. Some of the largest consumers have recently expressed the opinion that prices will not come down for more than a year and that it should be the policy of all users to place their orders for future requirements.

Official trade figures confirm statements made here that there had been a decrease in structural steel buying during January. It is shown that orders placed amounted to 75 per cent of capacity, compared with 85 per cent in December. February is likely to be somewhat below January, according to some authorities, although a rush of buying between now and the end of the month might change that prospect.

(*By Special Correspondence to* THE AMERICAN ARCHITECT)

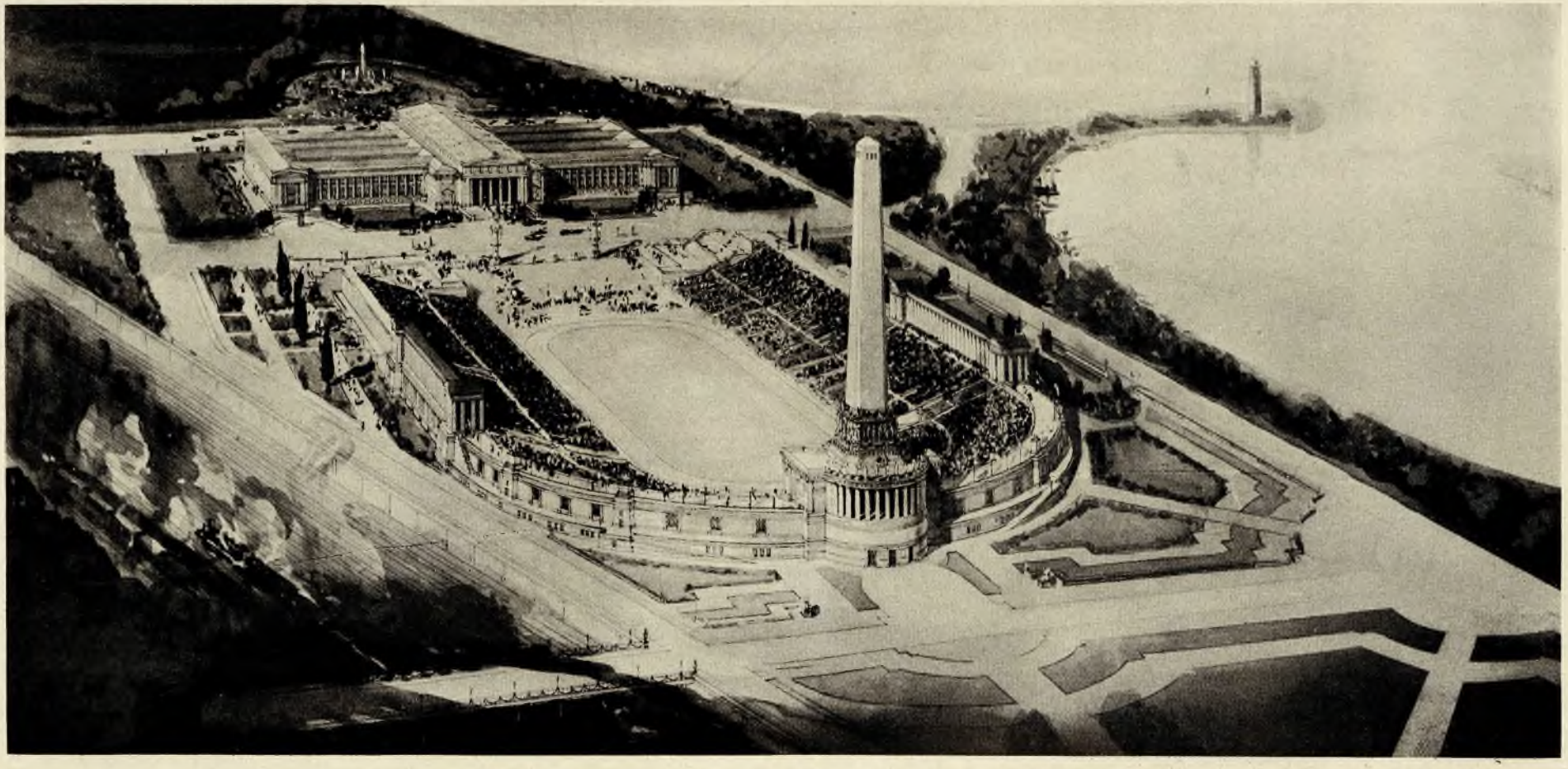
SAN FRANCISCO.—No particular change occurred in the local markets for building materials this week. Prices remain as they were quoted the week previous, but various items of material are steadily becoming more difficult to obtain.

The San Francisco architects and contractors find it extremely hard to get hold of steel in the quantity and shape which they need. In fact, the steel situation is so acute just now that a number of contracts have been placed, of necessity, aside until the market is not so tight.

In spite of material problems, however, building activities are still forging ahead, growing steadily in volume, with indications of at least another twelve months of housing shortage.

Brick and clay manufacturers report that they are behind on orders and there is some speculation as to whether the demand can be entirely supplied even after the opening of the plants for the 1920 season.

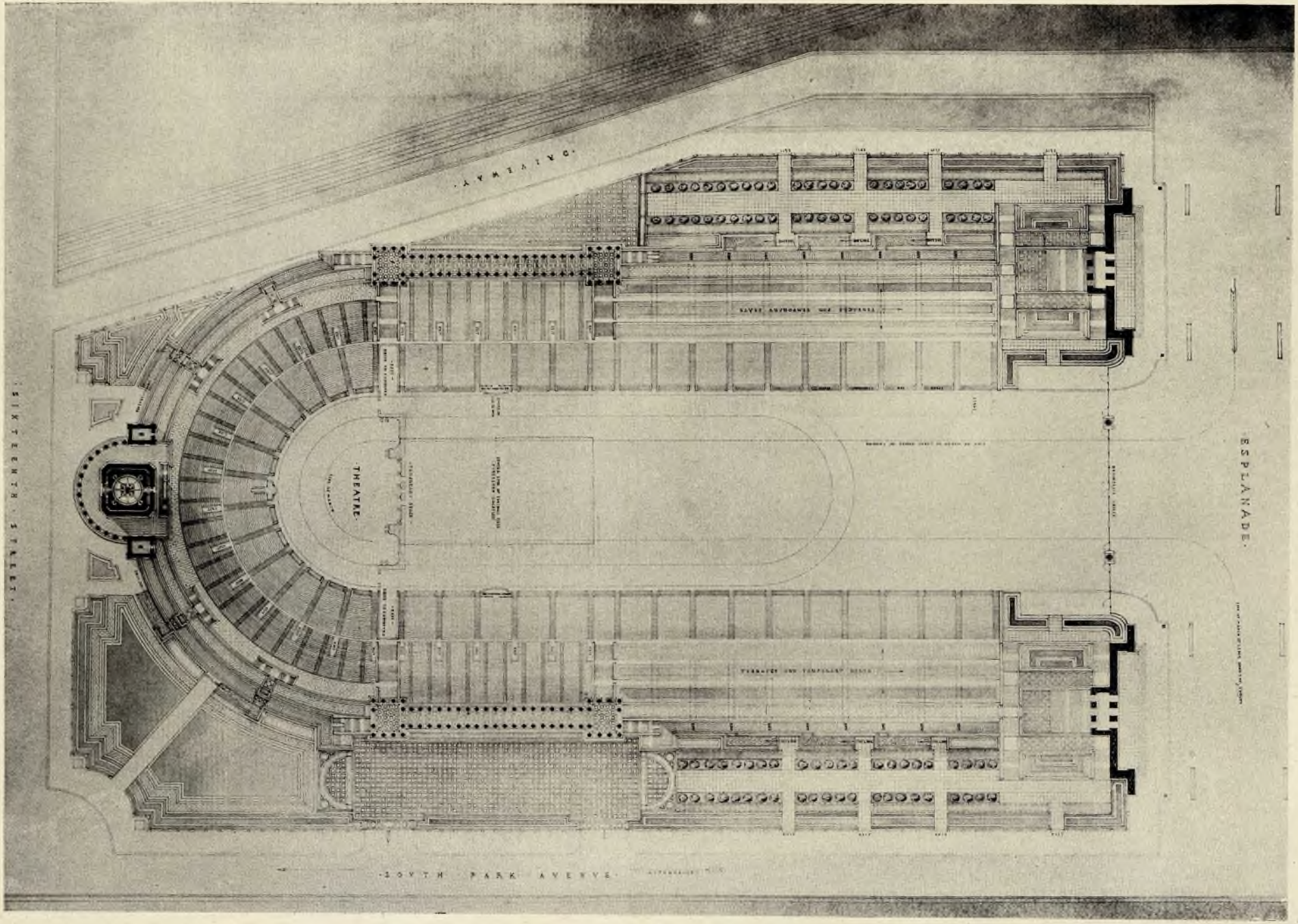
Unless weather conditions interfere, lumber interests will put their mills into operation a little earlier this year. If the winter continues mild as it has been so far this will be possible. While local offices are hard pressed to meet orders, there are hopes of easing up the market as soon as the new cut is ready for delivery. According to present reports, prices will show an upward tendency and will maintain a high level for an indefinite period.



PERSPECTIVE

COMPETITION FOR A STADIUM ON THE LAKE FRONT, CHICAGO

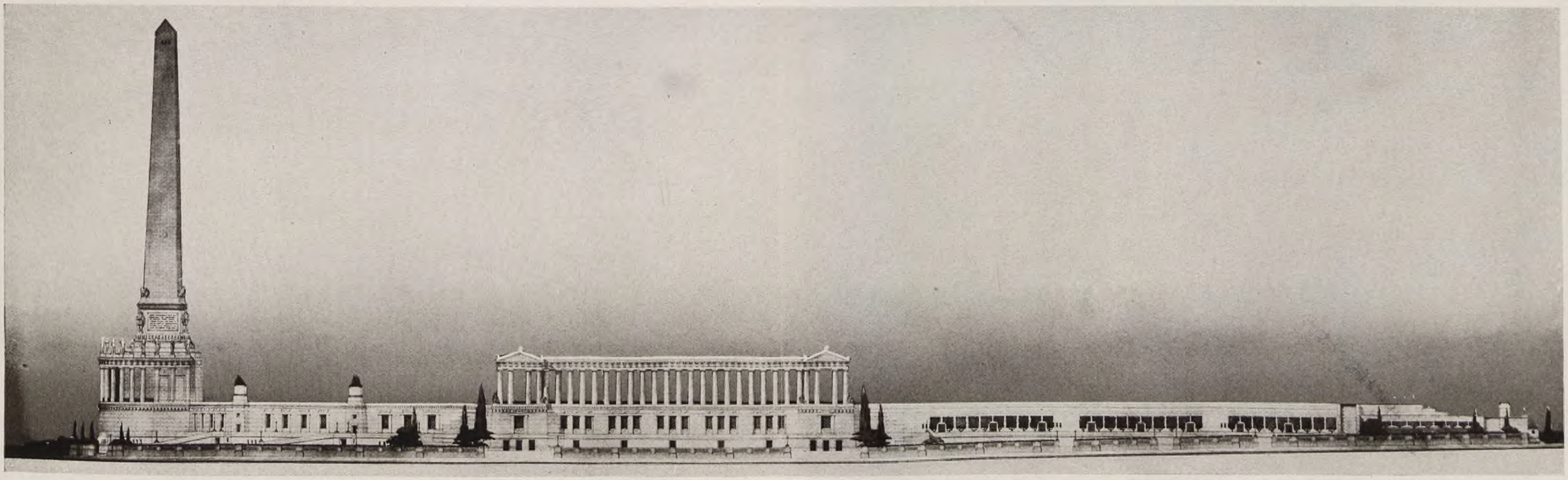
FIRST PRIZE, ACCEPTED DESIGN—HOLABIRD & ROCHE, *ARCHITECTS*



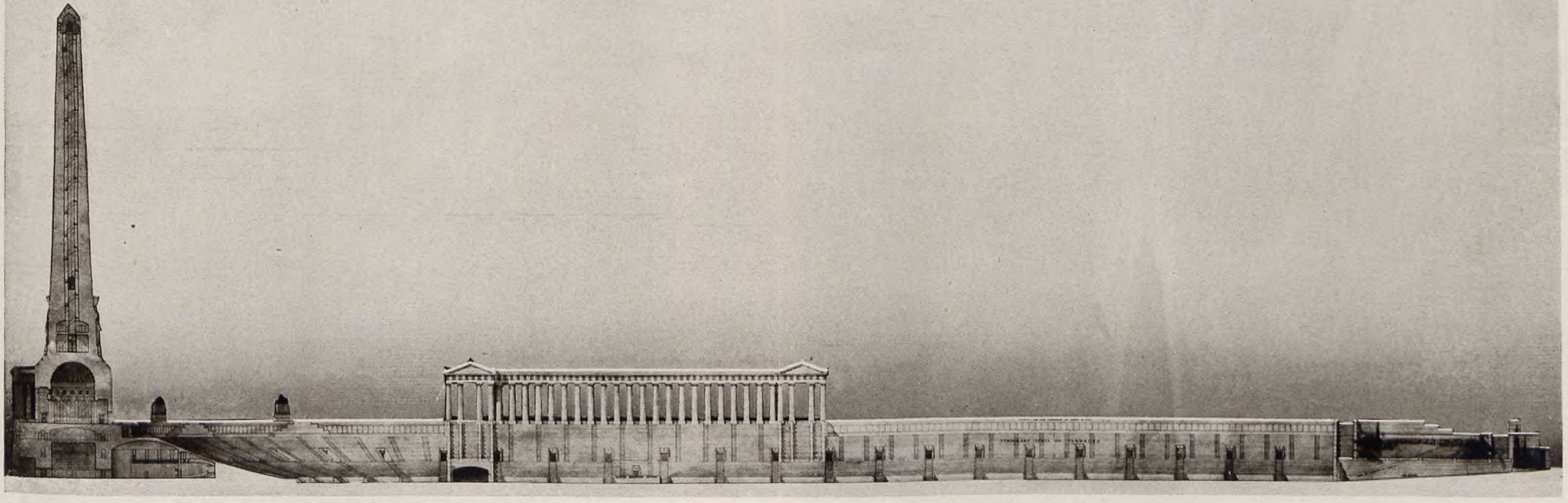
PLAN

COMPETITION FOR A STADIUM ON THE LAKE FRONT, CHICAGO

FIRST PRIZE, ACCEPTED DESIGN—HOLABIRD & ROCHE, *ARCHITECTS*



EAST ELEVATION



LONGITUDINAL SECTION, LOOKING WEST

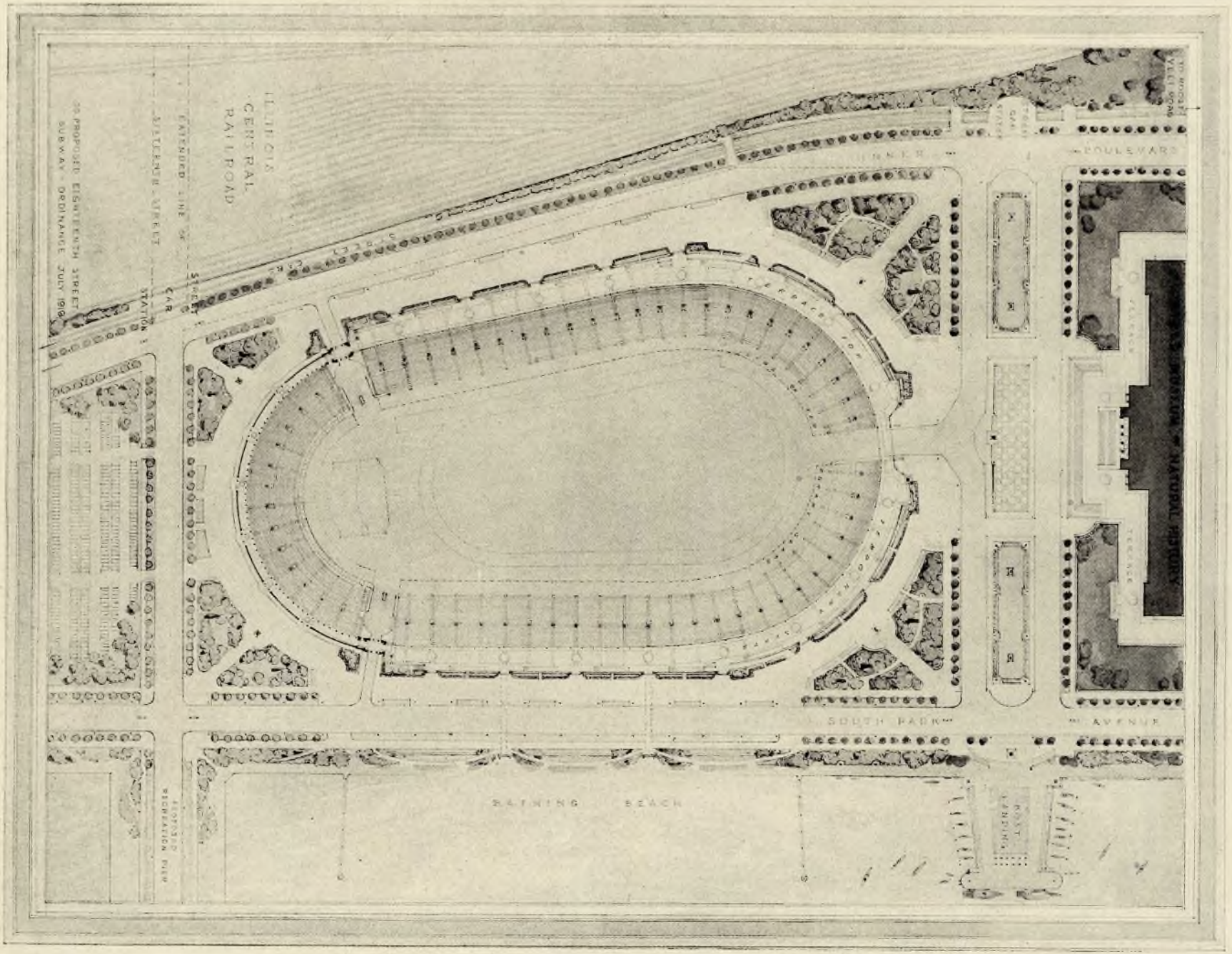
COMPETITION FOR A STADIUM ON THE LAKE FRONT, CHICAGO

FIRST PRIZE, ACCEPTED DESIGN—HOLABIRD & ROCHE, *ARCHITECTS*

PERSPECTIVE

COMPETITION FOR A STADIUM ON THE LAKE FRONT, CHICAGO

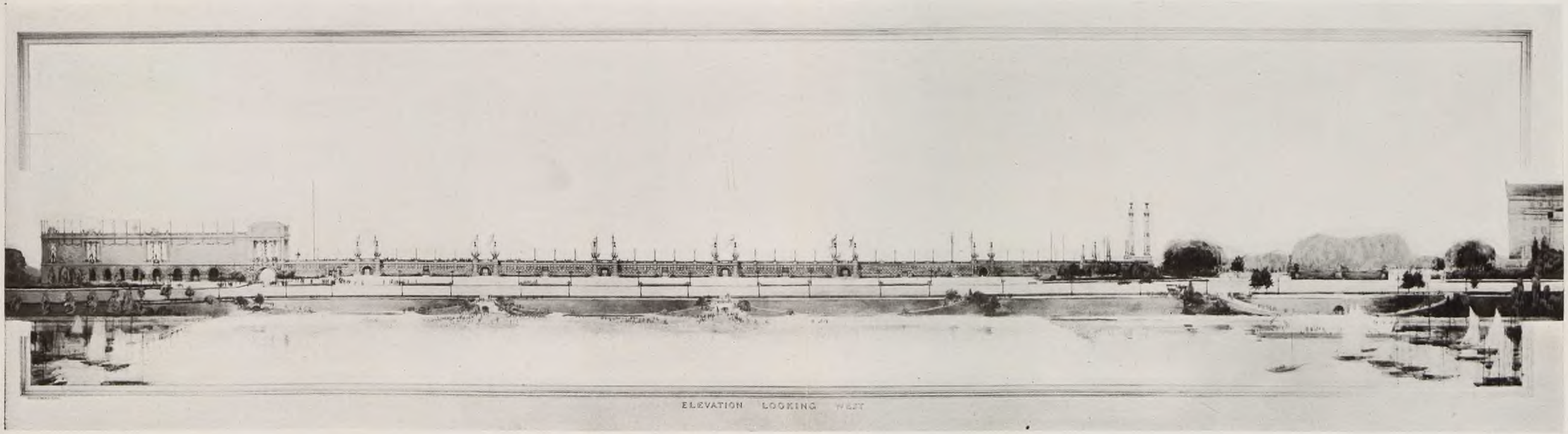
DESIGN SUBMITTED BY EDWARD H. BENNETT AND WILLIAM E. PARSONS, *ARCHITECTS*



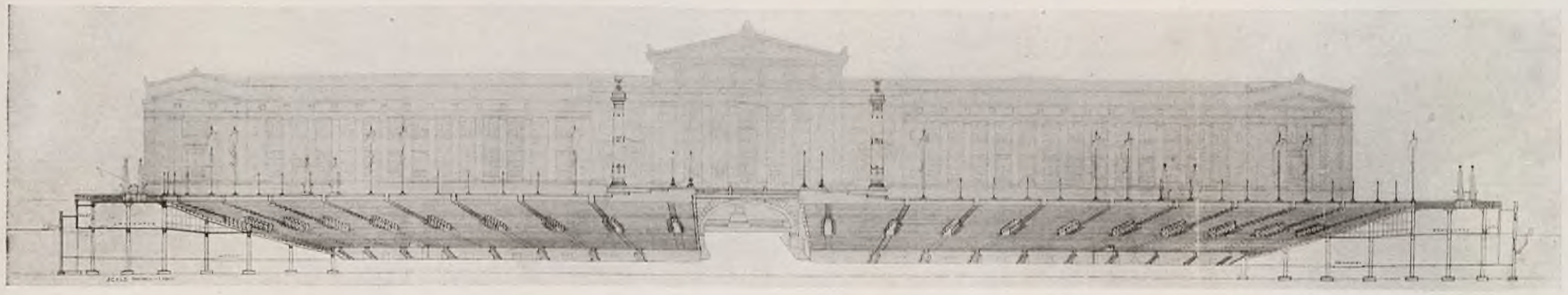
PLOT PLAN

COMPETITION FOR A STADIUM ON THE LAKE FRONT, CHICAGO

DESIGN SUBMITTED BY EDWARD H. BENNETT AND WILLIAM E. PARSONS, *ARCHITECTS*



ELEVATION LOOKING WEST

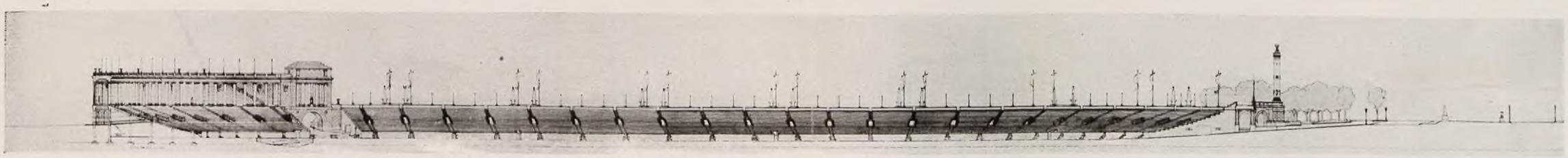


TRANSVERSE SECTION LOOKING NORTH

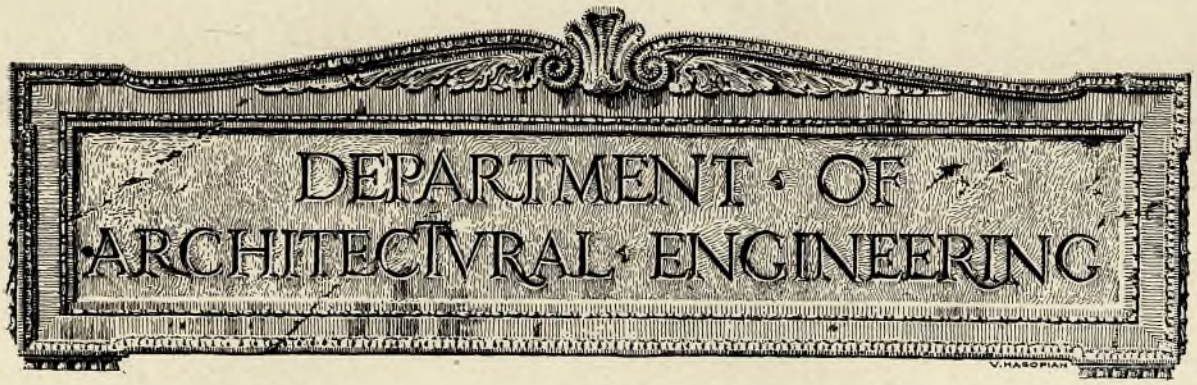
COMPETITION FOR A STADIUM ON THE LAKE FRONT, CHICAGO

DESIGN SUBMITTED BY EDWARD H. BENNETT AND WILLIAM E. PARSONS, *ARCHITECTS*

SOUTH ELEVATION



LONGITUDINAL SECTION LOOKING WEST



National Conference on Concrete House Construction, Chicago, February 17, 18 and 19, 1920

CONCRETE, that ancient yet modern material of construction, has been fast coming into its own. During its development, there have sprung up, mushroom like, numerous concerns connected in some way with the industry. These have consisted of cement manufacturers, contractors, manufacturers of concrete handling and other machinery and those turning out various cement products, such as the cement block. These allied yet separate organizations have grown, each along its own line, and each independent to a large extent of the other. Naturally, such a development did not make for the best interests of concrete, and it remained for those who organized and carried through the National Conference on Concrete House Construction to correlate the efforts of all interested in such construction, to the end that the production of much needed houses might be expedited.

While reinforced concrete has been used to a large extent in the construction of commercial buildings, it has been made use of to a limited extent only in house construction. There have been several "housing schemes" in which concrete has been used partially or exclusively for the structural part of the buildings, such for instance as the Ingersoll houses at Phillipsburg, N. J., the Unit Construction Company's work at Youngstown, Ohio, the Van Guilder type of wall construction at the Carnegie Steel Company's housing development at Steelton, Ohio, or the houses at Donora. But these have been the exceptions not the rule.

Realizing that the demand for homes was greater than could be met by the use of the usual types of construction, and believing, as a result of the already successful use of concrete in house construction, that its employment should be increased, many allied organizations combined their efforts in planning and carrying out the National Conference:

No attempt will be made to give a detailed report of the proceedings here, but mention of the papers presented, some of which will be published in part at a later date, will give some idea of the scope and aims of the conference.

At the opening session, February 17, three papers were read, as follows:

(1) "Housing Needs from the Viewpoint of Industry." By John Glass, Manufacturers' Record, Baltimore.

This was an excellent paper bringing out the correlation between industrial production and proper housing.

(2) "Moral Aspects of the Housing Problem." By John M. Vander Muelen, D.D., Oak Park, Ill.

Mr. Vander Muelen emphasized the fact that the *home owner* becomes a national asset. There is no better way to calm industrial unrest and prevent the spread of Bolshevism, than to induce employees to invest their savings in homes. Another point which received emphasis was the desirability of building *individual* houses instead of the multi-family type. This is an essential feature of a successful industrial housing scheme.

(3) "The Status of the Concrete House as Regards Building Codes." By Fred W. Lumis, Building Commissioner, Springfield, Mass.

The salient feature of this paper was its emphasis of the lack of building codes covering concrete house construction, and the need of formulating a standard and well considered code which might be adopted by all municipalities.

In the evening an informal joint dinner was held with the following organizations: The Building Officials' Conference, the American Concrete Institute, Associated General Contractors of America, Concrete Products Association, Concrete Block Machinery Association. The speakers were John J. Murphy, Ex-Tenement House Commissioner, New York; Hon. James P. Goodrich, Governor of Indiana; James J. Davis, Pittsburgh, Director-General, Loyal Order of Moose.

At the second session, February 18 (afternoon),

papers were presented by Irving K. Pond, Architect and Henry Holsman, Architect. Mr. Pond's paper was published in full in the AMERICAN ARCHITECT issue of February 11, 1920.

Reports were submitted by various committees at the evening session. The several methods of financing home building were presented by James F. Basiger. Among the other things he mentioned the Calder Bill now pending in Congress, which proposes to establish governmental aid to the home builder in a manner somewhat similar to that now given the farmer by the Home Loan Banks. Walter A. Hull reported on fire prevention.

An interesting paper entitled "New Developments in Surface-Treated Concrete and Stucco," by J. C. Pearson, U. S. Bureau of Standards and J. J. Earley, Sculptor, Washington, D. C., was also read and is of sufficient interest to warrant its presentation in full at a later date.

On February 19 (morning) a joint session with the Concrete Products Association was held.

The subject of farm housing was presented by K. J. T. Ekblaw.

An interesting paper on "Concrete and Cement Roofings" by D. Helmuth, indicated that considerable progress is being made in the manufacture of a satisfactory cement roofing tile.

"Insulation and Damp-proofing of Concrete Walls" was presented by Noland D. Mitchell, Structural Engineer, Supervising Architect's Office, U. S. Treasury Department. This is an important phase of house construction.

During the afternoon session the reports were made by the following: Committee on Monolithic Houses, Leslie H. Allen, Chairman; Committee on Unit Constructed Houses, J. J. Boyd, Jr., Chairman, and the Committee on Plastered and Gunite Concrete Houses, Emil G. Perrot, Chairman.

In order to further promote the objects of the conference the following standing committees were appointed:

Committee on Architecture and Design (Joint committee representing Illinois Society of Architects and Illinois Chapter American Institute of Architects): Robert Spencer, Chairman; Melville C. Chatten, John Reed Fugard, Bernhard C. Greengard, Ira W. Hoover, George C. Nimmons, Irving K. Pond.

Committee on Monolithic Houses: Leslie H. Allen, Springfield, Mass., Chairman; A. C. Irwin, Chicago, Secretary, and nine members.

Committee on Unit Constructed Houses: W. W. Boyd, Jr., St. Louis, Chairman; A. C. Irwin, Chicago, Secretary, and four members.

Committee on Concrete Block Houses: R. F. Havlik, Mooseheart, Ill., Chairman; E. S. Hanson, Chicago, Secretary, and thirty-two members.

Committee on Plastered and Gunite Houses: Emile G. Perrot, Philadelphia, Chairman; J. V. Schaefer, Chicago, Secretary, and four members.

Committee on Concrete and Cement Roofings: D. Helmuth, Cleveland, Chairman; E. L. Stephani, Chicago, Secretary, and seven members.

Committee on Fire Protection: Walter A. Hull, Washington, D. C., Chairman; J. E. Freeman, Chicago, Secretary, and five members.

Committee on Financing Homes: James F. Basiger, Chicago, Chairman; Leslie H. Allen, Springfield, Mass., Secretary, and six members.

Committee on Farm Housing: K. J. T. Ekblaw, Chicago, Chairman; W. G. Kaiser, Chicago, Secretary, and six members.

Those who attended look forward with expectancy to a second conference which will undoubtedly result.

It is clearly realized by all who are allied with concrete construction, that it is not by any means a cure-all for building ills, but that it has a rightful and legitimate place in the building industry. It may not always be suitable to construct the structural part of a building entirely of concrete and in such cases it must be combined with other materials to produce a suitable structure. In places where sand and gravel are plentiful, it would seem to have an economic advantage over other products manufactured at a distance.

Probably no more comprehensive and well considered argument setting forth the use and abuse of concrete in construction has been presented than was set forth by Irving K. Pond, F. A. I. A., past president of the Institute, previously referred to.

Concrete houses do not necessarily require extreme standardization to produce economy. Any type of construction which will not readily yield itself to the architect's conception of what a home should be is *not* one which will commend itself to him. The further development of concrete homes along truly artistic as well as economical, sanitary and fire preventive lines will indeed be a notable step in advance, and such a result, it is felt, has been brought nearer realization by the work of the conference just closed.

American Society of Heating and Ventilating Engineers Holds Annual Meeting in New York City

THE twenty-sixth annual meeting of the American Society of Heating and Ventilating Engineers, held at the Engineering Society Building, 29 West 39th St., New York City, Jan. 27 to 29, 1920, proved to be one of the most lively and interesting as well as the most largely attended of any of the meetings so far held.

E. Vernon Hill, of Chicago, was elected president for the ensuing year.

The outgoing president, Walter S. Timmis, in opening the first business session of the convention, reviewed events of the past year, as related to the heating and ventilating industry, and urged putting into action the motto "LET US WORK."

A number of interesting and instructive papers were read and discussed. John R. Allen, in charge of the research laboratory, presented a paper on "Heat Losses From Direct Radiation," as well as one on "Determination of Radiant Heat Given Off by a Direct Radiator." The experiments from which data for these papers were derived covered a wide range of radiators and included tests on various forms.

One of the sessions was entirely devoted to papers on ventilation, and considerable discussion took place relative to the merits of Natural versus Artificial Ventilation. E. L. Hallett of St. Louis, presented a paper entitled "An Advance in Air Conditioning in School Buildings" and stated that ozone apparatus had been used with good effect in a downtown school in St. Louis where the attendance was made up of children of the foreign element, and the result from a questionnaire submitted to teachers and principals asking their opinion of the system was a statement that the attendance was better, that they did not feel so fatigued, that the children were less restless and that they did better work, and the efficiency of the apparatus was splendid. In answer to several inquiries Mr. Hallett stated that data on the system was available from the Board of Education of St. Louis, and could be obtained at any time.

At the evening session of Jan. 28, papers devoted to heating boilers were presented, including two dealing with the magazine feed boiler, one of which by Charles F. Newport dealt with its relation to fuel conservation and the other by E. C. Molby covered the development of this type of boiler. Both were vigorously discussed.

In the discussion of the subject of boilers, considerable criticism was voiced as to the construction of chimney flues. Boiler manufacturers and heating engineers stated the impossibility of the heating apparatus functioning properly unless the flue was of the proper size and height and also was well constructed. The opinion was expressed that leaking flues are the source of more heating trouble than any other one item.

The morning session of Jan. 29 was devoted largely to papers dealing with the use of fuel oil. This topic was preceded by the presentation of a paper on the prevention of corrosion of pipe, by F. N. Speller and W. H. Walker. The paper dealt largely with a de-activating apparatus through which the water first passes prior to entering the piping sysem. The results of experiments were set forth.

The papers presented dealing with the topic of fuel oil were as follows: Oil as a Fuel for Boilers and Furnaces, by H. H. Fleming; Oil Fuel, by F. W. Staley; Fuel Oil Equipment, by John P. Leak; Fuel Oil and Its Application to the Generation of Steam, by W. C. McTarnahan and Oil versus Coal, by David Moffat Myers.

Considerable discussion on the relative merits of oil and coal as a fuel, the availability and cost of oil, etc., transpired after the reading of these various papers.

While the men attending the convention were busy at the professional sessions, various entertainments were arranged for the visiting ladies.

On the closing day former Secretary of Commerce William C. Redfield spoke on the commercial relations of the United States. Among other remarks, Mr. Redfield said: "The primary reason for the Declaration of Independence, which was addressed to the world, was a deep regard for the opinion of mankind. Washington said: 'We shall have no entangling alliances.' We are mixed up in the affairs of the world, for Europe owes us $15,000,000,000. The problem is how to get unmixed. This problem is of interest to everyone, for the quicker the debt is paid, the quicker the sum on the stub of the check for the income tax will be reduced." In closing he stated: "The problem for American commerce is supplying herself and upholding the world. We must have the good-will of the world. Good-will is an unseen reality and we would not dare to lose it. America is in an inspiring position and it must work and serve."

A dinner at the Hotel McAlpin, Jan. 29, closed the Society's most successful annual meeting.

Common Brick Manufacturers Hold Annual Convention at Columbus, Ohio, February 16 to 18, 1920

THE Second Annual Convention of the Common Brick Manufacturers' Association of America was held Feb. 16-17-18 at the Hotel Deshler, Columbus, Ohio, and was one of the most enthusiastic and successful meetings of brickmen ever held.

For a young organization—the Association is only one year old—its strength is remarkable, its members now comprising all of the most up-to-date brick manufacturers of the United States. The total output of brick of its members borders on four billion yearly.

One of the first questions decided by the Convention was that of the standard size of brick. A paper was read by one of the officers of the Association recommending the adoption of the American Face Brick size (2¼ x 8 x 3¾.. Arguments were presented showing the advantages to the architect, the contractor, and the brickmaker himself which would follow the universal adoption of this standard.

Letters were also read from Prof. A. V. Bleininger and Warren E. Enley of the U. S. Bureau of Standards expressing themselves favorably toward the adoption of a uniform standard size for brick.

Committee C-3 of the A. S. T. M. convened in Columbus the following day, and changed their tentative size to meet the size adopted by the Common Brick Manufacturers' Association.

The standard sizes of the A. S. T. M., the American Face Brick Association, the Common Brick Manufacturers' Association of America, and The National Brick Manufacturers' Association are onw exactly the same—2¼ x 3¾ x 8".

Mr. Thomas R. Preece, the Vice President of the International Bricklayers' Union, followed with a talk on "How the Brick Manufacturer and Bricklayer May Co-operate." In the course of his remarks Mr. Preece deplored the tendency of the average contractor in refusing to employ apprentices. Mr. Preece stated that twenty-five thousand more apprentices would be in process of training even now if contractors would employ them.

Mr. Warren S. Griffiss, of Baltimore, followed with a paper on "The Beauty of Common Brick." Mr. D. Knickerbacker Boyd, F. A. I. A., of Philadelphia, followed with a paper on "The Architect and the Industry—The Vast Possibilities of Common Brick." After this paper the following resolution was passed:

WHEREAS, The Common Brick Manufacturers' Association of America, in Second Annual Convention, assembled this eighteenth day of February, 1920, at Columbus, Ohio, has been enlightened and inspired by an address of inestimable value to its organization, its members and the future of the product which it champions, and

WHEREAS, we wish to make proper recognition of the benefits of said address, by the adoption of a resolution complimentary to its author, Mr. D. Knickerbacker Boyd, now, therefore, be it

RESOLVED, that we hereby do so and place our organization on record as firmly believing in the principles herein set forth;

First, that the building policy of the people of this country has heretofore been too largely left to individual initiative which, without authoritative data from any one centralized agency, governmental or otherwise, has been conducted along lines based on lack of adequate information as to the source, nature, and appropriate use of materials.

Second, that the many buildings constructed of wood have been largely responsible for exhausting the supply of lumber and causing the destruction of forests and standing timber produced by long years of growth and development, impossible of replacement without similar long years of growth, if replaced at all.

Third, that the destruction of much of such growths of timber seriously affects the watersheds of this country, results in an enormous economic loss through lack of fullest conservation of the country's natural resources, and impairs the landscape, scenic effects, and privileges of the people.

Fourth, that the products of nature's growths of timber should not be used in vertical structural features of buildings or for their roof coverings or elsewhere that any unburnable material might be used and that, wherever used, wood shall be adequately fire stopped.

Fifth, that all such timber as can through scientific cutting and reforestration be spared, should be made available for such of the other diversified uses of man than which no other more suitable or satisfactory material is obtainable.

Therefore, be it further

RESOLVED, by The Common Brick Manufacturers' Association that the national and state governments be requested to put into effect as speedily as possible a comprehensive plan for a system, observable in every state, for the scientific cutting and reforestration of timber and that the national government be also requested to avail itself of the co-operation of all scientific, professional, and technical organizations versed in conservation meas-

ures, fire prevention, and permanent building construction, to educate and inform the people as to the proper materials to use and methods to employ in the erection of all buildings for the sheltering of humanity, in order to accomplish the following purposes:

(a) To secure safety to life from destruction by fire.

(b) To secure the health and comfort of the occupants of buildings.

(c) To make for durability and consequent decrease in maintenance costs.

(d) To lessen loss of property and conserve the natural resources of the country.

And that those materials extracted from the earth, whose supply is practically inexhaustible and the nature of which is indestructible when properly manufactured and used, should be taken advantage of to replace destructible or combustible materials, in the interest not alone of safety, health, and maintenance, but to preserve to the world the wealth created by the labors of man, and to decrease the cost of safeguarding America against fires.

And; that The Common Brick Manufacturers' Association call upon the producers of all non-combustible building materials to co-operate with the government and with each other in securing the most appropriate and permanent use of such materials in the various features of building construction, including by reason of demonstrated facts the use of solid walls as proper for fire walls, party walls, or barriers against fire in buildings or for exits, and be it finally,

RESOLVED, that The Common Brick Manufacturers' Association offer to the government, to all scientific, professional, and technical organizations, and to the citizens of the United States, individually and collectively, the services and best offices of its organization and its members in securing, to the interest of humanity, the most advantageous use of non-combustible, permanent and economic materials including solid common brick as a basic building material.

The report by states and districts upon (1) labor, (2) fuel, (3) empty car supply, (4) stock and (5) demand, brought out the fact that in almost every section of the country the manufacturers would be better able to keep up with the demand if they could get railroad cars. The feeling of the convention seemed to be that since building is now of paramount importance—the lack of buildings tending to increase rents and the high cost of living—the railroads should make a sepcial effort to provide cars so that building materials of all kinds could be moved expeditiously.

Herbert C. Hoover Elected President of Mining and Metallurgical Engineers

AT the 121st annual meeting of the American Institute of Mining and Metallurgical Engineers, held Feb. 16 to 19, at the Engineering Societies Building, New York City, Herbert C. Hoover was elected president for the ensuing year.

Many interesting papers were presented and discussed, those bearing on the subject of coal, probably holding the most important place. The morning session of the opening day, was devoted to papers on oil, and the afternoon session of the same day devoted to a discussion of oil and coal resources and production. A simultaneous session on industrial organization was also held. On Feb. 17 the sessions were devoted to papers dealing with the foreign oil supply and the coal industry.

In the evening a reception was given to the new president and Mrs. Hoover at the Waldorf-Astoria, which was followed by a banquet and dance.

Feb. 18 was devoted to papers on the stabilization of the coal industry, followed by an open forum. Papers on iron, coal and steel production were presented at simultaneous sessions.

The closing day, Feb. 19, was occupied by a visit to the Bush Terminal Buildings at Brooklyn, N. Y.

Standardizing Steel Bars to Increase Production

IT is interesting to note that in common with other manufacturers who are endeavoring to meet the demand for an increased output, a number of companies manufacturing steel bars have come to the conclusion that continuation of a large number of styles differing but slightly from each other is a decided handicap.

The War Service Committee of the Concrete Reinforcing Industry recommends that an elimination of many sizes which in reality are duplications of equivalent areas, be effected. This would in no wise impair the efficiency of design, but would promote porduction. The recommendation has been accepted and approximately fifty per cent of commercial sizes of reinforced bars now current, will no longer be manufactured after March 1, 1920.

The various corporations who are co-operating in this movement are the American System of Reinforcing, Chicago; Concrete Steel Co., New York; Corrugated Bar Co., Inc., Buffalo; Paul J. Kalman Co., St. Paul; Truscon Steel Co., Youngstown; and the Edward A. Tucker Co., Boston.

New Joint Committee on Standard Specifications for Concrete and Reinforced Concrete Organized

The Joint Committee on Standard Specifications for Concrete and Reinforced Concrete has just been organized. The committee consists of five representatives from each of the following organizations:

American Society of Civil Engineers.
American Society for Testing Materials.
American Railway Engineering Association.
Portland Cement Association.
American Concrete Institute.

The purpose of the committee is to make a thorough study of all available data on the subject of concrete, concrete materials and reinforced concrete and to incorporate the most modern information and experience into a general specification which may serve as a pattern for detailed specifications covering specific types of concrete construction.

The new "Joint Committee" may be considered as the successor of the "Joint Committee on Concrete and Reinforced Concrete," which was organized in 1904, through the co-operation of the same engineering and technical societies. The original Joint Committee presented its final report to the parent organizations in 1916. .

The membership of the present "Joint Committee" is given below:

American Society of Civil Engineers.

R. P. Miller (Chairman), Superintendent of Buildings, New York City.

W. K. Hatt, Professor of Civil Engineering, Purdue University, Lafayette, Ind.

A. E. Lindau, General Manager of Sales, Corrugated Bar Co., Mutual Life Building, Buffalo, N. Y.

W. A. Slater, Bureau of Standards, Washington, D. C.

S. E. Thompson, Consulting Engineer, 136 Federal St., Boston, Mass.

American Railway Engineering Association.

J. J. Yates (Chairman), Bridge Engineer, Central Railroad of New Jersey, 143 Liberty St., New York City.

G. E. Boyd, Division Engineer, Delaware, Lackawanna & Western Railroad, Buffalo, N. Y.

F. E. Schall, Bridge Engineer, Lehigh Valley Railroad, Bethlehem, Pa.

C. C. Westfall, Engineer of Bridges, Illinois Central Railroad, Chicago, Ill.

H. T. Welty, Engineer of Structures, New York Central Railroad, New York City.

American Concrete Institute.

S. C. Hollister (Chairman), Consulting Engineer, 320 Widener Building, Philadelphia, Pa.

R. W. Lesley, 611 Pennsylvania Building, Phliadelphia, Pa.

A. R. Lord, Lord Engineering Co., 6 North Clark St., Chicago.

E. J. Moore, Turner Construction Co., 224 Madison Ave., New York City.

L. C. Wason, Aberthaw Construction Co., 27 School St., Boston, Mass.

Portland Cement Association.

F. W. Kelley (Chairman) President, The Helderberg Cement Co., Albany, N. Y.

Ernest Ashton, Chief Chemist, Lehigh Portland Cement Co., Allentown, Pa.

J. H. Libberton, Manager Service Bureau, Universal Portland Cement Co., 210 South LaSalle St., Chicago.

E. D. Boyer, Cement Expert, Atlas Portland Cement Co., 30 Broad St., New York City.

D. A. Abrams, Professor in Charge, Structural Materials Research Laboratory, Lewis Institute, Chicago.

American Society for Testing Materials.

R. L. Humphrey (Chairman), Consulting Engineer, 805 Harrison Building, Philadelphia, Pa.

L. S. Moisseiff, Consulting Engineer, 69 Wall St., New York City.

H. H. Quimby, Chief Engineer, Department of City Transit, 3920 Girard Ave., Philadelphia, Pa.

A. T. Goldbeck, Engineer of Tests, U. S. Bureau of Public Roads, Washington, D. C.

E. E. Hughes, Vice-President and General Manager, Franklin Steel Co., Franklin, Pa.

The organization meeting of the committee was held at the Engineers' Club, Philadelphia, on Feb. 11, 1920. The following officers were elected:

R. L. Humphrey, Chairman, Philadelphia.
J. J. Yates, Vice-Chairman, New York City.
D. A. Abrams, Secretary-Treasurer, Chicago.

The following committees, consisting of 5 to 7 members each, have been organized:

Committee 1—Concrete Materials.
" 2—Metal Reinforcing.
" 3—Proportioning and Mining.
" 4—Forms and Placing.
" 5—Design.
" 6—Details of Construction.
" 7—Waterproofing and Protective Treatment.
" 8—Surface Finish.
" 9—Form of Specification.

A number of the committees have organized and are actively engaged in the preparation of their preliminary reports. The next meeting of the committee will probably be held at Asbury Park, N. J., about June 22, during the annual convention of the American Society for Testing Materials.

Gypsum as a Building Material

A Description of Its Characteristics and Uses, and Its Adaptability to Interior Plastering

TO-DAY, as never before, there is a constant search by architects for materials which more nearly approach the ideal and at the same time effect economy in building construction. It is due to this tendency that new types of construction are being developed. Not only are the various elements of the structures being built with materials heretofore but little known and hence little used, but also many well-known materials are being adapted to new uses. While manufacturers are apt from the start to claim success for their product, it is only after the test of time that judgment can competently be passed. Broad experience in building work will often prove of value in judging the merits of new forms of construction.

Among the various materials used in the building industry, perhaps none has in recent years forged to the front more rapidly than gypsum. Due to this rapid development, there has been lack of exact knowledge as to the characteristics of the material and the various uses to which it is best adapted. It will be profitable to survey the field of its usefulness.

Gypsum is one of the most ancient of building materials. The Greeks used gypsum in Pliny's time. The writings of this naturalist of ancient history (23-79 A. D.) are included in thirty-six books, book XXXVI dealing with the differenet kinds of stones and marble, including lime, sand and gypsum. Pliny also minutely describes the removal of a beautiful gypsum plaster frieze from Lacedæmon to adorn a public building in Rome. Going still further back, the Temple of Apollo at Bassæ, built four hundred and seventy years before Christ, affords an excellent example of the use and permanent structural qualities of gypsum. The great pyramids of Egypt contain plaster work of gypsum executed at least four thousand years ago.

The common name plaster of Paris is often applied to all calcined gypsum because of the large quantities of gypsum rock beds found near Paris, France. In France and Germany gypsum is used for many building purposes, including inside and outside plastering, walls, floors and roofs. In the United States and Canada gypsum has for years been used to a large extent for interior plastering. In proper form gypsum is also used structurally for floors, roofs and outside walls. The United States Government, in its war building operations, used many million square feet of reinforced gypsum roofs.

Gypsum is hydrous calcium sulphate (the sulphate of calcium with water of crystallization in chemical combination), and is expressed chemically as $CaSO_4 + 2\,H_2O$. It contains when pure 79.1 per cent of calcium sulphate ($CaSO_4$) and 20.9 per cent of water (H_2O). The dehydration of ground gypsum rock by physical process yields calcined gypsum, and this is the base from which gypsum plasters and other gypsum products used in building construction are made.

It is the method of calcination employed, and the degree to which such calcination is carried forward, that determines the possibilities and uses to which the calcined product may be applied in the field of building construction.

Gypsum usually occurs in beds of considerable area from four to thirty feet in thickness. It is quarried or mined in eighteen states and the territory of Alaska. It is also imported from Nova Scotia, New Brunswick and Ontario, Canada, into the United States.

Gypsum Plaster

GYPSUM plasters are prepared from calcined gypsum. They may be classed in a general way, as follows:

Ready Mixed Gypsum Plaster.—This plaster (sometimes called Prepared or Sanded Plaster) is a plastering material in which the predominating cementitious material is calcined gypsum, and which is mixed by the manufacturer with sand and other necessary constituent parts in proper proportion. It requires but the addition of water to make it ready for use. It is advantageous to use this material in cases where good clean sand is hard to procure. Where good sand is procurable and the freight rates amount to more than the cost of the sand, the use of ready-mixed gypsum plaster is not economical.

Gypsum Wood Fiber Plaster.—This is a plastering material in which not less than 80 per cent by weight is calcined gypsum and not less than 1 per cent consists of a non-staining wood fiber. The remainder is composed of hydrated lime, ground clay, asbestos, sand, retarder or cementitious material other than calcined gypsum, mixed in the required proportions by the manufacturer. This plaster is used with or without the admixture of sand, and is in demand where light weight, tough, insulating and highly fire-resistive surfaces are required.

Neat Gypsum Plaster.—Neat Gypsum Plaster (sometimes termed Gypsum Cement Plaster) is a plastering material in which not less than 85 per cent by weight of the cementitious material is calcined gypsum. The remainder is composed of hydrated lime, ground clay, asbestos, retarder fiber, or cementitious material other than calcined gypsum, mixed in the required proportions by the manufacturer. This plaster is identical with "Ready Mixed Gypsum Plaster," but requires the addition of from two to three parts by weight of sand before mixing in water and applying.

Other Gypsum Plasters.—It is not within the scope of this article to enter into the details of other gypsum plasters manufactured and sold in large quantities for specific purposes, such as "Gauging Plasters," "Keene's Cements," "Bond Plasters," "Molding Plasters," "Trowel Finishing Plasters," etc., except to state that in practically all building operations there is a demand for some or all of the plasters named.

CHARACTERISTICS OF GYPSUM PLASTERS.

Gypsum plasters possess high tensile and compressive values. The American Society for Testing Materials, Committee C-11 on Gypsum, in specifications for "Calcined Gypsum," and a "Tentative Report on Gypsum Plasters" makes note of these strength properties.

The hardening action of gypsum plaster is one of crystallization. This takes place quickly and uniformly from face to face through the entire mass, and at the same time, due to the water of crystallization combining chemically with the calcined gypsum. As the result of this chemical action the problem of getting rid of dampness and moisture in the building is not a serious one when the proper quantity of water has been used in mixing.

Gypsum plasters set rapidly. This permits the carpenters to follow the plasterers in about 48 hours. Thus the work of erecting trim, casings, base-boards, chair-rails, mouldings and similar interior finish can proceed without delay. The setting properties permit rapid plastering, since plaster coats can at once follow, thus obviating the repeated moving of scaffolding.

Due to this quick setting, the danger of freezing is not as great with gypsum. The U. S. Government in the construction of industrial houses, used gypsum plaster, and was particular that it should be used in localities and at periods, where freezing temperatures were to be expected, and where, for reasons stated, speed was necessary.

Tests made as to its fire-resisting properties show gypsum to be, from this standpoint, an admirable material. All materials are injured by the action of high temperatures in one way or another; some fuse and melt, others warp, buckle, crack and disintegrate. The changes due to fire which are least injurious to the construction as a whole, and the material in question, are such as are due to slow calcination without appreciable expansion and consequent disruption due to warping and buckling.

The water of crystallization liberated from gypsum rock by physical means (in order to obtain the calcined product from which gypsum plaster is manufactured) is taken back again during the setting of the gypsum plaster in chemical crystalline form.

During the period of a fire, calcination of the exposed gypsum plastered surface again takes place and the recombined water of crystallization is again slowly liberated. So long as this process of calcination of the plastered surface is continuing, and water of hydration is being liberated, steam will be present and for this reason it is not possible under such fire conditions to increase the temperature of the back side of the gypsum plaster coat to a temperature appreciably above 212 degrees Fahr.

Gypsum plaster may be applied upon any plastering lath or base. It is especially adapted to plastering on gypsum blocks and plaster board, and on account of its quick setting and strength properties is extensively used for plastering on metal lath.

From the foregoing it will be seen that in the field of plastering, gypsum forms an admirable material and has a wide and legitimate use.

A Study of the Forms in Which Sulphur Occurs in Coal

Under this title the University of Illinois has issued a bulletin No. 111 by A. R. Powell and S. W. Parr, giving the results of a thorough investigation of the subject made in the chemistry department of the Engineering Experiment Station of that university. The nature of the four sulphur compounds in coal, the quantity of each form present, and the change which characteristic forms undergo when the coal is allowed to stand or is subjected to coking formed the basis of the investigation.

The devising of methods of analysis has been much sought after in recent years by coal and coke investigators, but without satisfactory results up to the present time. The methods proposed in this bulletin have been put to extended tests with exceedingly satisfactory results.

Copies of bulletin No. 111 may be had without charge by addressing the Engineering Experiment Station of Urbana, Ill.

Brick Chimneys and Wall Shingles finished with Cabot's Old Virginia White
John Russell Pope, Architect, New York

Cabot's Old Virginia White

ON BRICKWORK

The soft, brilliant "whitewash white" effect of Old Virginia White is wonderfully appropriate for brickwork, giving the flavor and texture of age combined with the cool, clean freshness of new whitewash. Also for stucco and stone.

Sample for trial sent on request.

SAMUEL CABOT, Inc., Manufacturing Chemists
BOSTON, MASS.

1133 Broadway, NEW YORK 24 West Kinzie St., CHICAGO

Cabot's Quilt, Waterproof Cement and Brick Stains, Conservo Wood Preservative, Damp-proofing, Water-proofing

APPALACHIAN TENNESSEE MARBLE

Our facilities for the prompt turning out of work are unsurpassed. We employ the most skilled mechanics and spare neither time nor expense in furnishing first-class work.

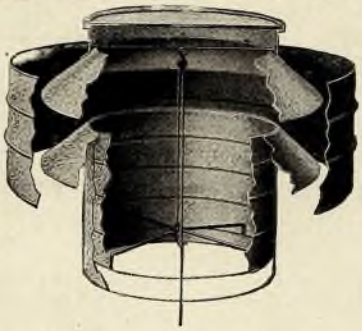
SAMPLES ON REQUEST

APPALACHIAN MARBLE CO.
KNOXVILLE TENNESSEE

A KIMBALL PIPE ORGAN
for a
Country House

Inquiries regarding space or plans receive prompt attention.

W. W. Kimball Co.
300-310 S. Wabash Ave.
Established 1857
Chicago



Notice Sliding Sleeve Damper (patented). Furnished with flat wired glass, up to and including the 72-inch size. Also with Metal Tops.

Efficient Ventilation Means BURT

Besides automatically drawing off all impure air, smoke and gases without any operating expense, Burt Glass-Top Ventilators assure adequate skylight illumination in factories, churches, schools, offices, public buildings and residences.

The thousands of Burts in use throughout the country attest the value of the principles they embody.

Burts are made in any size and in several designs to meet the requirements of all types of buildings.

Catalog will be mailed on request.

The Burt Manufacturing Company

300 Main Street Akron, Ohio.
George W. Read Co. Montreal
Sole Manufacturers of "Burt" Ventilators for Canada

Late Quotations in Building Material Markets

(Price quotations now current on building materials and supplies as quoted by dealers and jobbers for delivery in New York, Chicago, San Francisco Seattle, and Birmingham follow. The quotations set forth are placed before readers of THE AMERICAN ARCHITECT to afford an accurate review of market conditions, rather than for use as a basis for actual purchase. They will not only provide knowledge of the exact state of the market as to items quoted but will also present a basis to judge conditions as affecting correlating materials.)

	New York	Chicago	San Francisco	Seattle	Birmingham
BRICK					
Common	$30.45	$14.00	$16.00	$18.00	$28.00
Face brick	55.00 to 60.00	30.00 to 40.00	50.00 to 55.00	23.00	45.00
BURNED CLAY (Delivered on Job)					
Block partition:					
3 in., per sq. ft	0.13	0.10	.....	0 10½	.....
4 in., per sq. ft	0.15	0.11	.....	0 10	.....
Wall coping (single slant):					
8 in., per lin. ft	0.16	0.18	.....	.....	0.22
12 in., per ft	0.26½	0.27	.....	.....	0.32
18 in., per ft	0.54	0.54	.....	.....	0.52
(Corners and angles four times the price of one foot of coping the same size.)					
CEMENT					
Per bbl. in 15-cent bags (rebate 60 cents per bbl. for bags)	3.40	3.25	3.63	4.25	4.50
FINISHED IRON AND SUEEL (Mill Shipments)					
Bar iron, refined grade	.....	.....	.....	.....	.....
Bar iron, double refined	.....	.....	.....	.....	.....
Soft steel bars	2.62 to 4.52	.....	.....	.....	3.50
Shapes	2.72 to 4.27	.....	.....	.....	.....
GLASS (Discounts from Manufacturer's Price Lists)					
Single strength, A quality, first three brackets	75%	77%	.....	.....	.....
Single strength, B quality	75%	77%	.....	83%	.....
Double strength, A quality	77%	79%	.....	83%	.....
Double strength, B quality	79%	79%	.....	.....	.....
GYPSUM					
Plaster board:					
27x28x1	.....	.....	.....	0 36	.....
27x48x ½	0.45	.....	.....	.....	.....
32x36x ¼	0.28	0.24	.....	.....	0.40
32x36x ⅜	0.29	0.26	....	0 36	.....
32x36x ½	0.35	.....	.....	.....	.....
Plaster blocks:					
2 in. solid, 12x30, per sq. ft	0.13	0.12	.....	.....	.....
3 in. hollow, 12x30, per sq. ft	0.13	0.12	.....	.....	.....
4 in. hollow, 12x30, per sq. ft	0.14	0.13½	.....	.....	.....
6 in. hollow, 12x30, per sq. ft	0.21¾	0.20	.....	.....	.....
HOLLOW TILE					
2x 8x12 partitions, per 1,000 sq. ft	98.80-111.10	.....	80.00	.....	.....
3x12x12 partitions, per 1,000 sq. ft	148.20-165.10	110.00	108.00	105.00	112.00
4x12x12 partitions, per 1,000 sq. ft	166.70-185.70	118.00	125.00	120.00	126.00
6x12x12 partitions, per 1,000 sq. ft	222.30-247.60	162.20	154.50	170.00	168.00
8x12x12 partitions, per 1,000 sq. ft	.....	221.10	222.50	230.00	224.00
10x12x12 partitions, per 1,000 sq. ft	.....	272.70	276.00	.....	.....
12x12x12 partitions, per 1,000 sq. ft	.....	316.90	.....	.....	.....
2x12x12 split furring, per 1,000 sq. ft	92.60-103.20	73.80	108.00	.....	.....
LATH					
Eastern spruce, per thousand	18.00 to 20.00	16.00 to 18.00	18.00	14.50	.....
No. 1 white pine, per thousand	15.00 to 18.00	16.00 to 18.00	20.00	.....	.....
No 1 hemlock, per thousand	15.00 to 18.00	.....	18.00	.....	.....
No. 1 yellow pine, per thousand	15.00 to 18.00	16.00 to 18.00	18.00	.....	20 00
LIME					
Common, 200 lb. bbls., per bbl	3.80	1.75	.....	2.85	2.50
Finishing, 300 lb. bbls., per bbl	19.50	20.00	.....	3.25	2.50
Hydrated, in paper bags, per ton	4.00	.....	.....	25.00	2.50
LUMBER (Retail Prices per Thousand Delivered)					
Yellow pine, No. 1 boards, 1x6	80.00	95.00	.....	.....	120.00
Yellow pine, B, and better flooring (plain)	130.00	135.00	.....	.....	130.00
Douglas fir, 6x6 to 12x12	80.00	77.00	60.00	36.00	.....
Oak, quartered, 1 in., F. A. S.	325.00	370.00	500.00	.....	.....
Oak, plain, 1 in., F. A. S.	225.00	260.00	320.00	.....	.....
Oak flooring, 13/16 quartered, white	220.00	370.00	470.00	.....	.....
Maple, 1 in., F. A. S.	180.00	185.00	270.00	.....	.....
Maple flooring, 13/16 clear	175.00	225.00	225.00	.....	.....
Mahogany, 1 in., F. A. S.	.....	400.00	500.00	.....	.....
Spruce, 10 in.	85.00	80 to 140	96.00	.....	.....
Cypress, 1 in., F. A. S.	150.00	150.00	.....	.....	.....
METAL LATH					
Under 100 sq. yd., per sq. yd	0.40	.....	.....	0.40	0.42

A section of the Barrett Specification 20-Year Roof on West Technical High School, Cleveland, Ohio. It was laid over another type of roof that had begun to deteriorate after only seven years of service.

How to be sure of a 20-Year Roof—

THE West Technical High School Cleveland, Ohio, pictured above, has just been re-roofed with a Barrett Specification Roof *over another type of roof that had begun to deteriorate seriously after only seven years of service.*

When the Barrett Specification Roof was finished we handed the City Officials of Cleveland a Surety Bond, issued by the well-known United States Fidelity & Guaranty Co., of Baltimore, which *guarantees* the roof to last for at least 20 years without maintenance expense of any kind. The probabilities are that this roof will last nearer 30 years.

There is only one way to be absolutely sure of getting the kind of roof you want—a genuine Barrett Specification Roof—and that is to write this standard paragraph into the building specifications:

"The roof shall be laid according to The Barrett Specification dated *May* 1, 1916, and the contractors shall obtain for us, without additional cost, the Barrett 20-Year Guaranty Bond."

This simple paragraph takes all the gamble and worry out of roofing, for both owner and architect.

Such expressions as "Barrett Specification *type* of roof," "Five-ply felt-and-pitch roof" or "Barrett Specification Roof, *or equal,*" should never be permitted in a building specification.

The 20-Year Surety Bond Is Free

The 20-Year Surety Bond will be furnished on any roof of 50 squares or over in cities of 25,000 or over, or in smaller places where Barrett Inspection Service is available. There is no charge for this Bond. Our only requirements are that the Barrett Specification shall be strictly followed and that the roofing contractor shall be approved by us.

A copy of the Barrett 20-Year Specification, with roofing diagrams, sent free on request.

New York Chicago Philadelphia
Cleveland Cincinnati Pittsburgh
Birmingham Kansas City Minneapolis
Seattle Peoria Atlanta
Youngstown Lebanon Washington
Bethlehem

The Barrett Company

Boston St. Louis
Detroit New Orleans
Salt Lake City Nashville
Duluth Milwaukee
Bangor Dallas Toledo Columbus Richmond Johnstown
Elizabeth Buffalo Latrobe
Baltimore

THE BARRETT COMPANY, LIMITED: Montreal Toronto Winnipeg Vancouver St. John, N.B. Halifax, N.S. Sydney, N.S.

Late Quotations in Building Material Markets—*Continued*

	New York	Chicago	San Francisco	Seattle	Birmingham
PIPE					
Cast iron:					
6 in. and heavier	$67.30	72.00	.....	.....	66.00
4 in.	73.30	75.80	.....	.....	.....
3 in.	.....	82.80	.....	.....	.....
(And $2 additional for Class A and gas pipe)					
(Discounts to jobbers for carload lots on the Pittsburgh basing card; freight rates from Pittsburgh to New York, and also from Pittsburgh to Chicago, in carloads, per 100 lbs., are 27c. An additional 5 per cent discount is allowed to large jobbing interests over those listed below.)					
	F.O.B. Pittsburgh	F.O.B. Chicago			
	Butt Weld				
Wrought:					
Steel:					
Black, ⅛ to 3 in.	47 to 54 %	38 to 45.1%	.....	.....	.....
Galv., ⅛ to 3 in.	20½ to 41½%	10.1 to 30.1%	.....	4.05 net	.....
Iron:				6.10 net	.....
Black, ⅛ to 1½ in.	34½%	11.9 to 22.6%	.....	.....	.....
Galv., ⅛ to 1½ in.	+25 to 18½%	+39.9 to 4.6%	.....	.....	.....
	Lap Weld				
Steel:					
Black, 2½ to 6 in.	50 %	41.1%	.....	.....	.....
Galv., 2½ to 6 in.	37½%	27.1%	.....	.....	.....
Iron:					
Black, 2½ to 6 in.	30½%	18. %	.....	.....	.....
Galv., 2½ to 6 in.	17½%	3.6%	.....	.....	.....
PLASTER					
Neat wall cement in 15-cent bags, per ton	23.50	20.00	18.50 to 20.00	22.50	24.00
Finishing plaster	25.00	20.50	19.50 to 21.00	24.00	24.00
Lath mortar, in cloth bags, per ton	16.50	.....	.....	.....	.....
RADIATION					
Discount from list on standard heights	45%	41 to 42	.....	.....	44.45
REINFORCING BARS					
High carbon steel from mill	48.50	.....	4.50 to 5.50	5.00	.....
Medium steel from mill	48.50	.....	4.50 to 5.50	5.00	4.50
ROOFING MATERIAL					
Tarred felt paper:					
No. 1—25 lbs. to 100 sq. ft., per ton	81.00	90.00	.....	2.50 per cwt	.....
No. 2—16 lbs. to 100 sq. ft., per ton	81.25	90.00	.....	3.25 " "	.....
No. 3—12 lbs. to 100 sq. ft., per ton	81.63	90.00	.....	3.35 " "	.....
Rosin sized sheathing, per ton	75.00	.....	.....	105.00 " "	.....
Corrugated roofing, galvanized, 2½ in. corrugation, over flat sheets, per 100 lbs.	0.30	.....	.....	.....	.....
SHINGLES					
Red cedar, 5 to 2, clear, per thousand	15.00	10.00	16.00	7.15	.....
White cedar, extra star, A star, per thousand	16.00	9.50	17.00	5 75	.....
SLATE ROOFING					
	F.O.B. Cars Quarry Station				
Pennsylvania:					
Best Bangor	$7.75 to $9.00	.....	.....	.....	.....	9.00 to 18.00
No. 1 Bangor Ribbon	6.75 to 7.00	.....	.....	.....	.....	.....
Pen Argyl	6.50 to 7.25	.....	.....	.....	.....	.....
Peach Bottom	10.50 to 12.50	.....	.....	.....	.....	.....
No. 1 Chapman	6.25 to 7.25	.....	.....	.....	.....	.....
Vermont:					
No. 1 Sea Green	4.25 to 6.75	.....	.....	.....	.....	27.00
Unfading Green	9.00 to 10.50	.....	.....	.....	.....	27.00
Red	12.00 to 20.00	.....	.....	.....	.....	30.00
Maine:					
Brownsville, U'f'g Black, No. 1	12.00	.....	.....	.....	.....	.....
Slaters' felt, 30 lb. roll	0.92	.....	.....	.....	.....	3.00
Slaters' felt, 40 lb. roll	1.22	.....	.....	.....	.....	3.25
STRUCTURAL STEEL					
Beams and channel, 3 to 15 in., per lb	3.47	3.47	4.55 to 5.00	4 70 to 5.00	0 05½
Beams and channel, over 15 in., per lb	3.57	3.57	4.55 to 5.00	.....	0 05¾
Angles, 3 to 6 in.	3.47	3.47	4.55 to 5.00	4.10	0 05
Zees and tees	3.57	3.47 to 3.52	.....	.....	.....
Steel bars, half extras, from mill	.....	.....	4.90	4.00	4.25
STUCCO					
In cloth, per ton (white, mixed)	22.50	20.50	.....	.....	.....
STUCCO BOARD					
Medium weight stucco board, plain, per thousand sq. ft.	42.50	65.00	.....	.....	60.00
Medium weight stucco board, creosoted, per thousand sq. ft.	50.00	70.00	.....	.....	.....
Heavy weight stucco board, plain, per thousand sq. ft.	55.00	75.00	.....	.....	.....
Heavy weight stucco board, creosoted, per thousand sq. ft.	60.00	80.00	.....	.....	.....
Medium weight stucco board, plain, narrow key, per thousand sq. ft.	50.00	75.00	.....	.....	.....
Medium weight stucco board, narrow key, creosoted, per thousand sq. ft.	55.00	70.00	.....	.....	.....
Insulating board, heavy felt background, per thousand sq. ft.	50.00	70.00	.....	.....	.....
SHEATHING BOARD					
Heavy weight sheathing board, per thousand sq. ft.	50.00	70.00	.....	.....	65.00
Medium weight sheathing board, per thousand sq. ft.	46.00	63.00	.....	.....	.....
Stucco or plaster board, sheathing board and insulating board are in rolls containing one sheet 25 ft. long and 4 ft. wide (100 sq. ft.).					
WALL BOARD					
Wall board, shipped any length, 4 ft. wide, per thousand	45.00	50.00	.....	46.00	53.00
Packed flat in cars if ordered in less than car lots. Add $5.00 per thousand ft. for crating.					

The Result of Your Efforts

IN ANNOUNCING the publication of the results of the competition conducted under our auspices last summer by the Architectural Forum for a Face Brick house to cost $7000, we wish to express to the architectural profession our sincere appreciation for its splendid response.

We are told that both in point of the number of drawings submitted and in their artistic merit, this competition has set a new standard. The jury of awards, which was asked to select for publication the best fifty drawings, said that a hundred and fifty designs worthy of reproduction might easily have been chosen. And so we add to our thanks our hearty congratulations.

The results of the competition, therefore, abundantly fulfilled its object, which was to assemble designs of artistic small Face Brick houses for distribution in communities beyond the reach of the architectural profession.

But not the least pleasing feature to us has been the willingness of the profession to co-operate with us in stimulating a nation-wide interest in better-designed homes. We believe this augurs well for the future, for only through a cordial co-operation between architects and material manufacturers can the standard of our domestic architecture be raised. The efforts of each of us can complement those of the other.

We can, through our booklets and our advertising, do for architects what they cannot profitably do for themselves—arouse a wider artistic appreciation, and thus in time create a broader field for the practice of architecture. Architects, on their part, can furnish us with the material to carry on this work.

"*The Home of Beauty*" is the title we have given to the booklet in which we present the fifty designs adjudged best by the jury of awards in last summer's competition. We believe it will prove interesting to the profession especially in showing present-day tendencies in small-house designing.

A copy will gladly be sent to any architect who applies for it on his office stationery.

A·F·B·A
USE FACE BRICK
—it Pays

AMERICAN FACE BRICK ASSOCIATION

1154 WESTMINSTER BUILDING · CHICAGO, ILLINOIS

BUILDING NEWS

In order to supply our readers with material of current interest, the news and comment appearing in issues of THE AMERICAN ARCHITECT delayed by the printers' strike will be as of actual rather than stated date of publication.

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it. Our sources of information are believed to be reliable, but we cannot guarantee the correctness of all items. Persons in charge of proposed work are requested to send us information concerning it as early as possible; also corrections of any errors discovered.

ALABAMA

BIRMINGHAM, ALA.—Birmingham Masonic Temple Assn. having plans prepared by W. T. Warren, archt., Empire Bldg., and H. B. Wheelock, archt., Steiner Bldg., for 190 x 400 ft., temple on 7th Ave. from 18th to 19th Sts. N., including 2 auditoriums. $1,000,000. W. B. Ittner, Bd. Educ. Bldg., St. Louis, Mo., consult. archt.

BIRMINGHAM, ALA.—The Ridgeway Paper Stock Co., 1619 Ave. E., plans to build a 100 x 250 ft. mill for the manufacture of wrapping paper, box board and corrugated board. $250,000.

CALIFORNIA

HERMOSA BEACH, CAL.—City will vote on $125,000 bonds to build 2 story, irregular shaped concrete and stucco pavilion. Preliminary plans prepared by H. C. Howard, archt., 619 Bway. Central Bldg., Los Angeles.

LODI, CAL.—City voted $90,000 bonds to build 1 story, hollow tile and concrete school.

LOS ANGELES, CAL.—J. S. Torrance, Washington Bldg., having plans prepared by Dodd & Richards, archts., 905 Brack-Shops Bldg., for 2 story, 120 x 155 ft., rein.-con. and terra cotta market and hall on Spring St., near 9th St.

LOS ANGELES, CAL.—H. L. Arnold, 7th and Grand Ave., soon receives bids for building 1 and 2 story, 210 x 220 ft., rein.-con., brick and hollow tile stores on 7th, Figueroa and Orange Sts. T. B. Keim, Jr., Haas Bldg., archt.

OAKLAND, CAL.—City voted $8,500,000 bonds to build schools. C. W. Dickey, Everson Bldg., supervising archt.

POMONA, CAL.—City plans election to vote on $250,000 bonds to build high school. E. T. Keiser, chn. Bd. Educ.

RICHMOND, CAL.—A. W. Cornelius, archt., Merchants Natl. Bank Bldg., San Francisco proposes building 1 story, rein.-con., brick and steel theatre here for Turner & Dahnken, San Francisco. $125,000.

ROSEVILLE, CAL.—City voted $55,000 bonds to build school.

SAN FRANCISCO, CAL.—Matson Navigation Co. 120 Market St. having plans prepared by Bliss & Faville, archts., Balboa Bldg., for 10 to 15 story offices. $1,500 000.

SAN FRANCISCO, CAL.—Turner & Dahnken having plans prepared by A. W. Cornelius archt., Merchants Bank Bldg., for 305 x 310 ft., rein.-con. brick and steel theatre on 4th St. $750,000.

WILLOWS, CAL.—Willows Impvt. Corp., c/o G. L. Briggs, plans to build hotel, on Butte and Walnut Sts. $215,000.

COLORADO

DENVER, COL.—Bd. Educ. Berthoud Dist. voted $85,000 bonds to build high school.

CONNECTICUT

BRIDGEPORT, CONN.—F. L. Mills Co., 617 State St., having plans prepared by Fletcher-Thompson, Inc., engrs., 1089 Broad St., for 2 story, 100 x 150 ft., brick and concrete service and sales building, on Fairfield Ave. $100,000.

HARTFORD, CONN.—A. R. Ellis, archt., 36 Pearl St. soon lets contract for building 3 story, 52 x 105 ft., brick and concrete factory, on Union Pl., for Manternach Co., 74 Union Pl. $75,000.

WATERBURY, CONN.—D. E. Carroll, 176 Meadow St., manufacturer of fruit and grain products, proposes the construction of a 4-story, 70 x 90 ft. factory on West Main St. $100,000.

WESTPORT, CONN.—The Dolge Chemical Co. will construct a 1-story factory. $40,000.

WINDSOR LOCKS, CONN.—The J. R. Montgomery Co., manufacturer of mercerized cotton yarns, proposes the construction of a 2-story, 80 x 200 ft. factory. $100,000. Ford, Buck & Shelelm, 60 Prospect St., Hartford, archts.

GEORGIA

GRIFFIN, GA.—Rushton Cotton Mills having plans prepared by Lockwood, Greene & Co., archts. and engrs., Healy Bldg., Atlanta, for 1-story, 200 x 220 ft., rein.-con. and brick weave shed. $225,000.

ILLINOIS

CHICAGO, ILL.—H. J. Schlacks, 721 N. Michigan Ave., plans to build 8-story, 100 x 200 ft., rein.-con., brick and terra cotta hotel on Chestnut St. and Delaware Pl. $2,000,000.

CHICAGO, ILL.—The Chicago Solder Co., 218 North Union Ave., will soon award the contract for the construction of a 2-story, 50 x 250 ft. addition to its plant at 218 North Union Ave. $100,000. Schmidt, Garden & Martin, 104 South Michigan Ave., archts.

IOWA

CEDAR RAPIDS, IOWA.—Bd. Educ. voted $1,500,000 bonds to build 5 junior high high schools, brick, rein.-con. and steel.

DAVENPORT, IOWA. — Hillcrest Apartment Hotel Co. soon receives bids for building 8-story, 128 x 152 ft., brick, rein.-con. and steel apartment hotel on 6th and Brady Sts. $800,000. R. France, Chicago, archt. Clausen & Kruse, 316 Central Office Bldg., engrs.

DAVENPORT, IOWA. — Clausen & Kruse, archts., 316 Central Office Bldg., soon receive bids for building 3-story, 150 x 160 ft., brick, rein.-con. and steel temple for New Masonic Temple Assn. $800,000. Lieberman-Klein & Hein, Chicago, engrs.

WATERLOO, IOWA.—Bd. Educ. receives bids about March for building 3-story, rein.-con., brick and steel high school. $600,000. W. B. Ittner, Bd. Educ. Bldg., St. Louis, archt.

MARYLAND

BALTIMORE, MD.—Standard Oil Co., Pratt and South Sts., having plans prepared by C. N. Friz, archt., 814 Lexington Bldg., for 6-story, 90 x 140 ft., steel, brick and stone office on Courtland and Franklin Sts. $500,000. E. A. Holbein, mgr.

BALTIMORE, MD.—St. Martin's Catholic Church, Fayette St. and Fulton Ave., having plans prepared by F. Baldwin, archt., 328 North Charles St., for 3-story, 78 x 80 ft., concrete, steel and brick school. $100,000.

MASSACHUSETTS

EAST SPRINGFIELD, MASS.—Westinghouse Electric Co., 6905 Susquehanna St., Pittsburgh, Pa., soon lets contract building 1 story, rein.con. and steel machine shop. $360,000.

FALL RIVER, MASS.—The Chace Mills, Rooman St., contemplates construction of a 1-story, 51 x 100-ft. addition to its picker building. $30,000.

FALL RIVER, MASS.—The American Thread Co., Kerr St., will construct a 5-story, 100 x 275-ft. addition to its mill. $700,000.

MALDEN, MASS.—C. H. Moss, 48 Grass St., plans to build a 1-story, 50 x 100-ft. factory on Pearl St. for the manufacture of preserves. $40,000.

NEW BEDFORD, MASS.—The Constinental Wood Screw Co., Mt. Pleasant St., will soon award the contract for the construction of a 2-story, 52 x 80 ft. and 30 x 40 ft. addition to its factory. $45,000. C. Hammond & Son, 179 North Water St., archts.

SALEM, MASS.—The Parker Bros. Co., 190 Bridge St., manufacturers of games, will build a 3-story, 50 x 140 ft. addition to its factory. $35,000.

SPRINGFIELD, MASS.—Bd. Educ. will build 2 story, 116 x 186 ft., brick and steel high school on Spring St. $200,000. R. B. Warner, 168 Bridge St., archt.

MICHIGAN

SAGINAW, MICH.—The Lufkin Rule Co., Hess Ave., plans to build a 1-story, 115 x 219 ft. factory on Hess Ave. and Prescott St., for the manufacture of tapes. $100,000. Esselstyn, Murphy & Hanford, 810 Marquette Bldg., Detroit, archts. and engrs.

MINNESOTA

DULUTH, MINN.—Duluth Builders Exch., 201 Glencoe Bldg., plans to build 10-story, 100 x 140 ft., rein.-con. and brick office on 1st St. W. $750,000.

MISSOURI

KANSAS CITY, MO.—Ivanhoe Bldg. Co., 33rd St. and Woodland Ave., having plans prepared by Smith, Rea & Lovitt, archts. and engrs., 602 Finance Bldg., for 4-story, 93 x 144 ft., rein.-con., brick and terra cotta temple on Linwood and Park Sts. $400,000. G. McClanahan, pres.

MONTANA

BILLINGS, MONT.—City will vote on $600,000 bonds to build 2-story, brick, stone or concrete high school.

NEW JERSEY

ATLANTIC CITY, N. J.—F. R. Watson, archt., 1211 Walnut St., Phila., will build 1 story, 40 x 130 ft., brick, stone and hollow tile church for St. Augustines Church.

BLOOMFIELD, N. J.—D. F. Peck, city clk., propose building comfort station, on Broad St. and Bay Ave.

GLASSBORO, N. J.—State plans to build 2 story, 42 x 79 ft., brick power house for proposed Normal School. $100,000. F. H. Bent, 142 West State St.. Trenton, archt.

HOBOKEN, N. J.—The White Metal Mfg. Co., 1006 Clinton St., manufacturer of tin tubing, will soon award the contract for the construction of a 6-story, 135 x 135 ft. factory and a 3-story, 20 x 80 ft. foundry. J. C. Schaeffler, 40 West 32nd St., New York City, archt.

JERSEY CITY, N. J.—Continental Can Co having plans prepared by Francisco & Jacobus, archts. and engrs., 511 5th Ave., New York City, for 4 story, rein.-con. and steel factory on 15th, 16th, Cole and Monmouth Sts. $750,000.

PENNSVILLE, N. J.—C. R. Peddle, archt., 136 South 4th St., Phila., will build 2-story, 75 x 125 ft., rein.-con. and brick school for Bd. Educ. $100,000.

SOUTH RIVER, N. J.—Boro Pres. proposes building 1 story, 55 x 100 ft., brick and steel power house. $125,000. Goss, Bryce & Johnson, 55 Liberty St., New York City, engrs.

TRENTON, N. J.—State plans to build 1 story, 34 x 81 ft., brick laundry at Home for Girls. $35,000. F. H. Bent, 142 West State St., archt.

TRENTON, N. J.—The Mercer Motor Co., Whitehead Rd., will soon award the contract for the construction of a 1-story, 80 x 400 ft. shop. $50,000. Day & Zimmerman, 611 Chestnut St., Philadelphia, archts.

TRENTON, N. J.—The Union Electrical Porcelain Co., Hamilton and Clark Sts., plans to build a factory on Hamilton St. to replace one recently destroyed by fire. T. A. MacKenzie, 1404 Greenwood Ave., pres.

UNION HILL, N. J.—J. Hastro Textile Co. plans to build 2 story brick factory, on Franklin St. $60,000.

WHARTON, N. J.—The Wharton Steel Co., Wharton St., proposes the construction of an addition to its present plant. $270,000.

HEATING HELPS

For Draftsmen And Specifiers

No, it is not a book of tables, measurements and ratings. Nor is it a bundle of boostful boastings about any system or any boilers, with claims of its being the best on earth—or off of it.

In fact, it's not even a dissertation on fire travels, flue openings and "sich like."

It's simply a collection of man to man talks about heating in general, with a few in particular.

The general ones are not so general as to be useless; nor are the particular ones so particular as to be biased. Frankly, it was made in the first place for the better understanding of the heating question by home owners.

It is applicable to your case, because it will just as surely help you to help them.

By name the book is The Happy Solution.

You are most welcome to a copy. As Simonds says about their saws, "It's a handy thing to have about the house."

Burnham Boiler Corporation

IRVINGTON, NEW YORK

Representatives in all Principal Cities

Canadian Office: Royal Bank Bldg., Toronto

WOODBRIDGE, N. J.—The Reliable Chemical Co., c|o Westinghouse, Church, Kerr & Co., Inc., engrs., 37 Wall St., New York City, proposes the construction of a factory and storage house. $150,000.

NEW MEXICO

LAS VEGAS, N. M.—City voted $100,000 bonds to build new high school.

SILVER CITY, N. M.—Silver City Natl. Bank having plans prepared by J. J. Frauenfelder, archt., 1116 Story Bldg., Los Angeles, Cal., for 6 story, 102 x 146 ft., rein.-con. and terra cotta hotel.

NEW YORK

ALBANY, N. Y.—The Twin Energy Motors Co., Inc., is having plans prepared by W. H. Van Guysling, archt., 1 Clinton Sq., for the construction of a 3-story factory. $1,000,000.

ALBANY, N. Y.—The United States High Speed Tool Corp., Toledo, Ohio, plans to build a 4-story plant near here. D. H. Friedman, 741 Madison Ave., pres.

ALBANY, N. Y.—Allen & Arnink Garage, Hudson Ave., plans to build 2 story, 37 x 70 ft., brick addition to garage. $5,000.

BROOKLYN, N. Y.—Empire Biscuit Co., 30 Waverly Ave., soon lets contract for building 4 story, 50 x 100 ft., brick and steel factory, at 28 Waverly Ave. $100,000. Dodge & Morrison, 135 Front St., New York City, archts. and engrs.

BROOKLYN, N. Y.—H. Figge, 285 Atlantic Ave., having plans prepared by J. Cherry, archt. and engr., Grand Central Terminal, New York City, for 4 story, brick and steel garage, on Pacific St. About $60,000.

BROOKLYN, N. Y.—Parfitt Bros., archts. and engrs., 26 Court St., preparing plans for building 2 story, brick and steel extension to garage at 241 Waverly Ave., for W. P. Jones c/o architects.

BUFFALO, N. Y.—The Auto Club Garage, Inc., 518 Rhode Island St., plans to build an addition to its garage. $25,000.

BUFFALO, N. Y.—The Buffalo Porcelain and Enameling Co. plans to build a 2-story factory at 1927 Elmwood Ave. $25,000.

BUFFALO, N. Y.—The Johnson Rim and Parts Co. plans to build a factory at 2600 Delaware Ave. $25,000.

BUFFALO, N. Y.—The C. Klink Packing House Co., 50 Depot St., plans to build an addition to its packing house. $30,000.

BUFFALO, N. Y.—The Philadelphia Rubber Co., 37th and Reed Sts., Philadelphia, Pa., proposes the construction of two 1 and 3-story factories, a power plant, office buildings and garage. $1,000,000.

BUFFALO, N. Y.—The Rome Wire Co., Rome, N. Y., manufacturer of copper wire, has purchased the J. J. Carrick Bldg., on Kensington and Clyde Aves., here and will also erect several other buildings and equip same for its own use. H. T. Dyett, pres.

CLAYTON, N. Y.—The Taggarts Paper Co., Sherman Bldg., Watertown, has purchased a 100-acre site at Steeles Point, with frontage on the St. Lawrence River and adjacent to tracks of New York Central R.R., and plans to build a wood preparing plant, storage house and loading conveyors. $100,000.

LITTLE FALLS, N. Y.—The Wool Products Co., 337 Engine St., has purchased the plant of the Rockton Knitting Co., here, and plans to improve and make extensive additions to same. $85,000. M. J. Stabin, pres.

MARCY, N. Y.—State Hospital Comm., Capitol, Albany, building mortuary and tuberculosis pavilion, at Utica State Hospital, here. $50,000. L. F. Pilcher, Albany, state archt.

MASSENA, N. Y.—J. J. Taylor, Water St., plans to build a grist and grain milling plant, to replace one which was recently destroyed by fire. $100,000.

MT. VERNON, N. Y.—1st Baptist Church of Mt. Vernon will build 3 story, brick, steel and stone school. $60,000.

NEW YORK, N. Y.—W. H. Gompers, archt. and engr., 171 Madison Ave., proposes building 9-story, brick, steel and stone club on 49th St. and Lexington Ave., for International Sporting Club, care archt. $600,000.

NEW YORK, N. Y.—Kelly-Springfield Tire Co., 200 West 57th St., having plans prepared by E. Necarsulmer, archt. and engr., 507 5th Ave., for 17-story, 100 x 104 ft., brick and steel office on 7th Ave. and 57th St. $2,000,000.

NEW YORK, N. Y.—C. B. Snyder, archt. and engr., Municipal Bldg., will construct P. S. 38, on St. Anns Ave., Rae St., Carr St. and Hagney Pl., (Bronx Boro.), for Bd. Educ., 500 Park Ave. $500,000.

NEW YORK, N. Y.—Pacific Bank, Madison Ave, and 28th St., will alter brick, steel, stone and marble bank. $50,000.

NEW YORK, N. Y.—R. Goelet Estate, 1492 Bway., proposes altering brick, steel and stone office building. $100,000.

NEW YORK, N. Y.—B. M. Maltz, painter and decorator, c|o B. W. Dorfman, archt., 26 Court St., Brooklyn, will build a 5-story factory on Grand Ave. and Dean St., Brooklyn. $200,000.

NEW YORK, N. Y.—The William St. Realty Corp., 19 Cedar St., will build a 6-story, printing plant at 182 William St. $55,000. Knowes & Basso, 280 Madison Ave., archt.

NIAGARA FALLS, N. Y.—Kimberly & Clark Co., Neenah, Wis., soon receives bids for building paper mill on Royal Ave., here. $200,000.

POTSDAM, N. Y.—H. N. Clark plans to build a 3-story, 36 x 68 ft. garage on Water St. $25,000.

POUGHKEEPSIE, N. Y.—The De Laval Separator Co., Pine St., has awarded the contract for the construction of a 1-story, 150 x 150 ft. power machine building.

ROCHESTER, N. Y.—H. Connolly Co., plans to build 2 story, 40 x 100 ft., brick addition to factory, at 43 Elizabeth St.

ROCHESTER, N. Y.—Northwest Fdrys., Inc., Curlew and Villa Sts., having plans prepared by J. H. Oberlies, archt., Rochester for building 2 story, 197 x 250 ft., brick foundry, on Villa and Valentine Sts. $150,000.

ROCHESTER, N. Y.—Selden Motor Co., Probert St., plans to build 2 story, 100 x 140 ft., brick and rein.-con. addition to plant. $58,000.

SENECA FALLS, N. Y.—Hammer & Nearpass plan to build a 3-story, 100 x 140 ft. garage on Fall and South Walnut Sts. $90,000.

SHERRILL, N. Y.—Hiller, Prophet & Jackson Co. is building a 2-story, 50 x 100 ft. garage on Seneca St.

SYRACUSE, N. Y.—The Self Lock Nut and Bolt Co., 190 North State St., Chicago, Ill., has purchased a 7½-acre site in East Syracuse, and plans to build a factory for the manufacture of self locks and bolts. $400,000.

SYRACUSE, N. Y.—The Syracuse Washing Machine Co., 507 East Water St., will soon award the contract for the construction of a 4-story, 200 x 250 ft. factory on Main St. $1,000,000.

SYRACUSE, N. Y.—Oberdorfer Brass Co., Water St., plans to build 1 story, 280 x 440 ft., brick, rein.-con. and steel factory, at Messina Springs. $350,000. M. L. King, Snow Bldg., archt. and engr.

TUCKAHOE, N. Y.—Hodgman Rubber Co. soon lets contract for building 5 story, 60 x 150 ft., rein.-con. and steel addition to factory. $200,000. W. L. Stoddart, 9 East 40th St., New York City, archt. and engr.

WOODHAVEN, N. Y.—Merritt Hosiery Co., c/o Block & Hesse, archts. and engrs., 18 East 41st St., New York City propose building 4 story, 60 x 180 ft., brick and steel factory on 104th St.

OHIO

CLEVELAND, OHIO.—Epworth Memorial and Euclid Ave. Methodist Episcopal Churches, care A. Sweitzer, pastor, East 55th St. and Prospect Ave., have been consolidated and plan to build 1-story, brick, steel and stone church on East 107th St. and East Blvd. $100,000.

CLEVELAND, OHIO.—City Club of Cleveland, care F. Hayes, Hollenden Hotel, seeking site and plans to build concrete, steel and brick clubhouse. $200,000.

CLEVELAND, OHIO.—East End Chamber of Commerce, 10708 Superior Ave., had plans prepared by T. G. Perren, archt., 912 Marshall Bldg., for 8-story, 80 x 120 ft., concrete, steel and brick commercial building on East 105th St. and Superior Ave. $400,000.

CLEVELAND, OHIO.—Sixth St. Huron Rd. Co., care Grieble & Eberling, archts., 517 Sloan Bldg., having revised plans prepared for 8-story, 80 x 178 ft., concrete, steel and brick commercial building at 640 Huron Rd. $350,000.

CLEVELAND, O.—Labor Lyceum Co., 2460 East 9th St., plans to build 8 story, concrete, steel and brick temple on East 18th St. near Prospect Ave. $300,000. W. S. Lougee, Marshall Bldg., archt.

CLEVELAND, O.—Detroit-Lake Ave. Co., Sloan Bldg., soon receives bids for building 6 story, 190 x 232 ft., concrete, steel and brick theatre on Detroit and Lake Aves. $600,000.

DAYTON, O.—Ware Hotel Co., West 5th St., plans to build 5 story, 40 x 190 ft., rein.-con. and brick hotel on West 5th St. $200,000. R. J. Paul, mgr.

DAYTON, O.—J. Thal, 123 South Main St., plans to build 3 story, 33 x 180 ft., rein.-con. and brick store. $175 000.

PENNSYLVANIA

PHILADELPHIA, PA.—Stewartson & Page, archts., 318 Walnut St., will build 4-story, brick and concrete addition to Children's Hospital, 18th and Fitzwater Sts. $100,000.

TEXAS

HOUSTON, TEXAS.—First Baptist Church, Fannin St. and Walker Ave., having plans prepared by J. A. Bruner, archt., Phila., for 1-story, 105 x 140 ft. auditorium, with two 10-story, 105 x 250 ft. wings on Lamar St., between Main and Fannin Sts. $1,000,000.

HOUSTON, TEXAS.—Thalin Club retained W. Watkins, archt., 1110 Scanlon Bldg., to prepare plans for 11-story, 96 x 96 ft., rein-con. and brick club on Fannin and Walker Sts. $700,000.

HOUSTON, TEXAS.—Baptist Hospital, Lamar Ave. and Smith St., proposes building 3-story, 54 x 100 ft., 7-story, 75 x 75 ft. and 5-story, 65 x 100 ft., rein.-con. and brick hospital on Lamar Ave. and Smith St. $600,000. R. D. Steele, 510 1st Natl. Bank Bldg., archt.

HOUSTON, TEXAS.—N. Esperson, 1611-12 Carter Bldg., plans to build 16-story, 50 x 50 ft. office with 1-story opera house in rear on Main St., between Rusk and Walker Sts. $1,500,000. Adams & Adams, Gibbs Bldg., San Antonio, archts.

VIRGINIA

ROANOKE, VA.—Bd. Educ. having plans prepared by H. C. Richards, archt., 1713 Sansom St., Phila., for 3-story, brick and stone high school on Park St. $450,000.

WASHINGTON

CENTRALIA, WASH.—Bd. Educ. plans to build Lincoln School, 2 story, brick or concrete. $55,000.

EVERETT, WASH.—C. W. Wiley plans to build 3 story, brick store and office on Hewitt Ave. $50.000.

PORT ANGELES, WASH.—Tourtellotte & Hummel, archts., McKay Bldg., preparing plans for 4 story, 75 x 120 ft., concrete hotel. $95,000.

SPOKANE, WASH.—Exch. Natl. Bank, 606 Riverside Ave., having plans prepared by J. A. Zittel, archt., Jamieson Bldg., for 4-story, 96 x 115 ft., stone bank on Howard St. and Riverside Ave.

WISCONSIN

MILWAUKEE, WIS.—Standard Oil Co., Brumder Bldg., soon receives bids for constructing 4-story, 75 x 150 ft., rein.-con. and brick office and service building on 4th St. $350,000. A. D. Koch, 1045 Wells Bldg., archt.

MILWAUKEE, WIS.—City will vote on $250,000 bonds to build police station. This amount, together with $250,000 recently voted, will make $500,000 available for work. C. E. Malig, City Hall, archt.

RACINE, WIS.—S. Sklute, 434 Main St., having plans prepared by A. Anis, archt., 139 N. Clark St., Chicago, for 7-story, 70 x 238 ft., brick and concrete or brick and mill construction store on Main St.

THIS BORDER IS A SKETCH "FROM LIFE" OF A PIECE OF CARVED WALNUT FURNITURE.

AMERICAN WALNUT

"The Cabinet-wood Superlative."

The War Brought It Out

The absolute insistence of our Government upon American Black Walnut for gun-stocks (and for aero-plane propellers to the limit of our capacity) developed the fact that the amount of American Walnut still available is *more than ample* for our domestic uses of several generations to come!

Its qualities are so incomparable among all hardwoods that it is no wonder that Walnut is classed as the supreme cabinet-wood of the world. If you inspect the palaces and museums of Europe and America you will get quite an awakening—and you will then be glad that Walnut is still plentiful and that you can "get yours"—and at most reasonable prices—though, of course, not in the "cheap" grades of furniture (those that you don't want anyhow). Just ask your furniture dealer. (He is a pretty good merchant and he knows Walnut.)

The brochure de luxe on American Walnut is now ready for your library table. On your request it will come with our compliments. Will you give us your name for a copy of the First Edition? Thank you.

AMERICAN WALNUT MANUFACTURERS' ASSN.

Room 1018, 616 South Michigan Blvd., Chicago

DIGEST
Of Manufacturers' Data

ARCHITECTS' OFFICE EQUIPMENT

BLUEPRINTING MACHINERY:
C. F. Pease Co., Chicago, Ill.

INKS:
Higgins, Chas. M., & Co., 271 9th St., Brooklyn.

PASTES:
Higgins, Chas. M., & Co., 271 9th St., Brooklyn.

PENCILS:
American Lead Pencil Co., 220 Fifth Ave., New York City.
Dixon Crucible Co., Jos., Jersey City, N. J.

BLACKBOARDS, SLATE

Natural Slate Blackboard Co., Pen Argyl, Pa.

BRICK

American Face Brick Assn., Chicago, Ill.

CARRIER SYSTEMS

Wagner Mfg. Co., Cedar Falls, Iowa. Wagner overhead trolley carrier systems.

CASEMENT WINDOWS

METAL:
Crittall Casement Window Co., Detroit, Mich. Crittall metal casement windows for office buildings, banks, public buildings, churches, university buildings, hospitals, residences, stores, factory offices, etc.
Pomeroy Co., Inc., S. H., 30 E. 42d St., N. Y.

CEMENT AND PLASTER

CEMENT:
Atlas Portland Cement Co., The, 30 Broad St., New York. Manufacturers of Atlas Portland Cement and Atlas-White Portland Cement. Sales Offices: Chicago, Philadelphia, Boston, St. Louis, Minneapolis, Des Moines, Dayton, Savannah. Mills: Northampton, Pa.; Hudson, N. Y.; Hannibal, Mo. Sales Manager, C. A. Kimball.

CORNER BEADS:
Concrete Engineering Co., Omaha National Bank Bldg., Omaha, Neb.
Milwaukee Corrugating Co., Milwaukee, Wis.

PLASTER:
Best Bros. Keene's Cement Co., Dept. C, Medicine Lodge, Kans., New York, Chicago. "Regular" for base and finish coats, general plastering; "Fine" for all ornamental plastering; Caen stone, etc.; "Coarse" and "Superfine" for art marble.

SPECIALTIES:
Bostwick Steel Lath Co., The, Niles, Ohio. Bostwick Corner Bead, Ground Bead, Cement Stops, Wall Plugs and Wall Ties.
Concrete Engineering Co., Omaha National Bank Bldg., Omaha, Neb.
Truscon Steel Co., Dept. 68, Youngstown, Ohio. Representatives in principal cities. Corner beads, "Kahn" curb bars, "Truscon" slotted inserts; "Kahn" adjustable inserts; "Trus-Con" National socket inserts; "Kahn" elastic filler and armor plates for expansion joints.

CLOCKS

Manufacturing and Sales Corp., 40 Cedar St., N. Y. C. Fowler electric clocks, Master clocks, secondary clocks, program clocks, time recorders and time stamps.

WATCH CLOCKS:
Newman Clock Co., Inc., 173 Fulton St., N. Y. C. Newman grille watch clocks.

COLUMNS

WOOD:
Hartmann-Sanders Co., Chicago, Ill.

CONCRETE REINFORCEMENT

BEAM CAGING:
Mitchell-Tappen Co., 15 John St., N. Y. C. S. M. C. for the concrete protection of steel beams, girders and columns.

THIS department is intended to assist our subscribers in readily determining the names and addresses of manufacturers of products in which they may be interested together with brief data about their material.

The headings and sub-headings are arranged alphabetically and have been selected in accordance with the intent of meeting the architect's thought in preparing his specifications.

If the information desired is not found here, it will gladly be supplied by the Service Department of THE AMERICAN ARCHITECT.

CONCRETE REINFORCEMENT—Continued

REINFORCEMENT:
American Steel & Wire Co., Chicago-New York.
Bostwick Steel Lath Co., The, Niles, O. Bostwick "Truss-V-Rib."
Concrete Engineering Co., Omaha National Bank Bldg., Omaha, Neb.
Truscon Steel Co., Dept. 68, Youngstown, Ohio. Representatives in principal cities. "Kahn" system reinforced concrete; "Kahn" bars; "Rib" bars; "Rib" lath; "Floretyles," "Floredome," etc.; flat and beamed ceilings of all types.

DAMPPROOFING
(See Water and Dampproofing)

DOORS AND TRIM

DOORS, STEEL:
Lupton's, David, Sons Co., Philadelphia, Pa.

HOLLOW STEEL DOORS:
Edwards Mfg. Co., The, 319-349 Eggleston Ave., Cincinnati, O.

INTERIOR CABINET WORK:
Mathews Bros. Mfg. Co., Milwaukee, Wis. New York Office, 52 Vanderbilt Ave.

STEEL ROLLING DOORS:
Kinnear Mfg. Co., Columbus, Ohio. Kinnear steel rolling doors and shutters, bifolding doors of wood and steel.

DUMB-WAITERS

Sedgwick Machine Wks., 159 W. 15th St., N.Y.

ELECTRICAL EQUIPMENT AND SUPPLIES

CONDUITS AND FITTINGS:
National Metal Molding Co., 1111 Fulton Bldg., Pittsburgh, Pa. "NATIONAL" metal molding for surface wiring; "SHERADUCT" and "ECONOMY" conduits, "FLEXSTEEL" armored cable and a complete line of fittings. Youngstown (O.) Sheet & Tube Co. "Buckeye" rigid conduit. "Realflex" armored conductor.

LIGHTING SYSTEMS:
General Electric Co., Schenectady, N. Y.

OUTLET BOXES:
General Electric Co., Schenectady, N. Y.

POWER PLANT EQUIPMENT:
General Electric Co., Schenectady, N. Y.

RECEPTACLES:
General Electric Co., Schenectady, N. Y.

SOCKETS:
General Electric Co., Schenectady, N. Y.

ELECTRICAL EQUIPMENT AND SUPPLIES—Continued

SWITCHBOARDS:
General Electric Co., Schenectady, N. Y.

SWITCHES:
General Electric Co., Schenectady, N. Y.

WIRES AND CABLES (Insulated):
Atlantic Insulated Wire & Cable Co., 52 Vanderbilt Ave., New York City.
Electric Cable Co., The, 10 East 43rd St., New York City.
General Electric Co., Schenectady, N. Y.
Okonite Co., The, 501 Fifth Ave., N. Y. C. Caudee Potheads. "Mauson" and "Okonite" Tape.

ELEVATORS AND HOISTS

CONVEYORS:
Otis Elevator Co., 11th Ave. and 26th St., N. Y. C. Gravity spiral.

ELEVATORS:
American Elevator & Machine Co., Louisville, Ky.
Kaestner & Hecht Co., 500 South Throop St., Chicago, Ill.
Otis Elevator Co., 11th Ave. and 26th St., New York. Offices in principal cities of the world. Electric, hydraulic, belt and hand power, inclined freight elevators and escalators.

ELEVATORS (Hand Power):
Sedgwick Machine Wks., 159 W. 15th St., N.Y.

ELEVATOR CABLE:
American Steel & Wire Co., Chicago-New York.

ELEVATOR DOOR HANGERS:
Wagner Mfg. Co., Cedar Falls, Iowa.

HOISTS (Ash):
Otis Elevator Co., 11th Ave. and 26th St., N. Y. C. Automatic coal and ash hoists, blast furnaces and ship hoists.

EQUIPMENT STEEL

LOCKERS AND SHELVING, STEEL:
Edwards Mfg. Co., The, 319-349 Eggleston Ave., Cincinnati, O.

FIREPROOFING MATERIALS

CAGING OR FORMING:
Mitchell-Tappen Co., 15 John St., N. Y. C.

METAL LATH:
Bostwick Steel Lath Co., The, Niles, O.; 135 N. 22nd St., Phila., Pa. Bostwick "Truss-Loop" and expanded metal in three types; "Diamond A," Niles and "Lock."
Concrete Engineering Co., Omaha National Bank Bldg., Omaha, Neb.
Truscon Steel Co., Dept. 68, Youngstown, O. Representatives in principal cities. "Hy-rib," "Rib" lath; "Diamond Mesh" lath.

FLOORS

COMPOSITION:
Barrett Co., The, 17 Battery Pl., New York, Branch Offices in all large cities.

MARBLE:
Appalachian Marble Co., Knoxville, Tenn.

NON-SLIP:
American Abrasive Metals Co., 50 Church St., N. Y. C. Feralun.

PARQUET:
Wood-Mosaic Co., New Albany, Parquetry, hardwood flooring, veneer and lumber.

WOOD BLOCK:
Carter Bloxonend Flooring Co., 1301 R. A. Long Bldg., Kansas City, Mo.

FOUNDATIONS

PILES:
Raymond Concrete Pile Co., 149 Cedar St., N. Y. C. "Raymond" concrete piles are made by driving a reinforced steel shell which is left permantently in the ground. This shell is then filled with concrete.

ALPHABETICAL INDEX OF ADVERTISERS ON PAGE 44

A Scientific Roof Design

THE most modern machine shop roof is neither a sawtooth nor a monitor, but combines the advantages of both without their defects.

It is called the Pond Truss, and is characterized by a V-shaped raised central portion, having vertical and sloping lines of weatherproof sash by which stale air is discharged.

When it runs north and south, morning and evening sunlight is reflected downward by the inverted roof, instead of being wasted as with the north-facing sawtooth.

Since the flanking roofs are low, the glare from high side walls filled with sash is avoided.

The Pond Truss was originated for the most effective use of Pond Continuous Sash. In the building here shown, two parallel Pond Trusses are used, with a Pond A-frame supplying air and light between them. The alternating high and low roof openings create natural air currents over the central area, such as neither the sawtooth nor monitor roof gives.

In the side walls, Lupton Pivoted Factory Sash gives both light and ample fresh air.

Let us tell you more about the correct use of Lupton Factory Sash and Pond Continuous Sash.

Olds Motor Works, Lansing, Mich. S. D. Butterworth, Archt. Motor Machining and Assembling plant. Interior view is taken under Pond A-Frame, and shows the uniform light distribution.

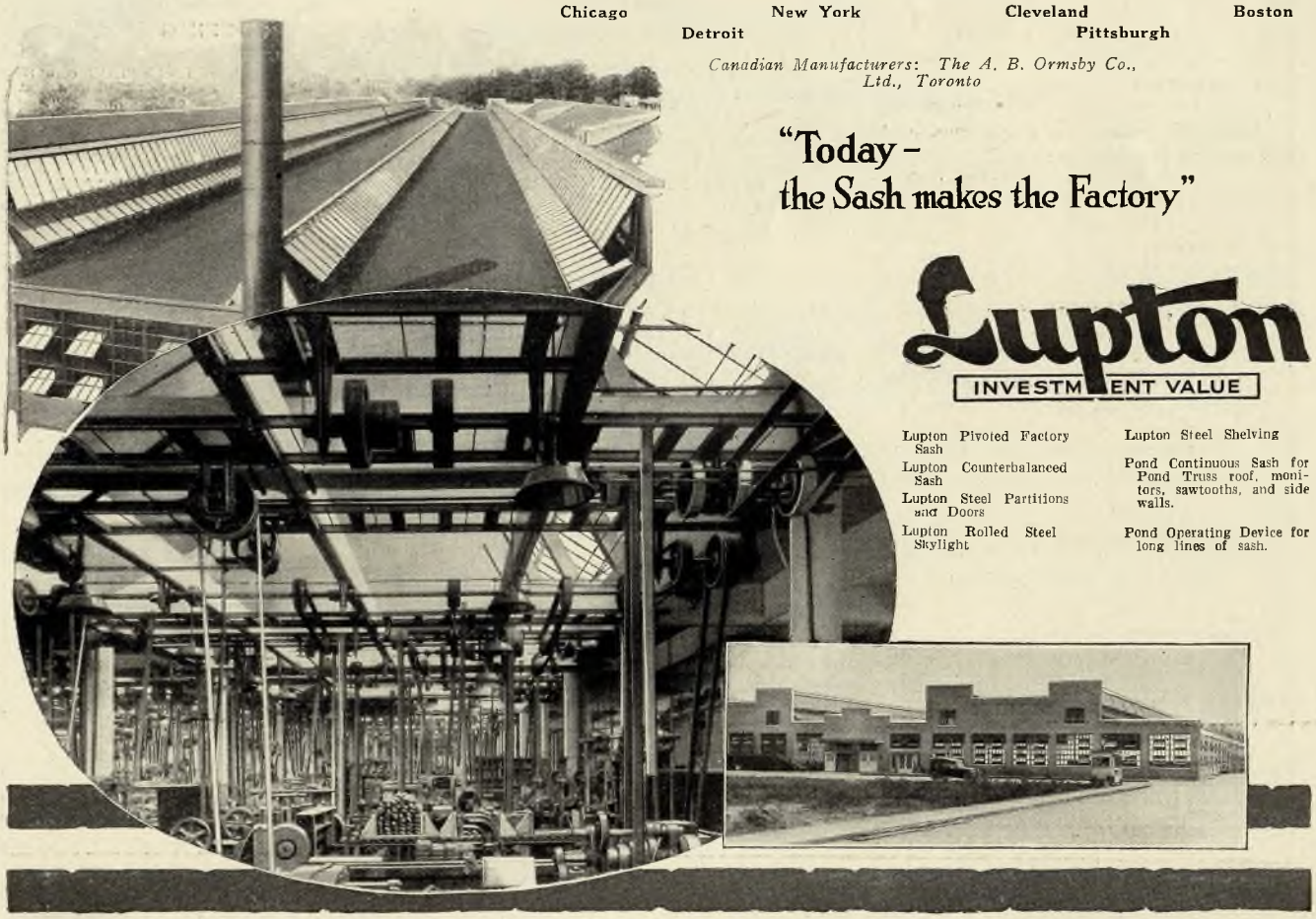
David Lupton's Sons Company

Tulip and Janney Sts. Philadelphia, Pa.

Specialists in daylighting and ventilating equipment for maximum production

Chicago New York Cleveland Boston
Detroit Pittsburgh

Canadian Manufacturers: The A. B. Ormsby Co., Ltd., Toronto



"Today – the Sash makes the Factory"

Lupton
INVESTMENT VALUE

Lupton Pivoted Factory Sash
Lupton Counterbalanced Sash
Lupton Steel Partitions and Doors
Lupton Rolled Steel Skylight
Lupton Steel Shelving
Pond Continuous Sash for Pond Truss roof, monitors, sawtooths, and side walls.
Pond Operating Device for long lines of sash.

FURNITURE AND DECORATIONS

DRAPERIES, UPHOLSTERIES, WALL COVERINGS:

Standard Textile Products Co., The, 320 Broadway, New York. "Sanitas" Tinted, Decorative and Glazed. Fast colors, sanitary. For private homes, hotels, auditoriums, institutions, etc.

WOOD WORK:

Mathews Bros. Mfg. Co., Milwaukee, Wis., New York Office, 52 Vanderbilt Ave.

GRATINGS

INTERLOCKED:

Mitchell-Tappen Co., 15 John St., N. Y. C.

HARDWARE

BUILDERS' HARDWARE:

Stanley Works, The, New Britain, Conn.

BUTTS AND HINGES:

McKinney Mfg. Co., Pittsburgh, Pa.
Stanley Works, The, New Britain, Conn. (Ball-Bearing)—steel, brass, bronze.

FIRE DOOR FIXTURES:

Wagner Mfg. Co., Cedar Falls, Iowa.

GARAGE HARDWARE:

Stanley Works, The, New Britain, Conn. Garage door holders and garage door hinges.

HEATING, VENTILATION PLUMBING

BLOWERS AND EXHAUSTERS:

Buffalo Forge Co., Buffalo, N. Y.

BOILERS:

Lord & Burnham Co., Irvington, N. Y.

BOILER FEED WATER PURIFYING APPARATUS:

Permutit Co., 440 Fourth Ave., N. Y. C.

CLOSETS:

Maddock's, Thomas, Sons Co., Trenton, N. J.

DRAINS:

Josam Mfg. Co., Michigan City, Ind.

DRINKING FOUNTAINS:

Cahill Iron Works, The, Chattanooga, Tenn.
Kohler Co., Kohler, Wis.
Maddock's, Thomas, Sons Co., Trenton, N. J.

FILTERS, OIL REMOVAL:

Permutit Co., 440 Fourth Ave., N. Y. C.

FILTERS, WATER:

Permutit Co., 440 Fourth Ave., N. Y. C.

IRON REMOVAL APPARATUS:

Permutit Co., 440 Fourth Ave., N. Y. C.

LAVATORIES:

Cahill Iron Works, The, Chattanooga, Tenn.
Kohler Co., Kohler, Wis.
Maddock's, Thomas, Sons Co., Trenton, N. J.

MARBLE, PLUMBERS:

Appalachian Marble Co., Knoxville, Tenn.

PIPE AND FITTINGS:

Crane Co., Chicago, Ill.

PIPE (Steel):

Crane Co., Chicago, Ill.
Youngstown Sheet & Tube Co., Youngstown, O.

PIPE, SOIL, CAST IRON:

Crane Co., Chicago, Ill.

SINKS:

Cahill Iron Works, The, Chattanooga, Tenn.
Kohler Co., Kohler, Wis.
Maddock's, Thomas, Sons Co., Trenton, N. J.

SINKS (Slop):

Cahill Iron Works, The, Chattanooga, Tenn.
Kohler Co., Kohler, Wis.
Maddock's, Thomas, Sons Co., Trenton, N. J.

TANKS (Closet):

Cahill Iron Works, The, Chattanooga, Tenn.
Kohler Co., Kohler, Wis.
Maddock's, Thomas, Sons Co., Trenton, N. J.

TEMPERATURE REGULATORS:

Johnson Service Co., Milwaukee, Wis.
Vapor Heating Co., York, Pa.

TRAPS:

Williams, Franklin, Inc., 253 Jefferson Ave., Newark, N. J.

TRAPS (Steam):

Crane Co., Chicago, Ill.
Jenkins Bros., 80 White St., N. Y. C.

HEATING, VENTILATION PLUMBING—Continued

TUBS (Bath):

Cahill Iron Works, The, Chattanooga, Tenn.
Kohler Co., Kohler, Wis.
Maddock's, Thomas, Sons Co., Trenton, N. J.

TUBS (Laundry):

Cahill Iron Works, The, Chattanooga, Tenn.
Kohler Co., Kohler, Wis.
Maddock's, Thomas, Sons Co., Trenton, N. J.

UNIONS:

Crane Co., Chicago, Ill.

URINALS:

Cahill Iron Works, The, Chattanooga, Tenn.
Kohler Co., Kohler, Wis.
Maddock's, Thomas, Sons Co., Trenton, N. J.

VALVES, GAS, WATER—STEAM:

Crane Co., Chicago, Ill.

VALVES, PRESSURE REDUCING:

Crane Co., Chicago, Ill.

VALVES (Radiator):

Jenkins Bros., 80 White St., N. Y. C.
Monash-Younker Co., 121 W. 42d St., N. Y. C.

VALVES, SPECIAL HEATING:

Crane Co., Chicago, Ill.

VALVES (Steam):

Jenkins Bros., 80 White St., N. Y. C.

VALVES (Water Line):

Jenkins Bros., 80 White St., N. Y. C.

VAPOR HEATING SYSTEMS:

American Dist. Steam Co., No. Tonawanda, N.Y.
Moline Heat, Moline, Ill.
Vapor Heating Co., York, Pa.

VENTILATORS:

Burt Mfg. Co., The,, 77 Main St., Akron, O. Manufacturers of all types of ventilators, both stationary and revolving.

WATER PURIFYING APPARATUS:

Permutit Co., 440 Fourth Ave., N. Y. C.

WATER RECTIFICATION APPARATUS:

Permutit Co., 440 Fourth Ave., N. Y. C.

WATER SOFTENING APPARATUS:

Permutit Co., 440 Fourth Ave., N. Y. C.

WATER TREATMENT:

Permutit Co., 440 Fourth Ave., N. Y. C.

WATER SYSTEMS:

Deming Co., Salem, O.

HOISTS

(See Elevators and Hoists)

INSULATION (Sound and Heat)

BUILDING:

Barrett Co., The. 17 Battery Pl., New York. Branch Offices in all large cities.
Cabot, Samuel, Inc., Boston. "Cabot's Quilt."

KITCHEN UTENSILS

ALUMINUM:

Aluminum Cooking Utensil Co., The, New York.

MARBLE

ARCHITECTURAL MARBLE:

Appalachian Marble Co., Knoxville, Tenn.

BANK FIXTURES AND INTERIOR MARBLE WORK:

Appalachian Marble Co., Knoxville, Tenn.

MUSICAL INSTRUMENTS

ORGANS:

Kimball, W. W., Co., Chicago, Ill.

ORNAMENTAL BRONZE AND IRON

Polachek, John, Bronze & Iron Co., 480 Hancock St., Long Island City, N. Y.

PAINTS, VARNISHES, STAINS

LEAD (Red):

Carter White Lead Co., Chicago, Ill.

LEAD (White):

Carter White Lead Co., Chicago, Ill.

PAINTS, VARNISHES, STAINS —Continued

LITHARGE:

Carter White Lead Co., Chicago, Ill.

PAINT:

E. I. du Pont de Nemours & Co., Wilmington, Del.
Patton Paint Co., Milwaukee, Wis., Newark, N. J. Patton's "Velumina" Oil Flat Wall Paint.

PAINT (Steel Protective):

Barrett Co., The, 17 Battery Pl., New York. Branch Offices in all large cities.
Moore, Benjamin, & Co., 331 Front St., Brooklyn, N. Y.
Dixon, Joseph, Crucible Co., Jersey City, N. J.

STAINS:

Cabot, Samuels, Inc., Boston. "Cabot's" Creosote Stains, Stucco Stains, Brick Stains. Old Virginia White and Old Virginia Tints.

VARNISHES:

Barrett Co., The, 17 Battery Pl., New York. Branch Offices in all large cities.
E. I. du Pont de Nemours & Co., Wilmington, Del.
Moore, Benjamin & Co., 331 Front St., Brooklyn, N. Y.
Pitcairn Varnish Co., Milwaukee, Wis.

PARTITIONS

METAL:

Lupton's David, Sons Co., Philadelphia, Pa.

PERGOLAS

Hartmann-Sanders Co., Chicago, Ill.

PLASTER

(See Cement and Plaster)

PLUMBING

(See Heating, Ventilation, Plumbing)

REFRIGERATION

REFRIGERATING APPARATUS:

Brunswick Refrigerating Co., New Brunswick, N. J.

REFRIGERATORS:

McCray Refrigerator Co., 607 W. Lake St., Kendallville, Ind.

ROOFING

ASPHALT:

Carey, Philip, Co., The, Lockland, Cincinnati, Ohio. Carey Flexible Cement Roofing. A roofing for all classes of buildings, flat or steep surfaces; concrete, tile or wood sheathing construction. Made of a flexible asphalt cement in sheets 36 in. wide by 36 ft. long.

BARRETT SPECIFICATION ROOFS:

Barrett Co., The, 17 Battery Pl., New York. Branch Offices in all large cities.

CANVAS:

Boyle, John & Co., 112 Duane St., N. Y. C. "Bayonne" Roof and Deck Cloth. Three weights of fabric. Width, 30 in., 46 in.
Hydrex Felt & Eng. Co., 120 Liberty St., N. Y.

SHEET METAL:

American Rolling Mill Co., The, Middletown, Ohio.
American Sheet & Tin Plate Co., Frick Bldg., Pittsburgh, Pa.

SLATE:

Rising & Nelson Slate Co., West Pawlet, Vt.; 101 Park Ave. Special slate to architect's design.

TILE (Reinforced-Cement):

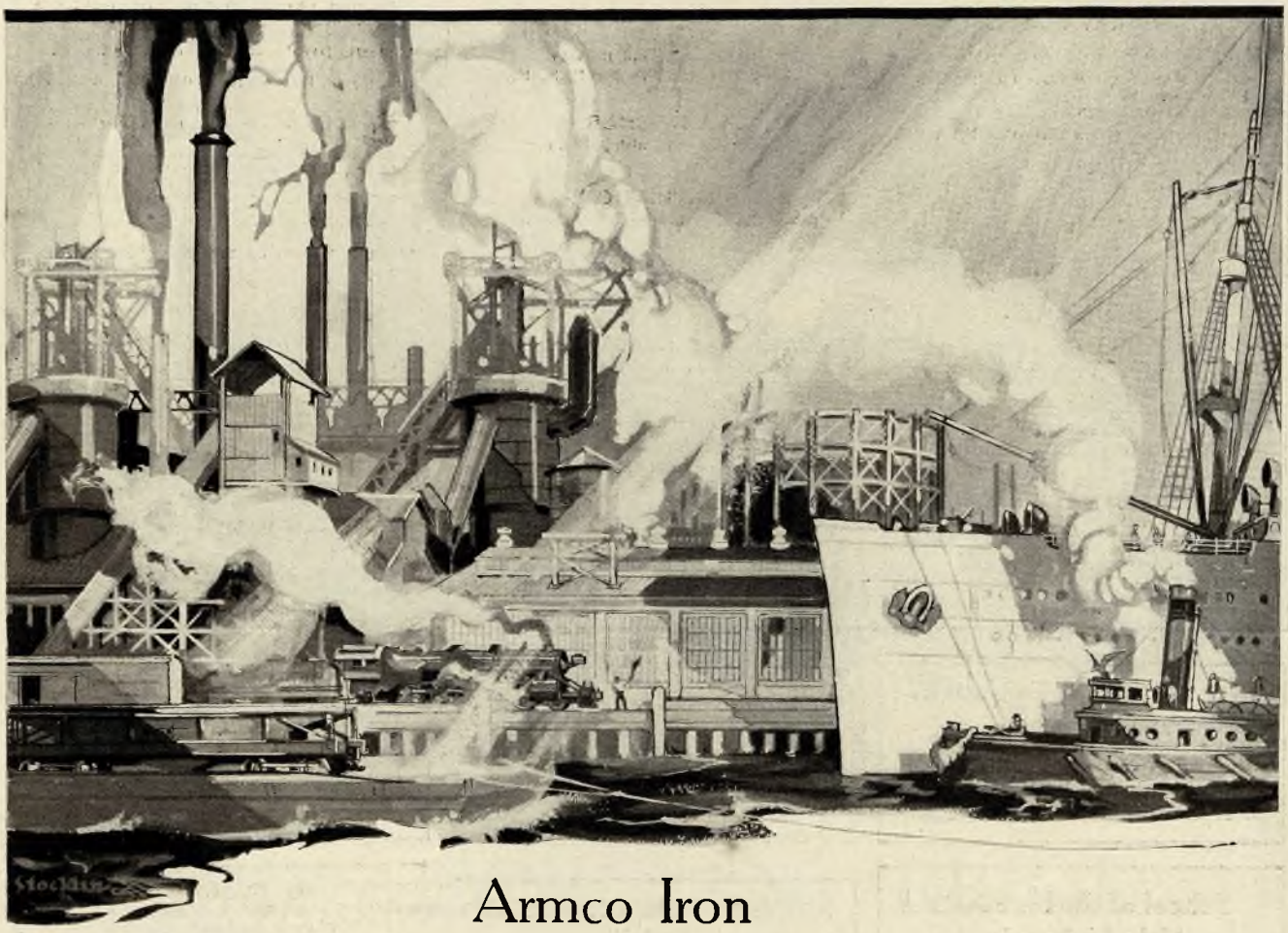
American Cement Tile Mfg. Co., Pittsburgh and New York. "Bonanza" roofing tile.

SAFETY TREADS

American Abrasive Metals Co., 50 Church St., N. Y. C. Feralun for stairs, ramps, platforms, door saddles, coal hole and trench covers, sidewalk inserts, etc.
Am. Mason Safety Tread Co., Lowell, Mass.
Solry Tile Mfg. Co., Brooklyn, N. Y.

ALPHABETICAL INDEX OF ADVERTISERS ON PAGE 44

ARMCO IRON Resists Rust



Armco Iron Reduces Costly Metal Replacements

BY reducing the need of costly replacements, Armco Iron annually saves many thousands of dollars to manufacturers and users of heavy-gauge metal products such as Freight Cars, Freight Car Doors, Rail Braces, Smoke-Stacks, Mining Cars, Gas, Oil and Water Tanks, Welded Barrels.

The unrivalled purity and evenness of Armco Iron make for unusual durability and resistance to various forms of corrosion. These same factors of purity and evenness also give to Armco (American Ingot) Iron perfect welding qualities, either for repair work or for the manufacture of stoves and other metal products where the sheets are welded directly together.

All manufacturers and users of heavy sheet metal products who want to benefit by metal conservation of an exceptional degree, should get in touch with us at once.

Durable Rivets

Armco Iron Punched Rivets, ½" in diameter or larger, are made by the Fort Pitt Rivet Co., Pittsburgh, Pa. Armco Iron Cold Headed Rivets, ⅜" in diameter or smaller, are made by the Fowler Rivet Co., Braddock, Pa.

AMERICAN ARMCO INGOT IRON

The trade-mark ARMCO carries the assurance that products bearing that mark are manufactured by The American Rolling Mill Company with the skill, intelligence, and fidelity associated with its products, and hence can be depended upon to possess in the highest degree the merit claimed for them. The trade-mark ARMCO is registered in the U. S. Patent Office.

THE AMERICAN ROLLING MILL CO.

MIDDLETOWN, OHIO

SASH

(See Window)

SASH CORD

Samson Cordage Works, 88 Broad St., Boston.

SHEET METAL

American Rolling Mill Co., The, Middletown, Ohio.
American Sheet & Tin Plate Co., Frick Bldg., Pittsburgh, Pa.

FORMED PRODUCTS:

American Sheet & Tin Plate Co., Frick Bldg., Pittsburgh, Pa.

METAL CEILINGS:

Edwards Mfg. Co., The, 319-349 Eggleston Ave., Cincinnati, O.

SHEETS (Protected):

Robertson, H. H., Co., Pittsburgh. Sheets plain and corrugated protected with asphalt and asbestos.

SKYLIGHTS

ROLLED STEEL:

Lupton's, David, Sons Co., Philadelphia, Pa.
Robertson, H. H., Co., Pittsburgh. "Waugh" puttyless skylight.

STAINS

(See Paints, Varnishes and Stains)

STRUCTURAL STEEL

PRESSED STEEL CONSTRUCTION:

Truscon Steel Co., Dept. 68, Youngstown, O. Representatives in principal cities. "Kahn" pressed steel beams, joists, studs, plates, etc.

TELEPHONES

Stromberg-Carlson Telephone Mfg. Co., Rochester, N. Y.

TERRA COTTA

N. Y. Arch. Terra Cotta Co., Tel. Astoria 700.

TILE

(See Flooring and Roofing)

Associated Tile Mfrs., Beaver Falls, Pa.

VARNISHES

(See Paints, Varnishes, Stains)

VENTILATION

(See Heating, Ventilation, Plumbing)

WALL BOARD

(See Stucco and Wall Board)

WATER AND DAMPPROOFING

Barrett Co., The, 17 Battery Pl., New York. Branch Offices in all large cities.
Hydrex Felt & Eng. Co., 120 Liberty St., N. Y.

WATER SUPPLY SYSTEMS

Carter, R. B., Co., 152 Chambers St., N. Y. C.

WINDOWS, METAL

Crittall Casement Window Co., Detroit, Mich. Solid steel and bronze windows for office buildings, banks, public buildings, churches, university buildings, hospitals, residences stores, factory offices, etc.

WINDOWS, METAL--Continued

Detroit Steel Products Company, Department No. 9, Detroit, Mich. Fenestra Solid Steel Windows are made from Solid Rolled Steel Bars interlocked by patented Fenestra joints. Ventilators are equipped with adjustable, removable butts. Fenestra Gravity Cam Latch automatically locks ventilators when closed. Patented Channel Section gives ventilators double weathering.

Lupton's, David, Sons Co., Philadelphia, Pa.

Pomeroy, S. H., Co., Inc., 30 E. 42d St., N. Y.

Truscon Steel Co., Dept. 68, Youngstown, O. Representatives in principal cities. "United" steel sash in all types; horizontal and vertical pivoted sash; counterbalanced and counterweighted sliding sash; center pivoted and top hung continuous sash; steel and glass partitions; sliding and swinging partitions; sliding and swinging doors; casement sash of all designs.

Winslow Bros. Co., 547 W. 27th St., New York City.

WIRE GLASS

Mississippi Wire Glass Co., 216 5th Ave., N.Y.C. Polished Wire Glass—"Romanesque," "Syenite," "Maze," "Pentecor," "Ribbed," "Rough." Figured Wire Glass—"Apex," "Romanesque," "Syenite," "Maze," "Florentine." "Figure No. 2." "Ondoyant." "Pentecor," "Ribbed," "Rough."

WOOD

WALNUT:

American Walnut Mfrs. Assn., Room 408, 115 Broadway, New York.

Architectural Illustrations
Perspectives
Rendered in any medium
H. LLOYD WEISS
4653 Grand Boulevard, Chicago

S. S. STORER, CONS. ENGR.
17 - Years Experience Structural Plans
Steel and Reinforced Concrete
Personal Attention. Fees Reasonable.
ATLANTA, GA.

Reinforced Concrete
Designs Estimates Redesigns
Detail Drawings Bar Lists
CONCRETE SERVICE CO.
165 W. 23rd St. New York City

School of the Fine Arts
Yale University
Department of Architecture

1. A four-year general course in Architecture leading to the degree of Bachelor of Fine Arts (B.F.A.).
   Students may specialize in the above course (a) in Design; (b) in Construction.
2. Special students properly qualified are admitted to the courses in the Department of Architecture.
   Students of the Department of Architecture may avail themselves of general allied courses in Painting and Modeling. For special catalogue of the Department of Architecture address Secretary of the School of the Fine Arts, Yale University, New Haven, Connecticut.

MODERN SCHOOL HOUSES
Part II
This volume gives the latest phases of School House design. Construction and Equipment in the United States; 170 pages of Plates; 80 pages of Illustrated Text. Price (postpaid), $7.50.
U. P. C. Book Company, Inc., Successor to The American Architect Book Department
241-249 W. 39th Street, New York

PERSPECTIVES
pencilled and rendered promptly—by Expert Colorist and Architectural Designer. Tentative sketch for approval on receipt of data. Address
Oak Cottage JAMES ADAMS Arlington, N. J.

BEAUX-ARTS INSTITUTE OF DESIGN
126 East 75th Street New York City
LLOYD WARREN, Director
— FIVE FREE COURSES —
Architectural Design Sculpture
Interior Decoration and Modeling of Ornament
Composition in Mural Painting
These courses, conducted in co-operation with the Society of Beaux-Arts Architects, the Art in Trades Club, the National Sculpture Society and the Society of Mural Painters, respectively, are modeled on the principles of teaching of the Ecole des Beaux-Arts of Paris, and are intended for the instruction of students of Architecture, Interior Decoration, Sculpture and Painting, and of apprentices and workmen in the artistic trades allied to Architecture. Interior Decoration and Painting may be followed outside of New York City by correspondence with the Institute. For the courses in Sculpture, Ornament Modeling and Interior Decoration instruction is given in the Studios at the Building of the Institute.
Circulars of information concerning any of the courses will be mailed to those applying for them.

Rendering of Perspectives in Any Medium
Drawing of Perspectives
G. A. Weisz, 15 East 40th St., N. Y.
Telephone Murray Hill 3659

UNIVERSITY OF NOTRE DAME
NOTRE DAME, INDIANA
COLLEGE OF ARCHITECTURE
Four-year courses in Design and Architectural Engineering with degrees. Graduate courses with Master's Degree. Two-year course in Design with certificate.
Catalogues on application

University of Michigan
COLLEGE OF ARCHITECTURE
Four-year courses in Architecture and Architectural Engineering. Two-year course for special students. For information, address College of Architecture, University of Michigan, Ann Arbor, Michigan.

MODERN SCHOOL HOUSES—Part II
The attention of architects is directed to PART II of Modern School House Design, Construction and Equipment.
170 pages of Plate Reproductions. 80 pages of Illustrated Text.
Price (postpaid), $7.50.
U. P. C. BOOK COMPANY, Inc.
Successor to THE AMERICAN ARCHITECT BOOK DEPT.
241-249 WEST 39th STREET, NEW YORK

RATES for Classified Advertisements

243 West 39th St., New York

Positions Wanted, 75 cents for 25 words or less and 2 cents for each additional word; Help Wanted, Special Notices, Competitions, Proposals, etc., $1 for 25 words or less and 3 cents for each additional word. Ten lines or more 30 cents per line. Copy received until 12 m. Friday. PAYMENTS STRICTLY IN ADVANCE.

Position Wanted advertisements of men who have been serving in the army and who desire to make connection with architects' offices will be inserted free of charge.

HELP WANTED

ARCHITECTURAL Designers and Draftsmen, also Architectural Engineering Designers wanted for positions in several different states, salaries $35 to $75 per week. No advance fee if you mention this ad. Address Arch. Dept., The Engineering Agency. (27th year), 1662 Monadnock Bldg., Chicago, Ill. (t.f.)

WANTED—Experienced draftsman immediately. Must be capable of making complete working drawings from Sketches. State experience and salary required. Howard F. Daly, Architect, Amsterdam, New York. (2303)

HELP WANTED

WILL older draftsman of experience in heating, plumbing and kindred lines take sketches and make drawings for reproduction in technical journal, employing his evenings or other spare time for the work. Knowledge of practice as essential as skill as draftsman. Should be able to confer New York office between 8.30 and 5. Address 97-C, care The American Architect. (2304-5-6)

POSITION WANTED

ARCHITECTURAL Draftsman and designer, University graduate 1916, wishes position of responsibility leading to permanent connection. East or South preferred. References given. Address 97-A, care The American Architect (2304)

SITUATION WANTED

MILL ARCHITECT and concrete engineer, 37 years old, 4 years college training, 12 years experience, for the last 7 years in charge of the Architectural and Building Department of a large manufacturing plant in Pa., also wide experience in industrial housings, would like to make a change. New York preferred. Address 97-B, care The American Architect. (2304)

"A product without a peer"

APOLLO-KEYSTONE
COPPER STEEL
Galvanized
Sheets

Highest in quality and rust resistance. Unequaled for Culverts, Flumes, Tanks, Roofing, Siding, Spouting, and all exposed sheet metal work.

We manufacture Sheet and Tin Mill Products of every description—Black and Galvanized Sheets, Corrugated and Formed Products, Roofing Tin Plates, Etc.

AMERICAN SHEET AND TIN PLATE COMPANY, Pittsburgh, Pa.

WINSLOW WINDOWS
AUSTRAL BALANCE

WINSLOW CASEMENTS
All Solid Rolled Steel

Scientific ventilation, maximum light, weather tightness, easy operation—the perfect window for Offices, Hospitals, Government buildings, etc.

WINSLOW BROS. COMPANY
Window Department
542 W. 27th ST., NEW YORK
Branches All Principal Cities

THE GEORGIAN PERIOD

AN ENCYLOPEDIA OF AMERICAN COLONIAL ARCHITECTURE
EDITED BY WILLIAM ROTCH WARE

No more serviceable and attractive series of measured drawings, and text descriptive of this subject, have ever been offered to the architectural profession than the contents of this work.

"A fine, even a monumental, piece of work."—*New York Times.*
"The most important work on Architecture yet produced in America."—*The Nation.*
"The most interesting of all American publications in the field of Architecture."—*Review of Reviews.*
"A magnificent collection of specimens of Colonial Architecture."—*Atlanta Journal.*
"The work is of extraordinary importance to the Architect, whose ambition rises above the building of cottages."—*Boston Transcript.*
"The publication is as interesting to the layman as it must be useful to the architect."—*New York Tribune.*
"It is a work of superior excellence and great usefulness."—*Irish Builder,* Dublin.
"Nothing that care can do has been spared to make the drawings useful and thoroughly practical for the use of the decorator and architect."—*The Building News,* London, England.
"The illustrations are extremely attractive . . . in short, the pictures here offered us, the objects represented, the reverence and regard shown, may set some of us thinking and wondering, and cannot but help to raise our taste and widen our sympathies."—*Architectural Review,* London.

12 parts, in portfolio, $60.00. Price for cash, $57.00.

Installment payments may be made—terms on request.

Any architect whose library does not yet contain this work is requested to send for our descriptive pamphlet and full sized sample plates.

U. P. C. BOOK COMPANY, INC.
Successor to
The American Architect Book Dept., 241-249 W. 39th St., New York

Can this Plaster Crack, Sag or Fall?

"Behind the plaster" is a region which isn't apt to interest your client very greatly BEFORE he occupies his structure.

Afterwards—if the plastered walls crack, if ceilings sag or fall,—"behind the plaster" assumes serious importance.

When you find a client who underestimates the importance of the right plaster-backing, let us furnish you with a pocket-size sample of TRUSS-LOOP. By convincing him of the need for Truss-Loop it protects you from unjust after-criticism.

Bostwick
TRUSS-LOOP

Bostwick
TRUSS-LOOP

1. So rigid that it bears its own weight without sagging, giving faster erection.
2. Triple-bond plaster-key makes for a lasting plaster surface.
3. Overlapping of outside rib furnishes automatic reinforcement, and eliminates wasteful overhang.
4. Self-furring.
5. Makes for cheaper framing,—studding on wider centers.
6. Permits faster trowelling.

A letter will bring you a pocket sample, complete data, and an exact form of specification if the logic of Truss-Loop appeals to you.

The Bostwick Steel Lath Company
Niles, Ohio

"Makes Plastering Permanent"

Modern School Houses

Part II

This Volume (none of the material in which duplicates Part I) is an exposition of the latest phases of School House Design, Construction and Equipment in the United States.

High School of Practical Arts, Boston.
J. A. Schweinfurth, Architect.

PART II contains:
170 pages of Plate Illustrations.
80 pages of Illustrated Text, of high value

Numerous schools of recent construction, notable for excellence, and located in States from the Pacific to the Atlantic coasts, are illustrated. A large number of floor plans and perspectives of interiors are shown in connection.

Much attention is given to the latest developments in Vocational and Manual Training Schools.

Contributed by C. B. J. Snyder, William B. Ittner, and other well-known Architects and Specialists in School Work.

This Text is descriptive of various notable Schools, Landscape Surroundings for Academic Buildings, Essentials of High School Planning, Lighting, Heating and Ventilating of Schools, etc.

Printed on heavy coated paper—Size 9 x 12 inches.

Substantial cloth binding

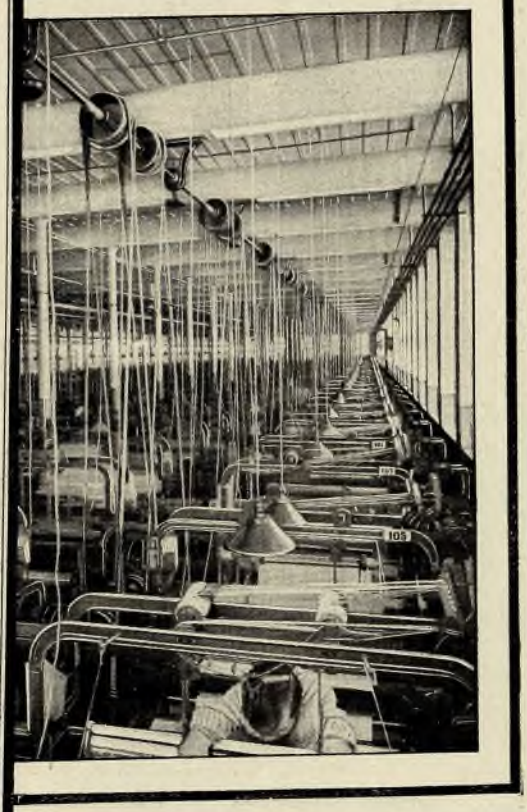
PRICE—(postpaid) - - - $7.50

U. P. C. Book Company, Inc.

Successors to

The American Architect Book Dept., 241-249 W. 39th St., New York

Doubles Daylight -and makes this difference!



Cheney Bros., one of the greatest producers of silks and fine fabrics in the country, have eliminated dark corners in their great mills by using "Du-Lite" Gloss White Mill Paint.

gets a profit out of dark corners

Right in your plant today you may find a lot of dark corners that do nothing but get cluttered up with junk and rubbish. Waste space — wasted profits.

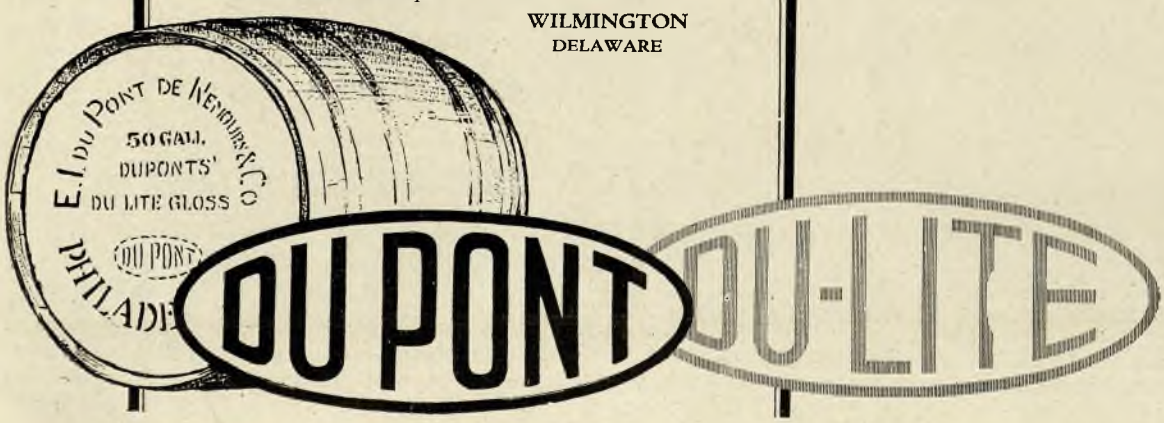
"Du-Lite" will correct this condition. It will let you get a profit out of every square foot. Its gleaming whiteness will light up the dimmest places in your plant. It will actually add to your floor space. Its use even in the most carefully designed plants means better light and more pleasant surroundings for your workmen. This means increased production and increased profits.

For over a century the Du Pont name has been the sign of progress and leadership. The Du Pont Oval on any product is your guarantee that it is—the finest that scientific production, unlimited resources and genuine desire to serve can produce.

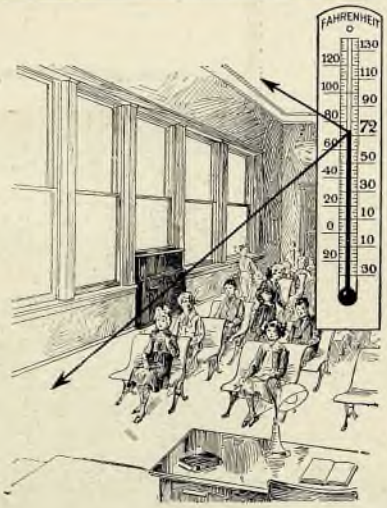
E. I. du Pont de Nemours & Company, Inc.

Sales Dept.: Paint and Varnish Division

WILMINGTON
DELAWARE



What Is Your Choice ?



From the gravity system down there have been progressive steps taken, all pointed toward the goal of the final solution of vexing heating and ventilating problems.

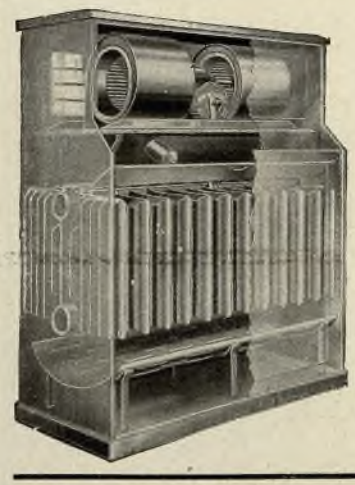
You know that the "Straight Blast" and "Split" systems, while headed right in many ways, do not go quite far enough.

But you *should* know, too, that the UNIVENT *has* gone far enough to be able to claim 100% heating and ventilating capacity—without extra radiators or ducts —each unit complete in itself.

UNIVENT
"LIVE OUTDOORS-INDOORS"

The UNIVENT is the *only* system which can deliver in the school you are now planning. We can prove it.

Moline Heat EVERYWHERE
Moline Illinois



See Complete Specifications in Sweet's Catalog, pages 1162 *to* 1182 *inclusive. Catalog and Engineering Data Book on Request. Dept. A.*

BRUNSWICK

Refrigerating

and

Ice-Making

Equipment

for

Clubs

Office Buildings

and

The Finer Residences

BRUNSWICK REFRIGERATING COMPANY
106 Jersey Ave.
New Brunswick New Jersey

BANZAI ENAMEL

ENAMEL lends itself to the widest range of decoration—from the brilliant emphasis of architectural effects to the quiet elegance of simple interiors.

It allows of no compromise of quality—and there will be none if Banzai Enamel—*freest flowing*—is used.

PITCAIRN VARNISH COMPANY

Milwaukee, Newark, San Francisco, Los Angeles and Seattle

EXPORT DEPARTMENT, WOOLWORTH BUILDING, NEW YORK CITY

PITTSBURGH PLATE GLASS COMPANY

Distributing stocks in all leading cities of the United States

Write for Portfolio of Enamel Interiors

PATTON'S Velumina

REG. U.S. PAT. OFF.

The OIL FLAT WALL PAINT

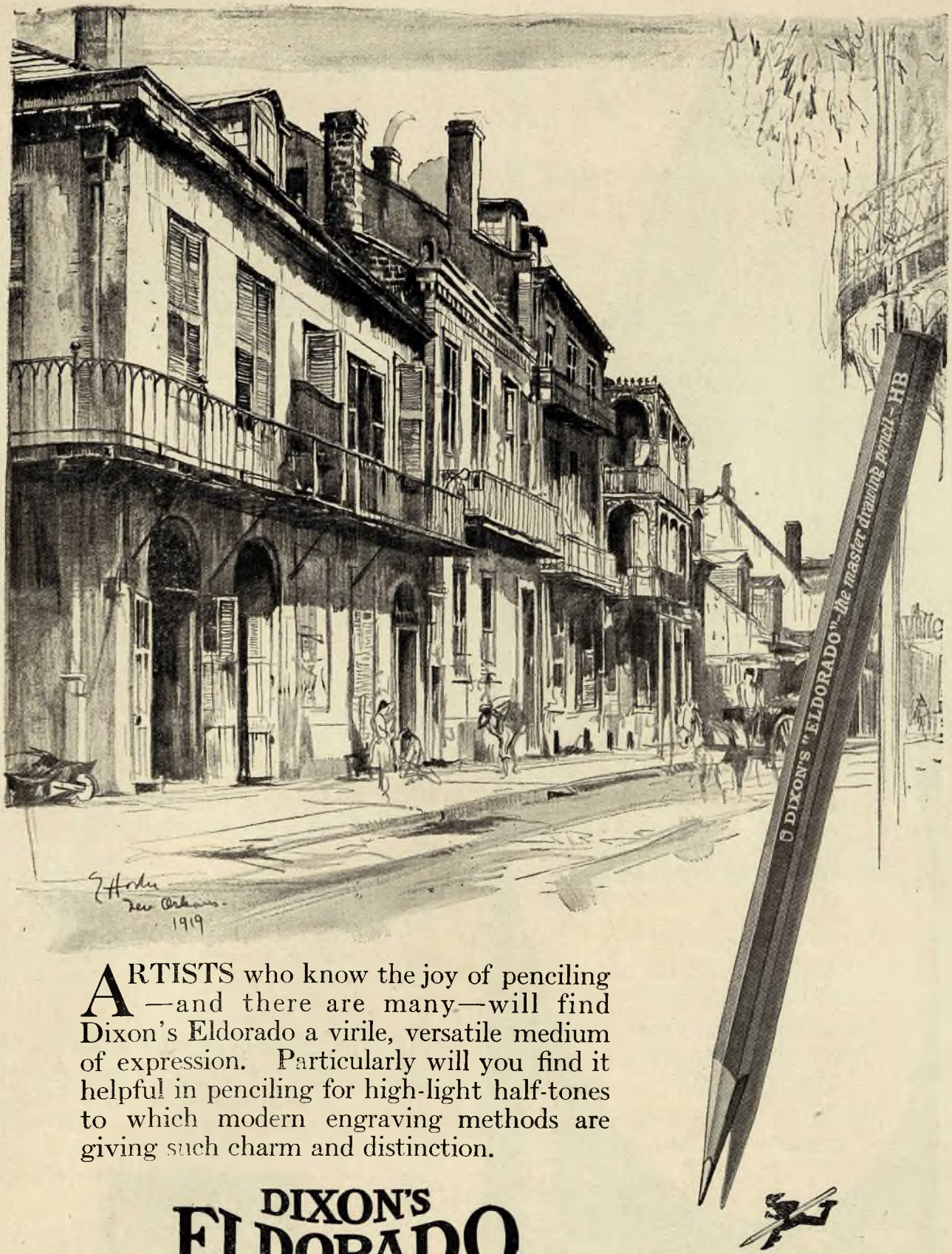
THE great art of simplicity finds expression in flat wall paints—and this is the flat wall paint, softest in tone, uniform and reticent even on greatest wall areas. No laps! No brush marks! No disturbing lustre! The *oil* flat wall paint, Velumina!

PATTON PAINT COMPANY
EXPORT DEPARTMENT, WOOLWORTH BUILDING, NEW YORK CITY

MILWAUKEE
NEWARK, NEW YORK, SAN FRANCISCO, LOS ANGELES & SEATTLE

PITTSBURGH PLATE GLASS COMPANY Distributing units in all leading cities of the United States

Write for Portfolio of Up-to-date Color Schemes



ARTISTS who know the joy of penciling —and there are many—will find Dixon's Eldorado a virile, versatile medium of expression. Particularly will you find it helpful in penciling for high-light half-tones to which modern engraving methods are giving such charm and distinction.

DIXON'S ELDORADO

"the master drawing pencil"

JOSEPH DIXON CRUCIBLE COMPANY
Pencil Dept. 14-J, Jersey City, N. J.
Canadian Distributors:—A. R. MacDougall & Co., Ltd., Toronto

SAMPLE OFFER

Dixon's Eldorado is made in 17 leads —one for every need or preference. Tell us the work you do, and we will mail you full-length free samples of your favorite leads. Also write for interesting pencil booklet —"FINDING YOUR PENCIL."

VENUS

The largest selling quality pencil in the world

VENUS PENCILS

EACH individual VENUS Pencil is a work of art; always dependable for exactness of grading and the highest excellence of manufacture.

17 black degrees, 3 copying

For bold heavy lines, 6B-5B-4B-3B
For general writing and sketching, 2B-B-HB-F-H
For clean fine lines, 2H-3H-4H-5H-6H
For delicate thin lines, 7H-8H-9H

Plain ends, per doz. $1.00
Rubber ends, per doz. 1.20

At stationers and stores throughout the world.

American Lead Pencil Co.
228 Fifth Ave., New York
and London, England

VENUS

The Hotel Du Pont, Wilmington, Del.. Speakman Company, Wilmington. Del., Jobbers; Alexander Bryant & Co., New York City, Plumbers

KOHLER
And HOTEL DU PONT

It is significant of the wide recognition accorded to the merits of Kohler Enameled Plumbing Ware that at the Hotel Du Pont, Wilmington, Delaware, the final touch of quality and comfort is added to the guest rooms by the installation of 98 glistening, snow-white Kohler "Viceroy" Built-in Baths. For these low-sided, full-sized, easily cleaned tubs are in general favor in the better hotels, clubs and homes.

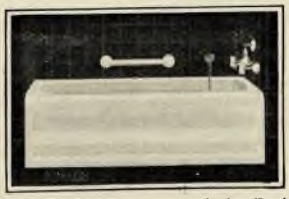
* * *

If your file lacks that convenient booklet, "KOHLER of KOHLER," illustrating and describing in detail the Kohler Enameled Plumbing Ware Products, kindly write

KOHLER OF KOHLER

Kohler Co., Kohler, Wis.
Shipping Point, Sheboygan, Wis.

AND TWELVE AMERICAN BRANCHES



Kohler "Viceroy" Built-in Bath
Recess Pattern

MANUFACTURERS OF ENAMELED PLUMBING WARE

The American Hospital of the Twentieth Century

by

Edward F. Stevens, Architect

A treatise on the development of medical institutions, both in Europe and in America, since the beginning of the present century.

Not only is this book of great timely interest but it is also certain to become and remain a standard authority, and as such deserves a place in the library of every architect and of all others interested in hospital planning or management.

An extraordinary wide field is covered by the photographic illustrations, which cover the various sections of such well-known institutions as the following: Virchow Hospital; Massachusetts General Hospital; Munich Schwabing Hospital; Peter Bent Brigham Hospital; Wesson Maternity Hospital; St. Thomas Hospital; Pasteur Hospital; Ohio Valley General Hospital; Cincinnati General Hospital; Bridgeport Maternity and Children's Hospital; German Hospital, Chicago; N. Y. City Hospital, Blackwell's Island; St. Luke's, Jacksonville; Quincy Hospital; Newton Hospital; Military Hospital, Issyles-Molineaux, and many others.

CONTENTS—Introduction: 1. In General. 2. Administration Department. 3. The Ward Unit. 4. The Surgical Unit. 5. The Medical Unit. 6. The Maternity Department. 7. The Children's Hospital. 8. The Contagious Department. 9. The Psychopathic Department. 10. The Tuberculosis Department. Out-patient. 11. Special Departments Social Service. Pathological and Roentgen-Ray. 12. The Small Hospital. 13. The Nurses' Residence. 14. The Kitchen and Laundry. 15. Heating, Ventilation, Plumbing. 16. Details of Construction and Finish. 17. Equipment. 18. Landscape Architecture as Applied to Hospitals. Some Recent War Hospitals.

300 pages, 350 Illustrations and Floor Plans.
Price, $5 Net.

ORDER BLANK

U. P. C. BOOK COMPANY, Inc.
243-249 West 39th St., New York

Enclosed find ..... for copy of Stevens' American Hospital of the Twentieth Century, to be shipped subject to refund if returned in good condition within ten days.

.....

.....

.....

Permutit

TRADE MARK

Water Rectification Systems

To every member of the household, to every home activity, the rain-soft water that a **Permutit** Softener gives brings a new delight.

Think of it! Water softer than rain, clear and live and sparkling as freshest spring water, flowing on the instant from every outlet—no matter what the character or source of the local water supply.

A simple piece of apparatus that a plumber can install in cellar or kitchen, needing less care and attention than the furnace or heater—that's a **Permutit** Softener.

And it can be put in an old house as easily as in a new one. Connect it to the piping like a hot water heater.

For mansion or cottage, for new homes or remodelled ones, specify **Permutit**—the Zerowater Softener, sold with the guarantee of the pioneer American water rectification specialists.

Have You The Catalog?

The Permutit Company

440 Fourth Avenue New York

Offices in All Principal Cities

WATER SOFTENERS **FILTERS**

WAGNER

Parallel Door Equipment

For Industrial Plants, Docks, Warehouses, Car Barns and Garages

Wagner Equipment for Parallel Doors insures easy operation at all times—simplicity and strength form the keynote of its construction.

On buildings where doors must be pushed back on the same side, this arrangement is ideal. Parallel doors in any number can be arranged so as to permit entrance at any point—any one or several of the doors can be opened, providing an opening as wide as necessary. Track may be hung to the ceiling, or side of the building as desired, inside or outside. Confer with our Engineering Department if your requirements are unusual—there is no charge for this service.

If interested in any of the following subjects, write for catalog.

17—Elevator Door Equipment.
18—Overhead Carrier Systems, Door Hangers and Tracks, Fire Door Fixtures.
G-19—Garage Door Equipment.
P-19—Sliding Flush, Parallel and Accordion Door Partitions.

WAGNER MANUFACTURING CO. DEPT. B CEDAR FALLS IOWA U. S. A.

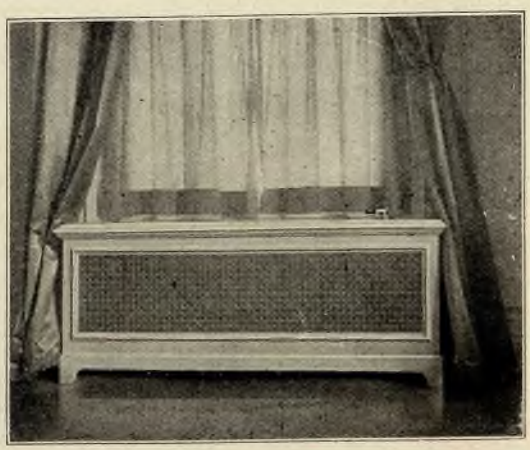
Architects can Recommend the Broomell System of Vapor Heating in Full Confidence

Because it is the most satisfactory method of heating known—using ounces when other systems require pounds.

The efficiency of the BROOMELL SYSTEM is conspicuously demonstrated by extreme requirements—other systems often insufficient in severe weather, and roast people out in mild days.

The BROOMELL SYSTEM will heat any building perfectly in the most severe weather, and in the spring and fall or in mild days in midwinter, when very little heat is wanted, any desired temperature can be maintained by turning the heat up or down at the radiator—something impossible with steam or hot water or any other system of heating.

Complete plans and specifications furnished on receipt of Architect's blue prints.



CONCEALED RADIATOR WITH CANE SCREEN
NOTE THE BEAUTIFUL HANGINGS

VAPOR HEATING CO.
YORK, PA.

597 Fifth Avenue, New York City
North American Bldg., Philadelphia, Pa.

Have You This Blackboard Data at Your Finger Tips?

Do you know how Blackboard Slate is prepared and finished? Do you know the correct heights for various grades of scholars? Do you know the most approved methods of setting? Do you know how to order? Have you a standard set of Natural Slate Blackboard Specifications?

The above are some of the subjects dealt with in the "Natural Slate for Blackboards"—a valuable reference work for Architects and Constructionists. Prepared, in co-operation with the Slate Industry, by D. Knickerbocker Boyd, Architectural Advisor and Structural Standardist.

Mailed upon request.

NATURAL SLATE BLACKBOARD CO.

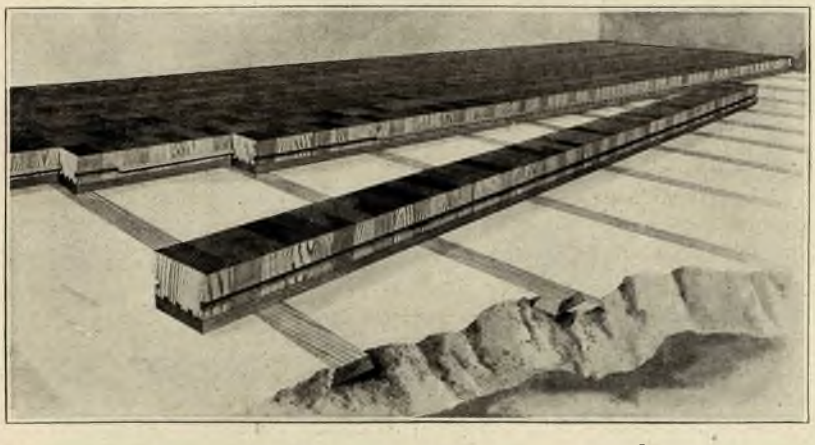
Headquarters: Pen Argyl, Pa.

Mills: Slatington, Windgap, Pen Argyl and Bangor.

The Floor That Stands Up

BLOXONEND FLOORING

Wood blocks dovetailed endwise onto wood base strip matched like flooring.



Perfect Installation Over Concrete with Imbedded Sleepers

LAYS SMOOTH
STAYS SMOOTH

BLOXONEND combines the durability and resilience of a street pavement with the smoothness of a matched floor. Adaptable to Wood, Steel or Concrete construction.

End of grain exposed to wear. Sections average 7½ ft. long.

If you need BLOXONEND you pay for it if you don't buy it. It pays for itself if you do. Write for booklet containing detailed information.

Carter Bloxonend Flooring Co.

Home Office, 1301 R. A. Long Bldg., Kansas City, Mo.
Chicago Office, McCormack Bldg.
New York Office, Astor Trust Bldg.

(In Sweet's)

For Future Generations

The Union Station at Kansas City, Missouri, was built with a view to the future as well as the present requirements of this growing city.
The Durability of the materials used in the building was therefore an important factor.
This naturally decided the Architect's choice of BEST BROS. KEENE'S CEMENT for the ornamental plastering.

Architect: Jarvis Hunt — View of Main Waiting Room

The Best Bros. Keene's Cement Co.

Medicine Lodge, Kansas

New York — Est. 1889 — Chicago

Est. 1889 — Trade Mark

Stands the Test

The wire that passes the inspector's test by a safe margin—the wire that endures the test of time is—

Dolphin Insulated Wire

—an Atlantic wire of high quality with great dielectric strength and resiliency. Its extensive use is proof of its dependability. Maximum service and entire satisfaction result from DOLPHIN insulation.

"Triton" is a high grade Atlantic insulated wire of uniform quality and strength, built along the same principles that have made all Atlantic Wires popular.

ATLANTIC INSULATED WIRE & CABLE COMPANY

Sales Office
52 Vanderbilt Avenue
New York, N. Y.

Factory
Stamford, Conn.

Baltimore, Md.
Electrical Sales Co.,
2 E. Redwood St.

Chicago, Ill.
Geo. C. Richards & Co.,
557 W. Monroe St.

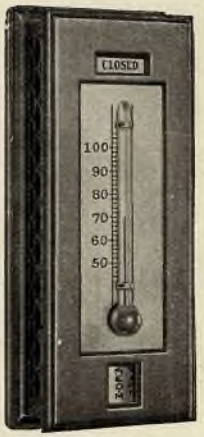
Boston, Mass.
A. D. Stein, Selling Agent,
156 Purchase St.

Louisville, Ky.
R. C. Coleman & Son
Starks Bldg.

Pittsburgh, Pa.
W. A. McCoombs & Co.,
Union Arcade Bldg.

St. Paul, Minn., Rank & Goodell, Merchants Bank Bldg.

-JOHNSON- JSC -SYSTEM-



ARCHITECTS who have made a study of modern methods of heating hotels, hospitals, schools, office buildings, residences and other structures almost invariably specify the

Johnson System of Temperature Regulation.

By this system the temperature of the important rooms is automatically regulated and the humidity controlled.

The neat, compact Johnson All Metal Thermostat contains no rubber diaphragms to wear out and give trouble.

Catalogs will be mailed on request.

Johnson Service Company
Milwaukee, Wis.

TEMPERATURE JSC REGULATION

CRITTALL STEEL CASEMENTS

for

Artistic Residences and other substantial buildings

Made in varied designs to meet all conditions

Crittall Casement Window Co.
Detroit
Manufacturers of Steel Casements and Windows
Manor Works, Braintree, England

PRELIMINARY ESTIMATES

Specification Clauses:

"The accompanying Quantity Survey shall be used as the uniform basis of bids and for that purpose bidders do not assume any responsibility for its accuracy and completeness."

"Before being asked to assume responsibility under contract for the erection and completion of the building in accordance with the drawings and specifications, a bidder selected for consideration of award of a contract will be given time to check the Quantity Survey for accuracy and completeness and if any errors are proved to exist in the Quantity Survey he shall change his bid correspondingly."

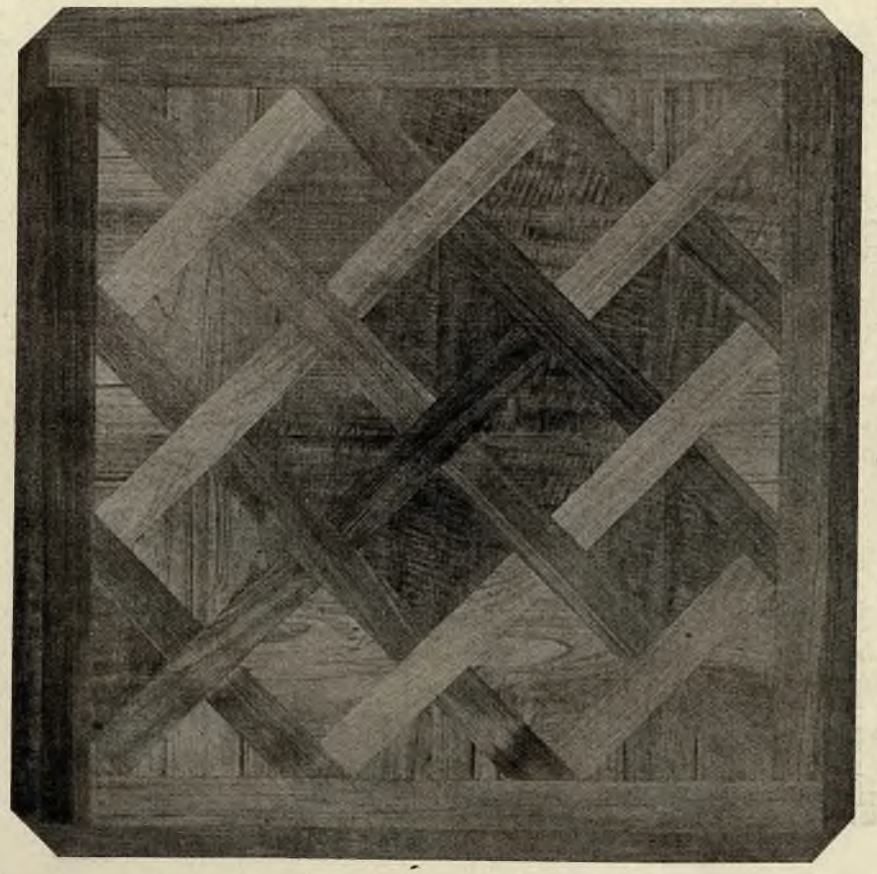
"The right is reserved to reject any or all bids."

From sketch plans and specification notes we make approximately accurate Surveys to be used as the basis of estimates of probable cost of a building. Estimates so made are more reliable than those based on cubage and provide opportunity to compare various qualities and classes of work looking to a harmonious distribution of cost. We frequently price up our Surveys to give an unprejudiced conservative estimate.

THE QUANTITY SURVEY CO., Inc.

WM. GRAVES SMITH, Pres.

Established 1914. **17 West 45th St., New York City** Phone, Bryant 3120.



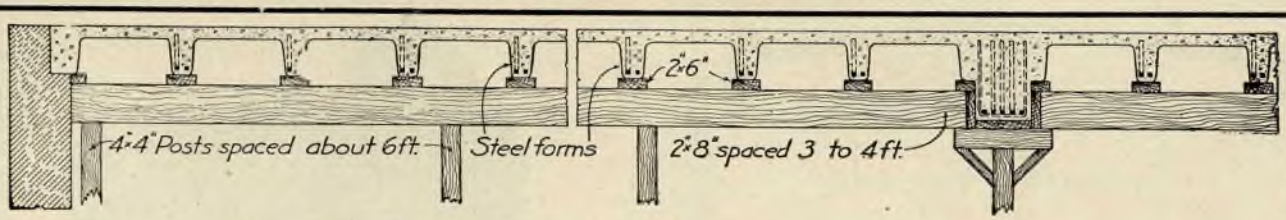
FAMOUS Fontainebleau design Floor used in various French Palaces.

This illustration shows Java Teak wood. We make this in various other woods.

Floor Laying Agencies in most of the large Eastern cities. Showroom and warehouse at Building No. 4, Bush Terminal, Brooklyn, N. Y.

Wood-Mosaic Company

New Albany, Indiana



Meyer Steelform Construction

Saves Concrete and Steel

The economical spacing of concrete joists formed with Meyer removable steelforms, eliminates all non-carrying concrete. This effects a decided reduction of dead load in beams, columns and footings. The construction carries the same load with less materials. This economy is especially noticeable in the longer spans.

The removal and rental features of Meyer 16 gauge Steelforms make a corresponding reduction in the cost of form work, so that with minimum quantities of concrete, steel and form work required, Meyer Steelform Construction is the logical system to use.

Write for our Handbook of Fireproof Construction, addressing the Omaha Office Department "B."

CONCRETE ENGINEERING CO.

OFFICES:
DETROIT - CHICAGO - MILWAUKEE - OMAHA
DES MOINES-KANSAS CITY-OKLAHOMA CITY

WAREHOUSES:
YOUNGSTOWN-CHICAGO
KANSAS CITY - OMAHA

We Finance Construction

FOR thirty-eight years it has been our function to aid in upbuilding American cities by providing capital for modern, fireproof buildings needed for housing purposes, for commerce and industry.

We are ready now, as in the past, to assist in financing construction of hotels, apartment, office, mercantile and industrial buildings.

Under the *Straus Plan* money is loaned, in amounts of $500,000 upward, in the form of first mortgage bond issues, and repayment is made over long periods out of the earnings of the property.

Call or write for our booklet explaining the *Straus Plan* of financing.

S.W. STRAUS & CO.

ESTABLISHED 1882 **INCORPORATED**

CHICAGO: Straus Building **NEW YORK: 150 Broadway**

DETROIT **MINNEAPOLIS** **SAN FRANCISCO**

Thirty-eight Years Without Loss to Any Investor

To Architects desiring to confer with specialists concerning their

PAINT PROBLEMS

we offer the assistance of our technical service department. Our experts are ready at all times to cooperate in every way possible.

Correspondence Invited

Benjamin Moore & Co.

Manufacturers of

Paints, Varnishes and Muresco

New York Chicago Cleveland St. Louis
Carteret Toronto

Pennsylvania Hotel

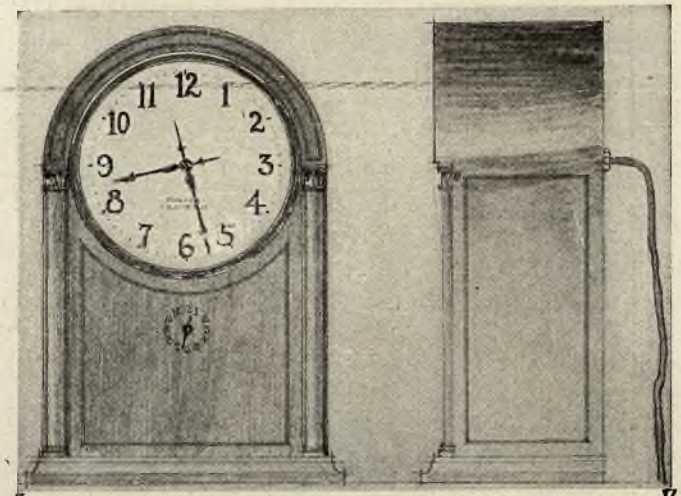
New York City

THE world's largest hotel is equipped with Stanley Ball Bearing Butts. It is another addition to the list of famous buildings which are Stanley equipped. Where architects and contractors have permitted only the best, there you will find Stanley.

THE STANLEY WORKS

New Britain, Conn.

New York **Chicago**



FOWLER DESK CLOCK

(With Alarm Attachment)

THIS model (one of many) is used in connection with the Fowler Electric Clock System in Hotels, Schools, Hospitals, Apartment Houses and Office Buildings.

The Fowler Master Clock which regulates the Desk Clocks and other Secondary Clocks is a marvel of accuracy and simplicity.

Estimates on installation of electric clock systems furnished and catalogue sent on request.

Manufacturing and Sales Corp.

40 Cedar Street **New York**

SOLRY

100% NON-SLIP COMPOSITION

Bathroom and Swimming Pool floors are very dangerous when wet.

Solry makes them slip-proof.

Write for full particulars

Solry Tile Manufacturing Co.

INC.

15 CLASSON AVE. BROOKLYN, N. Y.

We Are the Originators of the Lock-Joint Stave

This superior form of construction will be appreciated by the architect, but is found lacking in many so-called "lock-joint" staved columns now on the market.
We also manufacture Hardwood Staved and veneered columns, also a complete line of composition ornamental (staff) capitals; also sun dial pedestals, Pergolas, Garden Furniture and Porch Trim.

Write for complete catalogue.

HARTMANN-SANDERS CO.

CHICAGO, 2155 Elston Ave.
NEW YORK, 6 E. 39th St.

BOYLE'S BAYONNE ROOF AND DECK CLOTH

COMBINES all the qualities necessary to make it an ideal floor covering for Piazzas, Sleeping Porches, Sun Parlors, Conservatories, etc.

It is absolutely waterproof and is easy to lay, as it requires no white lead bedding; simply laid on dry boards, yet lays flat and stays flat. It neither buckles nor shrinks and is noiseless to the tread of feet or the patter of rain. Its remarkable durability makes it economical.

Nothing better made, and has years of service and the experience of architects the country over to recommend it.

Write to the manufacturers for sample book "N" with prices and specifications for laying.

JOHN BOYLE & CO., Inc.
Established 1860
112-114 Duane Street **NEW YORK** 70-72 Reade Street
Branch House: 202-204 Market St., St. Louis, Missouri

THIS CYLINDER SOLVED THE PROBLEM

In it we produce "CARTER," the white lead of superior

WHITENESS
FINENESS
and OPACITY

As these particular requirements are so essential to the production of smooth, uniform and durable paint films, the utmost in paint satisfaction is obtained when you specify "Carter."

You can point with pride to any work where you have specified "Carter," whether it was on the outside, with linseed oil, on inside walls with flatting oil or used as foundation coats for enamel. It shows to good advantage, wherever used.

All decorating is increased in beauty and durability when "the WHITE white lead" is used.

Distribution is nation wide.

See page 113 of the American Architect Specification Manual

CARTER WHITE LEAD CO.

VENT YOUR RADIATORS THE TRADE MONASH MARK WAY

Founded on 30 Years' Quality and Service

Specify MONASH No. 6

Four-Way Drain Automatic Air Valve, the only safe and reliable air valve for gravity heating systems. Guaranteed for five years—will last a lifetime.

The valve that is adjustable—locked shield—foolproof and self-cleaning automatically passes all air — will not leak water. Simple in construction—only valve made with a special air tube.

The Four-Way Drain Attachment drains off core sand and dirt, preventing flooding of floors and damage to ceilings below.

MONASH-YOUNKER CO.

NEW YORK
121 W. 42nd St.

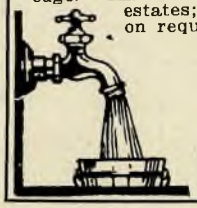
CHICAGO
553 W. Monroe St.

RUNNING WATER—

Is absolutely essential to make home comforts complete. Earn your client's gratitude by specifying a system of water supply that is noiseless, dependable, satisfactory. Back of every

Deming

Water Supply System is 40 years of specialized pump knowledge. Made for country and suburban homes; private estates; office buildings; factories, etc. Catalogue on request or see pages 1104-1107 in "Sweet's."



THE DEMING COMPANY
SALEM, OHIO

General Distributing Houses:
Chicago: Henion & Hubbell.
Pittsburgh: Harris Pump & Supply Co.
New York: Ralph B. Carter Co.
Denver: Hendrie & Bolthoff Mfg. & Supply Co.
San Francisco: Crane Co.

HIGGINS'
VEGETABLE GLUE, Etc.
DRAWING INKS
ETERNAL WRITING INK
ENGROSSING INK
TAURINE MUCILAGE
PHOTO-MOUNTER PASTE
DRAWING-BOARD PASTE
LIQUID PASTE
OFFICE PASTE

ARE THE FINEST AND BEST GOODS OF THEIR KIND

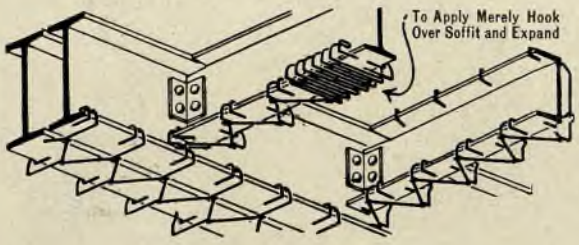
Emancipate yourself from the use of corrosive and ill-smelling inks and adhesives and adopt the Higgins' Inks and Adhesives. They will be a revelation to you, they are so sweet, clean and well put up, and withal so efficient. They are specially adapted for use in Architects' and Engineers' offices, as well as for general home and office use.

AT DEALERS GENERALLY

Chas. M. Higgins & Co., Manufacturers
Branches: Chicago, London 271 NINTH ST., Brooklyn, N. Y.

S. M. C.

locks the concrete to the beam.



S. M. C. Beam and Girder protection extends right into the most exposed points of the concrete coating, covering the corners, thus insuring the safety of the whole structure. Architects specify S. M. C. for they know the value of real fire protection.

MITCHELL TAPPEN CO.
15 JOHN ST. New York City

MISSISSIPPI WIRE GLASS

For protection against Fire and Breakage

Mississippi Wire Glass Co.
216 FIFTH AVENUE, NEW YORK
Chicago St. Louis

POMEROY FIRE RETARDANT WINDOWS

Not Made to Meet a Price, But To Set a Standard of Service

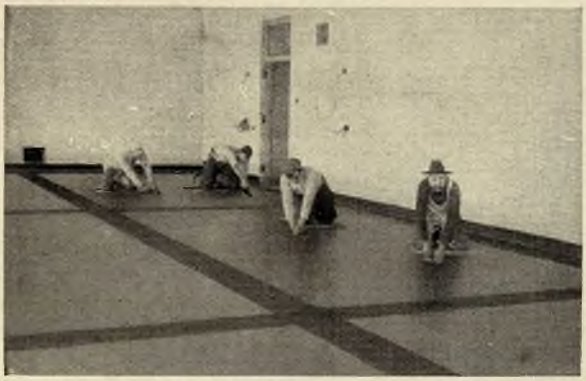
Send for our literature on Windows and Partitions

S. H. POMEROY COMPANY, Incorporated
282-296 EAST 134TH ST. NEW YORK

MULLER
ASBESTONE
GUARANTEED PRODUCTS
TRADE MARK

Hygienic Composition Flooring

DURABLE RESILIENT FIREPROOF



It takes but few words to state facts.

If you want to specify a safe, sanitary flooring. a flooring that has our reputation for QUALITY and WEAR back of it—if you want to exchange UNCERTAINTY for genuine RELIABILITY, and at a price as low as that of Wood, Linoleum, etc., specify and insist on the installation of

Asbestone Composition Flooring

Estimates, samples and full particulars on application.

FRANKLYN R. MULLER & CO.
Composition Floor and Stucco Manufacturers.
994 Madison Street, Waukegan, Illinois

ARCHITECTS who specify

STROMBERG-CARLSON

Inter-Communicating Telephones

do so because they know that the instruments will give satisfactory service, whether the talking distance is fifty feet or a thousand miles.

Stromberg - Carlson Inter - Comm - Phone Systems require no operator—**pressing one button once** calls and completes the connection with any other station in the system. Made in all sizes up to 32 stations for offices, factories and residences.

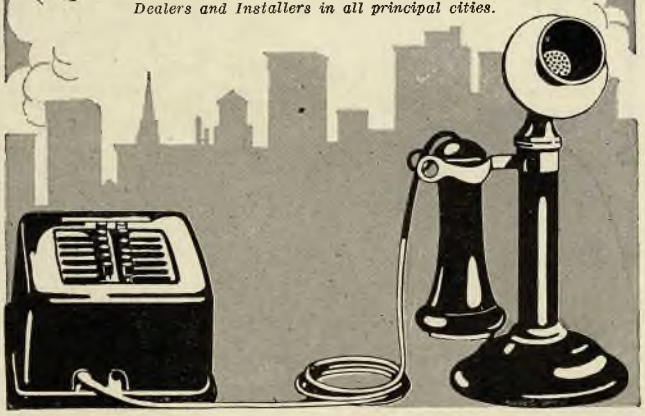
Bulletin 3017 contains engineering information, illustrations and prices which should be on file in every architect's office. Write for your copy now!

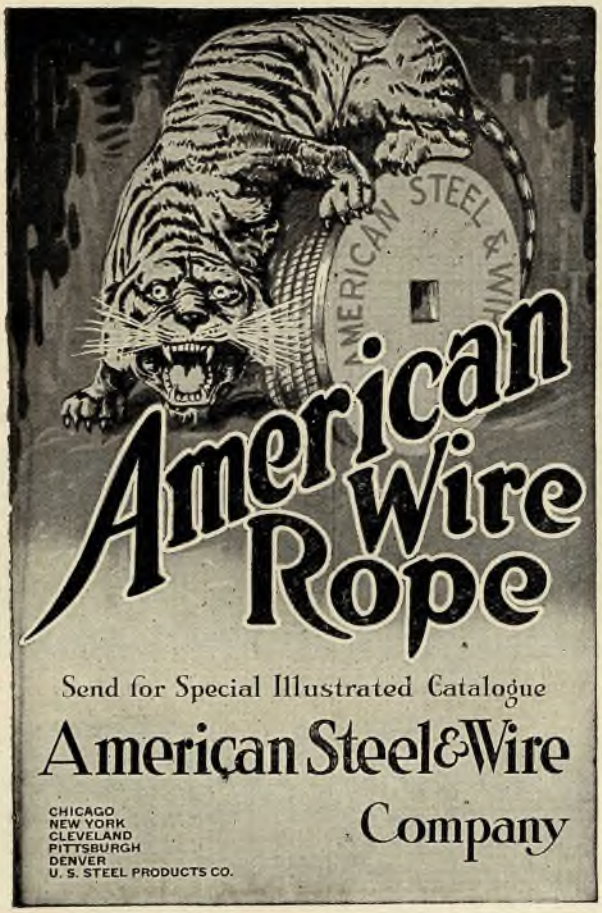
STROMBERG - CARLSON TELEPHONE MFG. COMPANY

Rochester, N. Y. **Chicago, Ill.**
Kansas City, Mo. **Toronto, Ont.**

Refer to Sweets Catalog and The American Architect Specification Manual for specifications and additional data.

Dealers and Installers in all principal cities.





Send for Special Illustrated Catalogue

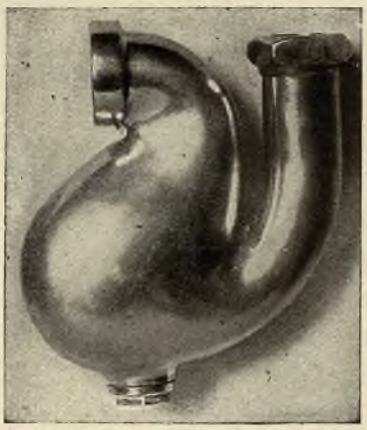
American Steel & Wire Company

CHICAGO
NEW YORK
CLEVELAND
PITTSBURGH
DENVER
U. S. STEEL PRODUCTS CO.

GECO

ANTI-SIPHON TRAP

Thorough Draining and Self-Cleaning



PREVENTS SIPHONIC ACTION

BARRIER AGAINST ENTRANCE OF SEWER GAS

REDUCES EXPENSE OF INSTALLATION

SOLVES COMPLEX PROBLEMS

INSURES SERVICE AND PROTECTION IN RESTRICTED SPACES

Franklin Williams, Inc.

39 Cortlandt Street, NEW YORK

INDEX OF ADVERTISERS

Ads. marked E.O.W. appear every other week — Ads. marked E.F.W. appear every fourth week
Ads. marked O.A.M. appear once a month

Jenkins Valves

Keep a Good Heating System "Good"—see that genuine Jenkins Valves go on the radiators.

JENKINS BROS.

New York, Chicago, Boston, Philadelphia, Montreal, London

2032-J

AMERICAN ELEVATORS

Built by AMERICAN ELEVATOR *and* MACHINE CO. INCORPORATED LOUISVILLE, KY.

OKONITE Insulated Electric Light Wires

Are pronounced by leading Architects to be *safe, durable* and *easily adjusted* for the inside wiring of *public* and *private buildings.*

THE OKONITE CO., Passaic, N.J.

Incorporated 1884

Novelty Electric Co., Phila., Pa. — Central Electric Co. Chicago, Ill., Gen. Western Agents — Pettengell-Andrews Co., Boston, Mass. — F. D. Lawrence Electric Co., Cincinnati, O.

OKONITE TRADE MARK

REG. U. S. PATENT OFFICE

SAMSON SPOT SASH CORD

SAMSON CORDAGE WORKS, BOSTON, MASS.

Atlas Cement used exclusively on the Panama Canal. 800,000 tests made by the Government without a single rejection.

"The Standard by which all other makes are measured."

The Atlas Portland Cement Company

New York Boston Philadelphia Savannah
Chicago Dayton Minneapolis Des Moines St. Louis

KINNEAR

ROLLING AND BIFOLDING DOORS of STEEL AND WOOD

Complete Labeled Service

Our Engineering Department will supply drawings and specifications upon request. Write for catalogue.

THE KINNEAR MANUFACTURING CO.
701-751 Field Ave., Columbus, Ohio, U. S. A.

"Southern Beauty" Enameled Ware

Manufactured by
THE CAHILL IRON WORKS
CHATTANOOGA, TENN.

A Sanitary Wall Covering

SANITAS MODERN WALL COVERING

130 style to choose from. Can't fade, crack or tear. Dirt proof—a damp rag wipes off dust and dirt. Colors and styles for any room—private or public. Samples on request.

The Standard Textile Products Co.
320 Broadway, Dept. F., New York
4-2

SKYLIGHT DATA

A reference book of data relating to skylight construction, of practical value to the architect, will be mailed in response to requests for our latest bulletin on Robertson Skylights. Send for a copy of this Robertson Bulletin today.

HH ROBERTSON CO
BUILDING PRODUCTS — BUILDING PRODUCTS
FORMERLY ASBESTOS PROTECTED METAL COMPANY (A. P. M.),
Pittsburgh, Pa.

"Buffalo"

It's significant that the largest schools and public buildings in the U. S. are equipped with

Buffalo Heating & Ventilating apparatus

Write Dept 11

Buffalo Forge Co. Buffalo, N. Y.

EDWARDS METAL SPANISH STYLE ROOFING

Its scores of vital, practical advantages cost no more than common roofing, yet mean tremendous economy—it needs no repairs and outlasts several ordinary roofs because of its practically indestructible metal construction.

It is absolutely wind, weather, storm, fire and lightning proof.

Literature and Samples on request.

The Edwards Mfg. Co.
319-349 Eggleston Ave.
Cincinnati, O.

Metal Roofing—Metal Garages—Portable Buildings—Steel Trucks, etc.

4

Raymond Concrete Piles

Made in place with protecting steel shell which remains in the ground.

RAYMOND CONCRETE PILE COMPANY
NEW YORK: 140 Cedar Street CHICAGO: 111 W. Monroe Street

The most economical paint to buy is the longest service paint. Labor for repainting is more costly than the higher price asked for the best protective paint.

DIXON'S SILICA GRAPHITE PAINT

for over fifty years has held the record of being the longest service paint. Booklet No. 14-B.

Made in Jersey City, N. J., by the
JOSEPH DIXON CRUCIBLE COMPANY
Established 1827

A RESPONSIBLE ORGANIZATION OF ENGINEERS & MANUFACTURERS

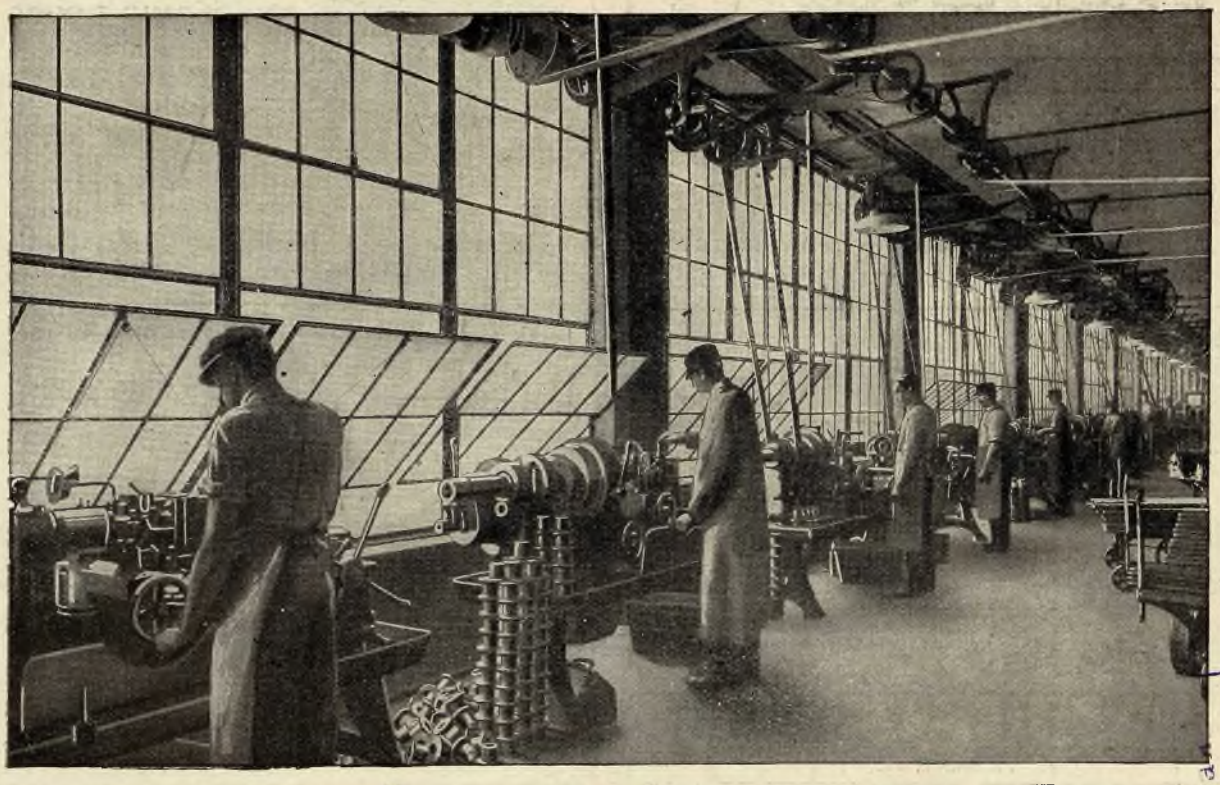
KAESTNER & HECHT CO.
ELECTRIC ELEVATOR BUILDERS
CHICAGO
DETROIT · ST. LOUIS · CLEVELAND · SANFRANCISCO

McKINNEY BUTTS FOR ALL DOORS

LITERATURE ON REQUEST

McKINNEY MANUFACTURING CO., PITTSBURGH, PA., U.S.A.

Free aids to production-



come in through the windows

DAYLIGHT and fresh air, these in abundance are *free* to the factory owner who puts foresight into the purchase of his windows.

A mistake made when the building is planned often means expensive illumination and ventilating problems.

Truscon Steel Windows are designed to meet all requirements for industrial buildings. Steel Sash provides daylight and fresh air which increase production, make accuracy more certain, and stimulate the vitality of workmen. Complete protection against weather and fire is afforded.

Truscon Steel Windows are conspicuous by their attractive appearance—their lines are clean cut. No unnecessary projections mar their surfaces. Hardware, workmanship, design and construction—each detail has been given the attention of experts in the manufacture of high quality steel products.

Truscon Steel Windows are carried in warehouse stock. Practically every lighting and ventilating problem can be solved by our thirty different types and sixty sizes. And their cost is moderate—made so by standardization and large production.

We shall be glad to help solve your problems. Our book "Truscon Steel Windows" will be sent free on request. It is a complete hand book of modern window construction, containing details, tables, specifications, illustrations, etc.—valuable to any manufacturer, architect or builder.

Военно-Инженерной Академии РККА

TRUSCON STEEL CO
TRUSCON
BUILDING PRODUCTS

TRUSCON STEEL WINDOWS

TRUSCON STEEL COMPANY
YOUNGSTOWN, OHIO

Warehouses and Sales Offices in Principal Cities

Reinforcing Steel, Metal Lath, Steel Windows, Steel Buildings, Pressed Steel, Cement Tile, etc.

20-00

THOMAS MADDOCK'S SONS COMPANY

TRENTON, NEW JERSEY

INSTALLATIONS

Architect: Howard Shaw, Chicago.
Plumbing Contractor: George M. Kearney, Evanston, Ill.
Plumbing Jobbers: National Plumbing & Heating Supply Co., Chicago.

IN THE MARK TOWNSITE, MARK, INDIANA

THE CONSISTENCY OF THE BETTER-HOMES IDEA WAS CARRIED TO FULLER REALIZATION BY THE INSTALLATION OF THOMAS MADDOCK'S MODERN, SANITARY PLUMBING FIXTURES.

ЦУНБ
им.Н.А.Некрасова
2 000001 343302

McCRAY REFRIGERATORS FOR ALL PURPOSES

OUR many friends among the Architects know that there is a McCRAY for every refrigerator need. The high quality of product and the length of satisfactory service—demanded by Architects—is found in McCRAY Refrigerators.

The particular point of excellence, which distinguishes all McCRAY Refrigerators is the McCRAY System of Refrigeration, perfected through Thirty-Five Years' of Experience. The convenient arrangement of the food compartments and their commodious storage capacity are McCRAY features.

We manufacture a complete line of Refrigerators and Cooling Rooms in stock sizes to meet the requirements of Residences, Hotels, Hospitals, Clubs and Institutions, Grocery Stores, Meat Markets, etc. These are arranged for either Ice or Mechanical Refrigeration.

PLANS FOR ASKING—Our Free Plan Service is open to all Architects. The ideas and suggestions of our Draftsmen are at your service. Send us a rough sketch—showing the general outline of your client's refrigerator requirements—and we will gladly make up blue prints and draw up specifications.

SEND FOR CATALOG—Our Catalogs will assist you when you are confronted with Refrigerator Problems. No. 95 for Residences. No. 52 for Hotels, Restaurants and Clubs. No. 63 for Meat Markets. No. 71 for Grocery Stores. No. 74 for Florists.

McCRAY REFRIGERATOR CO.
4061 LAKE STREET KENDALLVILL,E INDIANA
Salesrooms in All Principal Cities