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Model, Lake View Avenue Facade

The ELKS MEMORIAL

From Competition to Working Drawings

BY EGERTON SWARTWOUT, F. A. I. A.

I THINK it is always of interest to the profession to see the development of a design from the competition stage to the working drawings. An actual comparison is generally difficult because of the different mediums in which the design is expressed. It happened that at the time of the League Exhibition last Winter it was not possible to exhibit the competition drawings of the Elks Memorial, as they were in use at the office of the Commission, and therefore from the working drawings I redrew the elevation at the scale of the competition elevation, one-eighth, and Mr. Alfred M. Githens made a fine rendering of it. The plan I also redrew from the working drawings, at the same scale and in the same manner as the competition plan, and mounted it on the same stretcher.

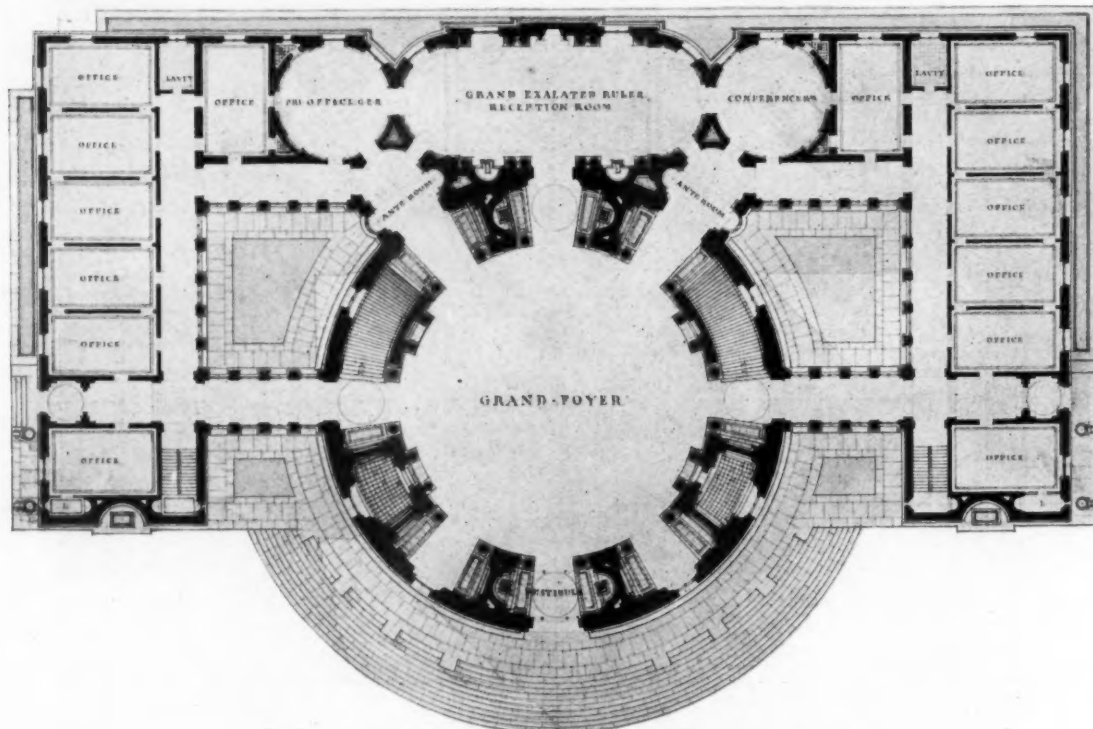
These drawings are herewith reproduced and a comparison will, I hope, show an improvement. The revised design incorporated in the working drawings was made from a series of careful studies and models, and the last of these models is shown by photographs, which, though excellent as photographs, hardly do justice to the care and skill with which the model was made by Mr. Menconi, nor do they give quite the same idea of proportion that the model does when actually seen. I think this is the case in all photographs of models—the camera does not adjust itself to the scale of the model, and the photograph of a model never looks as the photograph of the actual building would look when taken from the same point of view.

The principal change, perhaps, is the width of

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side wings. The competition program called for a certain number of rooms of a certain size and it also limited the size of the building, that is to say, there is a restriction on the property which definitely locates the exterior walls of the building on it. I was, therefore, forced in the competition to put the stairs in the wings at the end of the corridor in front, in order to obtain the requisite area for the rooms, and the end pavilions were, therefore, the width of the room and the corridor. I felt this was too wide and obtained permission to decrease the size of these rooms slightly and to

second floor, on my elevation the floor line being the floor of the colonnade, the space below this room being utilized for a large lobby, coat rooms and their dependencies. The placing of the Memorial Hall on the second floor called for a monumental stair which I placed in a concentric ring between the wall under the colonnade and the wall under the dome, landing under the portico in a low structure at the rear of the colonnade. I figured that this enclosure would hardly be visible from the street and if it were, would be unobjectionable. It is shown on the model as the model was



Competition Plan

eliminate the corridor upon the second floor, so that now the end pavilion is merely the width of the room, and the corridor extends only as far as the cross corridor.

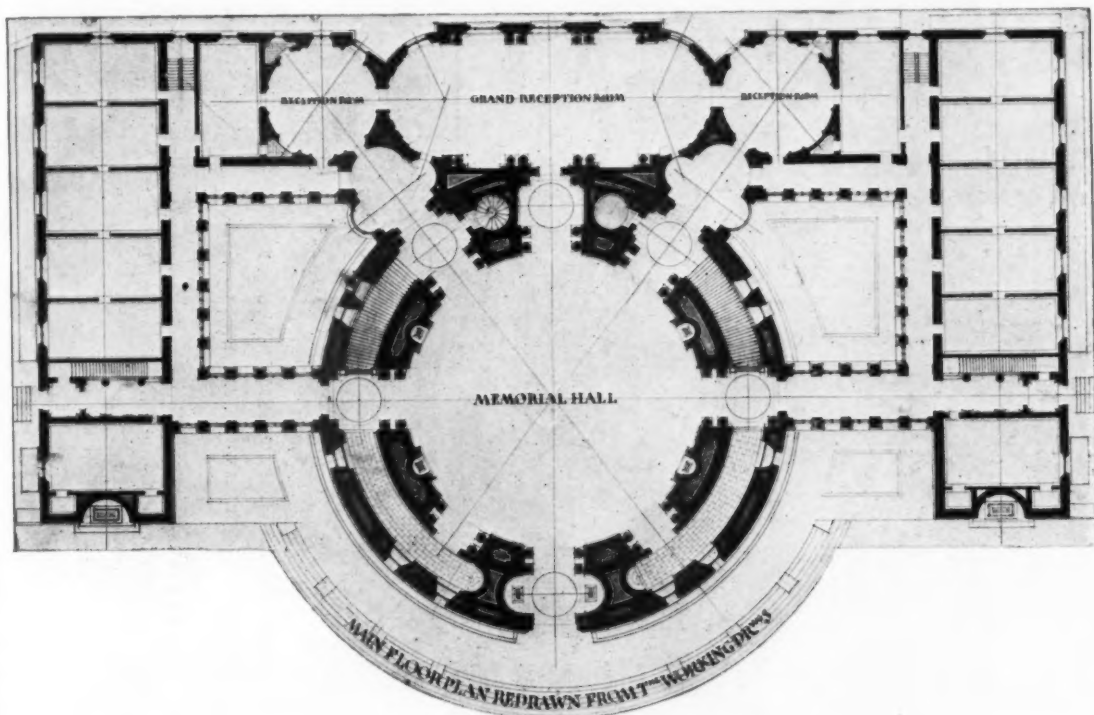
The other dimensions of the two plans are identical. Another change was a slight increase in the height of the main order and a considerable increase in the height and diameter of the dome. The competition elevation, I might add, came just inside the cube. One reason for the increase in diameter was a radical change in scheme by the Commission when the working drawings were half completed. The competition program, an excellent one, by the way, very simple and direct, prepared by Col. J. Hollis Wells, called for a Memorial Room of four thousand feet area on the

practically complete when the change was made.

The Commission, after some discussion, concluded that the Memorial Room would be finer if it were of greater height, and were entered directly from the terrace, and authorized me to omit the floor at the colonnade level, eliminate the lobby and nearly double the height of the room. Consequently now the stairs are gone, that is, the monumental stairs, and there only remain the narrower stairs to the coat rooms in the basement, and the depth of the colonnade is decreased by three feet from what it was on the competition drawing, and by one foot and a half from what is shown on the model. This is a great improvement. I felt in the competition drawing there was too much depth to the colonnade but I had

to have ten feet in the clear for the stairway. As a matter of fact, on the competition drawing the dome overhung the wall below by one foot six. This could not be seen because, on account of the columns it was impossible to line up these walls, and I felt it would not count in reality, but as a matter of fact you feel it in the model. You can't detect it visually, but somehow you feel it. "There is too much air in the colonnade" said Menconi, and I think that expresses it as well as any. The dome in the model is therefore one foot six less in diameter than in the revised elevation and it is

The basic marble will be a warmly tinted, slightly veined white marble while the shafts of the columns are of richly veined colored marble, lighter in tone for the small order, as these columns are seen against the white marble background, Pavonazza, Skyros, Cippolino and five or six other varieties and the upper columns are heavier and deeper in tone, Levanto, Tinos, Rouge Jaspe, Verona, Alps Green. In the floor, which is a series of round and square panels, the same variety is followed. The coffered ceiling will be deep in tone and rich with color and gold and the deep-

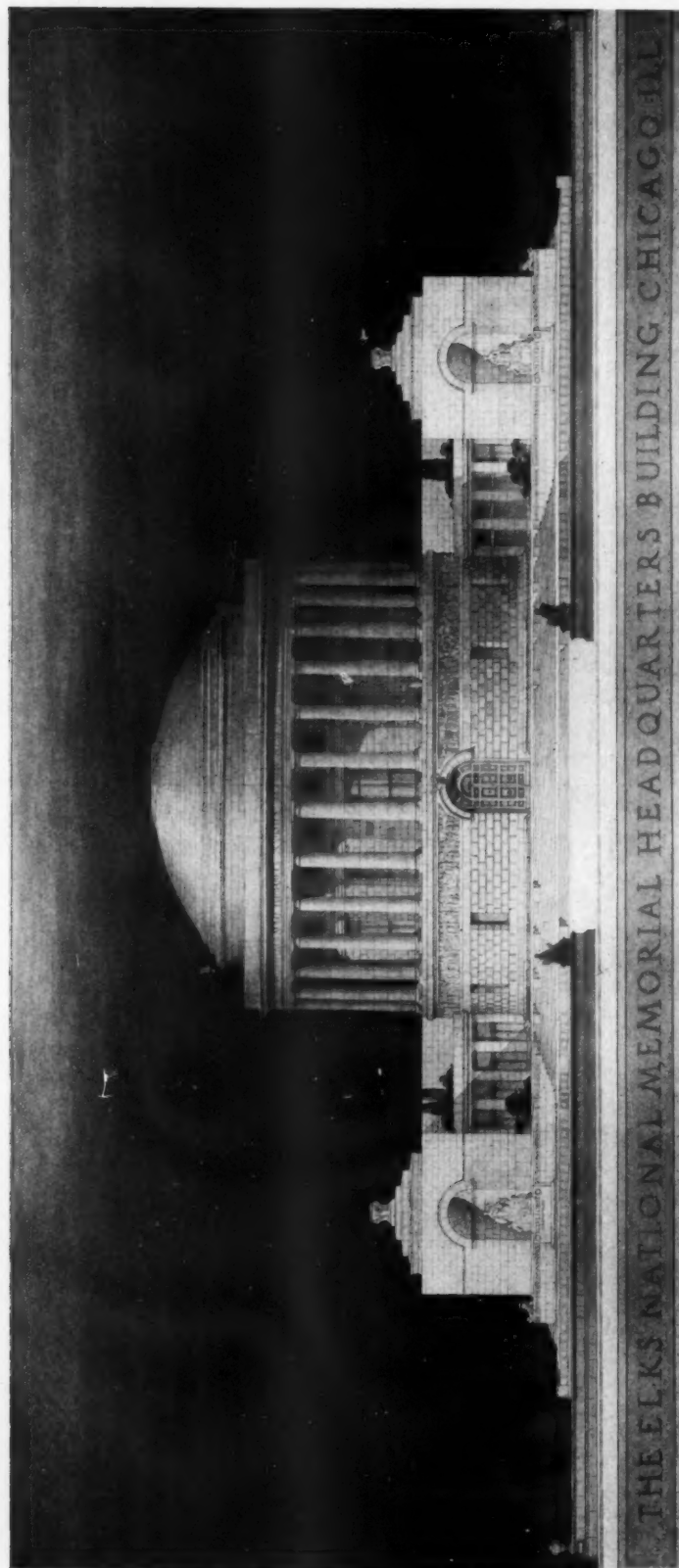


Revised Plan, redrawn from Working Drawing

one foot less in height, but the proportions and the curve are the same. The building can be seen from quite a distance as it fronts Lincoln Park, and it can also be seen quite a distance down Lake View Avenue. The dome must be high enough so that it does not disappear when seen from the sidewalk and must also present a good silhouette in direct elevation. We made a number of models of it, and finally decided on the present one which is now in its normal relation, directly over the wall below.

This change of scheme greatly improved the Memorial Hall. It is now as shown in Mr. Chester Price's charming sketch, sixty-seven feet in diameter and about ninety-four feet high, and is of marble up to the caps of the main order, except for certain panels in which will be mural paintings.

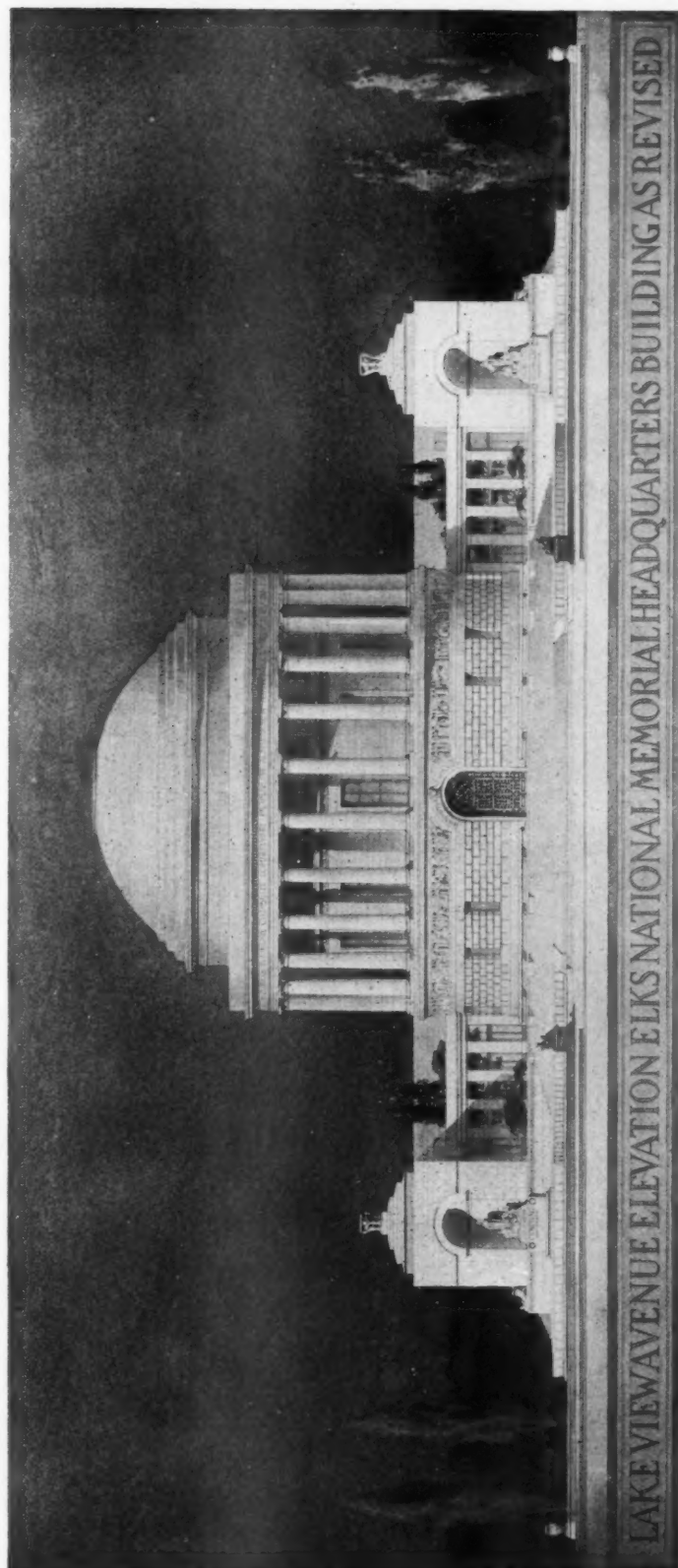
toned mural paintings and the bronze figures in the niches should combine to make a very powerful but subdued color effect. The room is lighted at night by a flood light from a great reflector in the eye of the dome. This reflector is roughly in section a hyperbola revolved around a center which is at one edge of the hyperbola, a hyperbola within a hyperbola, and the surface of it is covered with emblematic designs in gold, copper and silver leaf, so that in the daytime it will count merely as a piece of decoration and at night will reflect a flood of golden light from unseen, low-power searchlights down directly onto the floor, just as if there were a very brilliant flood of sunshine directly overhead coming through a golden tinted skylight. It's an experiment, frankly. I've never seen it done but I think it will be successful.



THE ORIGINAL COMPETITION DRAWING

EGERTON SWARTWOUT, ARCHITECT

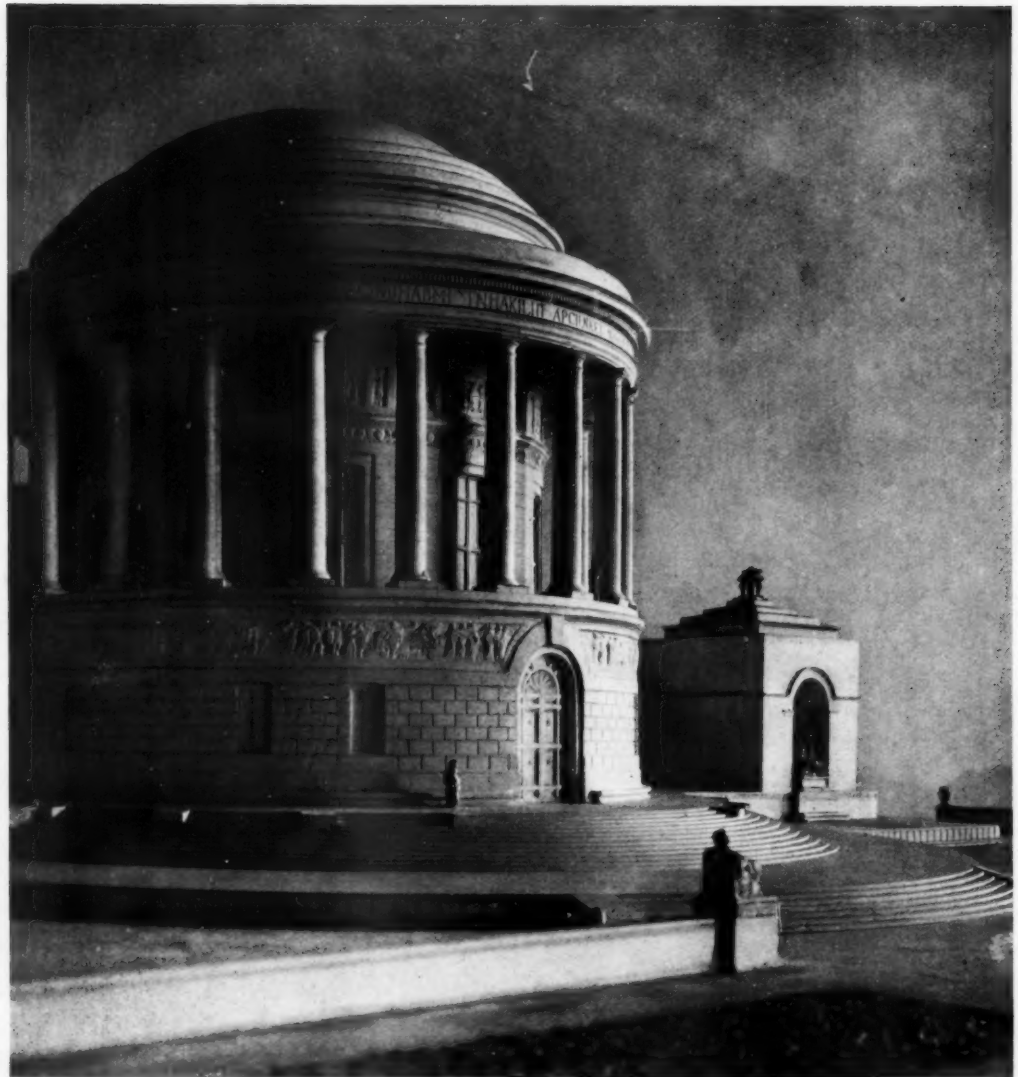
There were twenty-eight columns in the colonnade; the order was thirty feet high; the dome was lower; there were only four bays in the corridor connecting the central mass and the wings; the end pavilions were wider; the building not raised as much above the street level, and there was a four foot stone wall surrounding the entire site. The overall dimensions and the diameter of the circular colonnade are the same as in the revised scheme



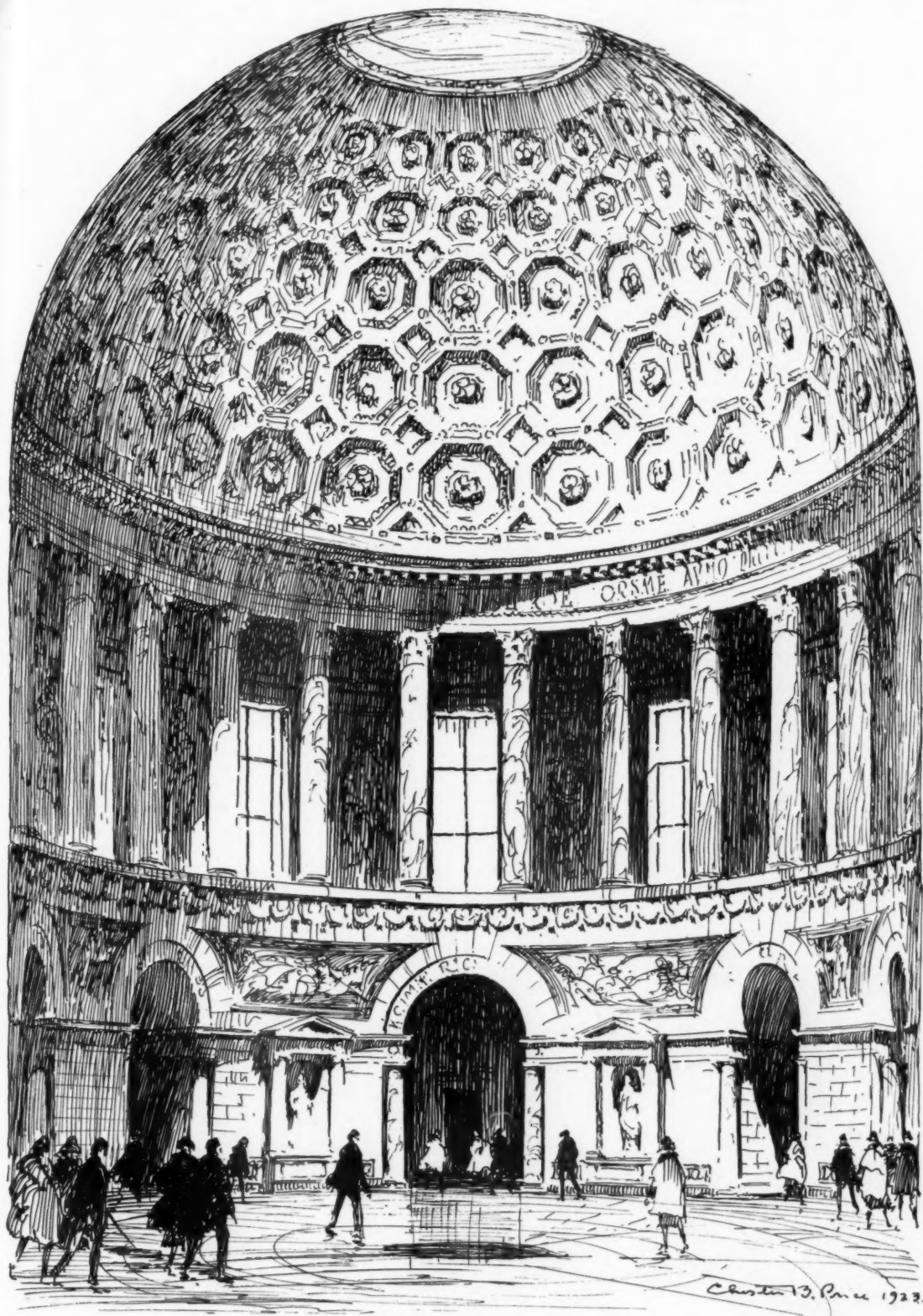
THE ELEVATION AS REVISED

EGERTON SWARTWOUT, ARCHITECT

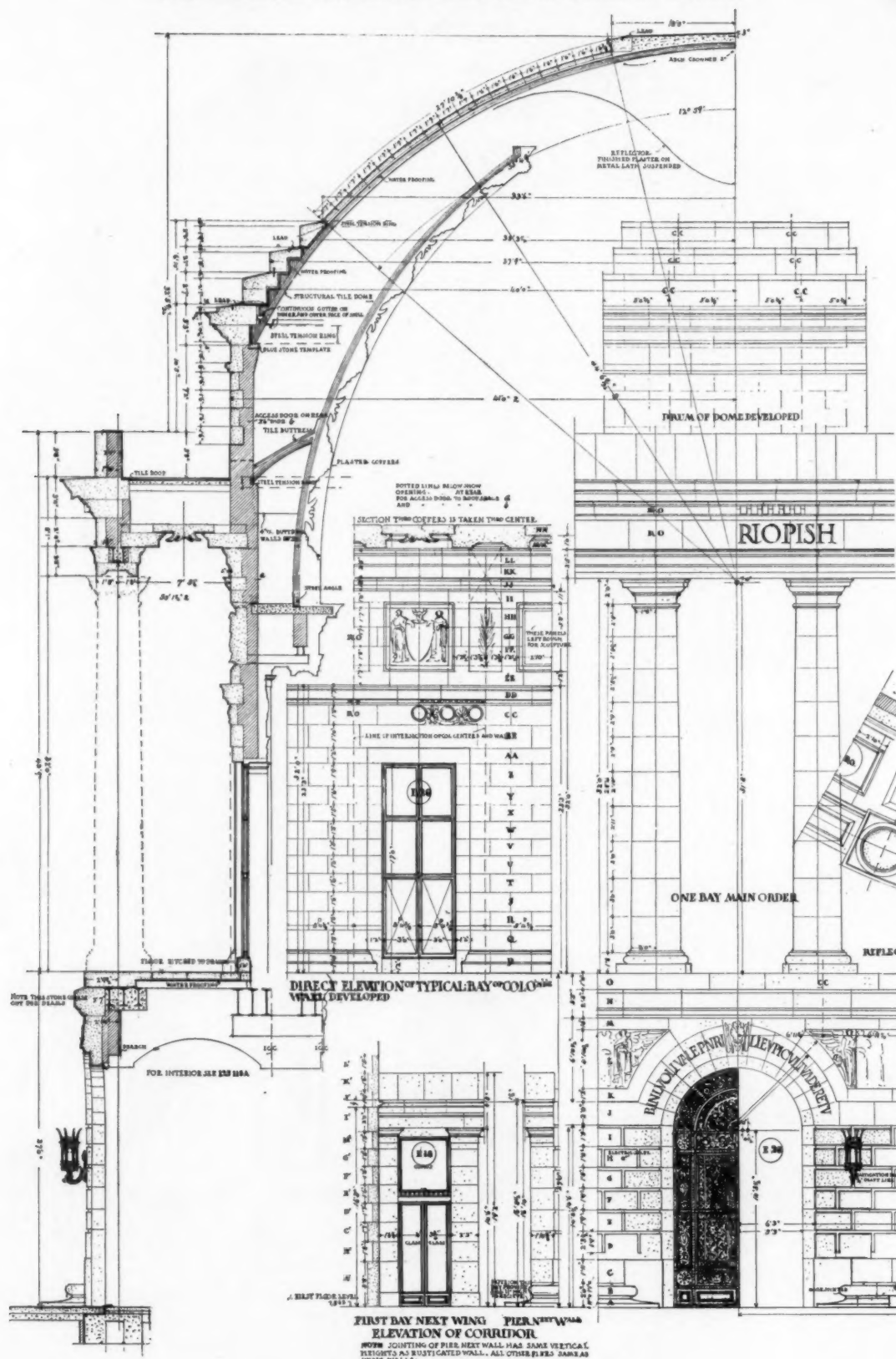
Redrawn from the working drawings at the same scale as the competition drawing, one-eighth. This shows the building as it is actually being built. There are twenty-four columns in the colonnade; the order is thirty-two feet high, that is to say, the columns themselves including capital and base; the dome has been heightened and is three feet wider than the original; the basement is higher; the end pavilions are considerably narrower and there is one more bay in the corridor; the archivolt over the entrance door and the projecting keyblock have been eliminated; the terraces are raised and in place of the wall there is a low retaining wall about twenty inches high at the property line, the general grade of the lot being about on the level of the top of this wall



PHOTOGRAPH OF MODEL, CENTRAL PORTION
ELKS NATIONAL MEMORIAL HEADQUARTERS BUILDING, CHICAGO, ILL.
EGERTON SWARTWOUT, ARCHITECT



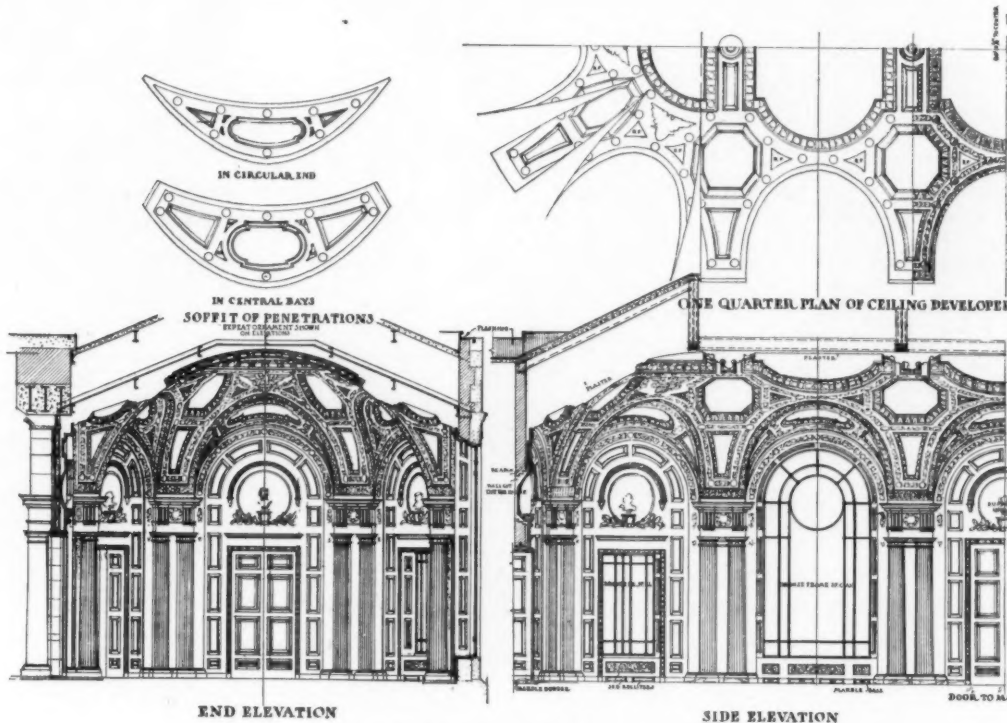
INTERIOR VIEW OF THE MEMORIAL HALL



The large Reception Room back of the Memorial Hall is of good size, thirty feet wide by seventy-five feet long and about thirty-five feet high. The walls are of English oak and the ceiling quite elaborately vaulted in plaster and decorated with mural paintings. It is instructive to compare the

suppose, because we are always a little afraid of our poché in a competition drawing and partly because the cube requirements and the area of the rooms called for won't allow much wall thickness.

I have been asked why I made a round building. I can only answer, why not? As a matter of fact,

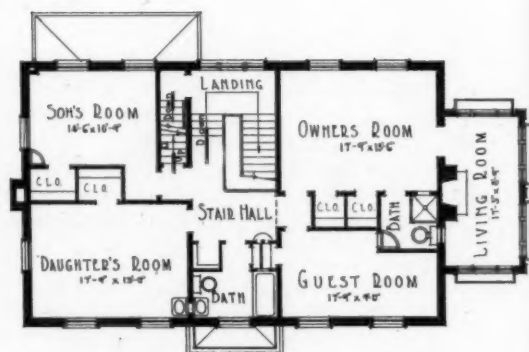
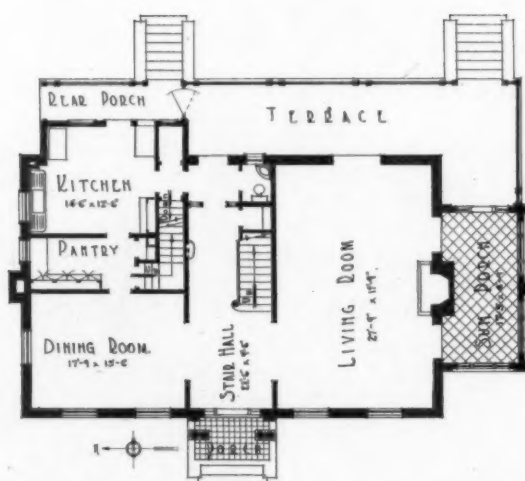


GRAND RECEPTION ROOM

Original Working Drawing

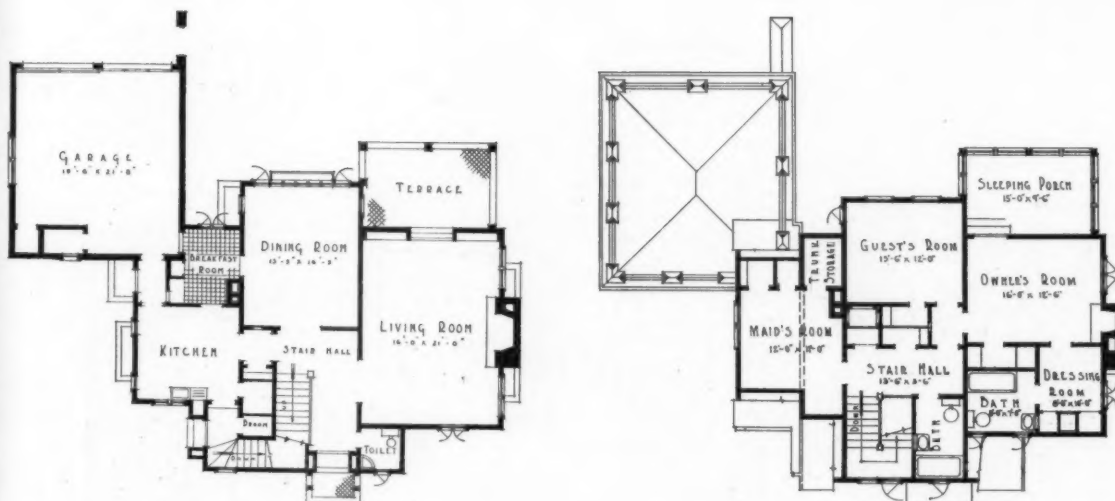
two plans of this room. Both are exactly the same size and show the same treatment, yet the revised plan seems a much larger room. It's a question of the correct scale of the indication. It is also interesting to note that in the actual building the poché is heavier than in the competition drawing. This usually happens in my experience, chiefly, I

the program seemed written around the Scottish Rite Temple in Washington. I did not want to pay another tribute to King Mausolus; and besides, a square building with an order on a basement has become generally pre-empted by the Masons, and has become a type for the order. Not being able to use a square, I chose a circle, and that's that.



HOUSE OF HARRY A. DOCKUM, WICHITA, KANSAS

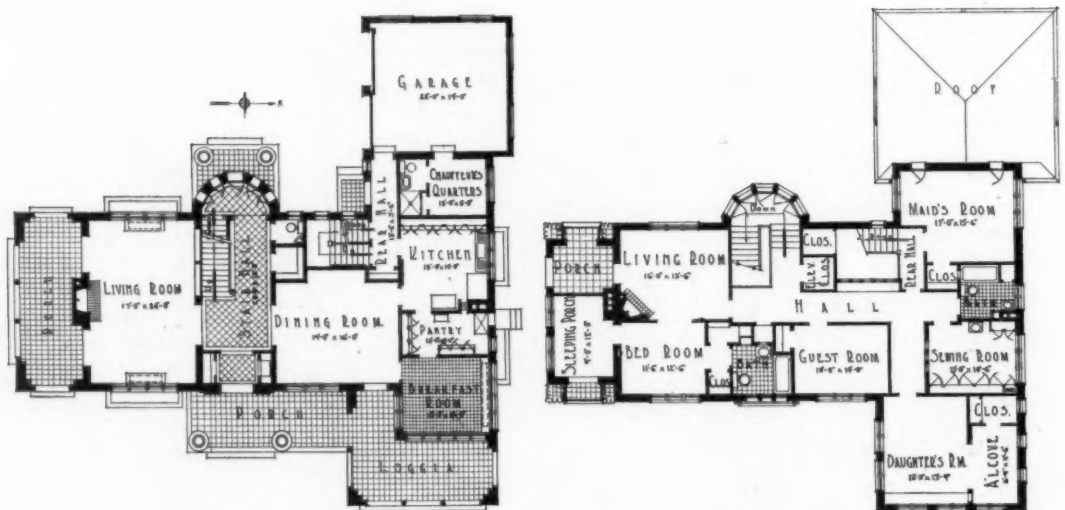
LORENTZ SCHMIDT & CO., ARCHITECTS



HOUSE OF JEROME HARRINGTON, WICHITA, KANSAS

LORENTZ SCHMIDT & CO., ARCHITECTS





HOUSE OF W. O. VAN ARSDALE, WICHITA, KANSAS

LORENTZ SCHMIDT & CO., ARCHITECTS.



HOUSE OF WILL G. PRICE, WICHITA, KANSAS

LORENTZ SCHMIDT & CO., ARCHITECTS

EDITORIAL COMMENT

ZONING REGULATIONS, designating certain sections of Manhattan Island as restricted to specific types of buildings, have produced excellent results.

The Park and Madison Avenues sections, North of Forty-second Street, are growing logically and with a fine regard for good architectural development. In the Greenwich Village section, restricted to dwellings, there is much activity. The old New Yorker experiences many twinges of regret when he marks the passing of some landmark and its replacement by a modern structure. The saunterer about Greenwich Village, not that part affected by "near-artists" and those objectionable elements that have tarnished the good repute of old Greenwich, will see many things to make him thoughtful.

North Washington Square, famed for its rows of stately houses, the best examples in New York of the early Greek revival, has stood, until recently, unchanged. When it was announced that the Rhinelander Estate intended to convert four of these houses into apartments, it was believed that these changes marked the passing of a fine neighborhood. But, fortunately, both owner and architect were in thorough sympathy with tradition. The conversion has been achieved in a splendid way. Not only have the fine scale and general aspect of these houses been retained, but some small additions along the Fifth Avenue front splendidly supplement the original buildings.

Here is something heartily to be commended. An object lesson is presented to owners of other property on Washington Square. The result of these changes, we are advised, has been a largely enhanced income from the property. In fact, the apartments could have been rented many times over.

* * *

WITHIN TWO MINUTES' WALK of the Rhinelander improvement is, or was, "Honeymoon Row," a group of four houses that were examples of the best architectural expression of the same period as the Rhinelander houses. Just how these fine old houses got the name of Honeymoon Row, we do not know. They were representative in their well proportioned facades and in the refinement of their detail of a class of house that marked the homes of well-to-do New Yorkers half a century ago. These have been razed and a towering apartment house of the all too prevalent speculative type now occupies the site. An opportunity was afforded to introduce into the design of the lower stories of the new building some features reminiscent of Honeymoon Row. Nothing of the sort was done. The usual standardization of brick and stone marks the entire building. Where landmarks are razed, as in this instance, a tablet

might be introduced on the ground level that would make a permanent note of an interesting fact.

* * *

NEARBY ON FIFTH AVENUE there towers another skyscraping apartment that dwarfs everything in its neighborhood, particularly the Church of the Ascension, where John La Farge's fine painting is placed. This church is architecturally one of the best Gothic structures in New York. The lower stories of the apartment house, of white marble and brick, present a glaring and unpleasant contrast to the church and set up a discordant note in a neighborhood that for years has been one of quiet refinement.

The monotonous standardization of material and design is increasingly apparent in the loft buildings and apartment houses now springing up all over Manhattan Island. The "step-back" requirements of the zoning laws are all that redeems these structures from dreary monotony. Most of them are speculative in their origin, with no architects of record. Indifference to the traditions of a neighborhood mars their progress and the utmost of the commonplace characterizes their design.

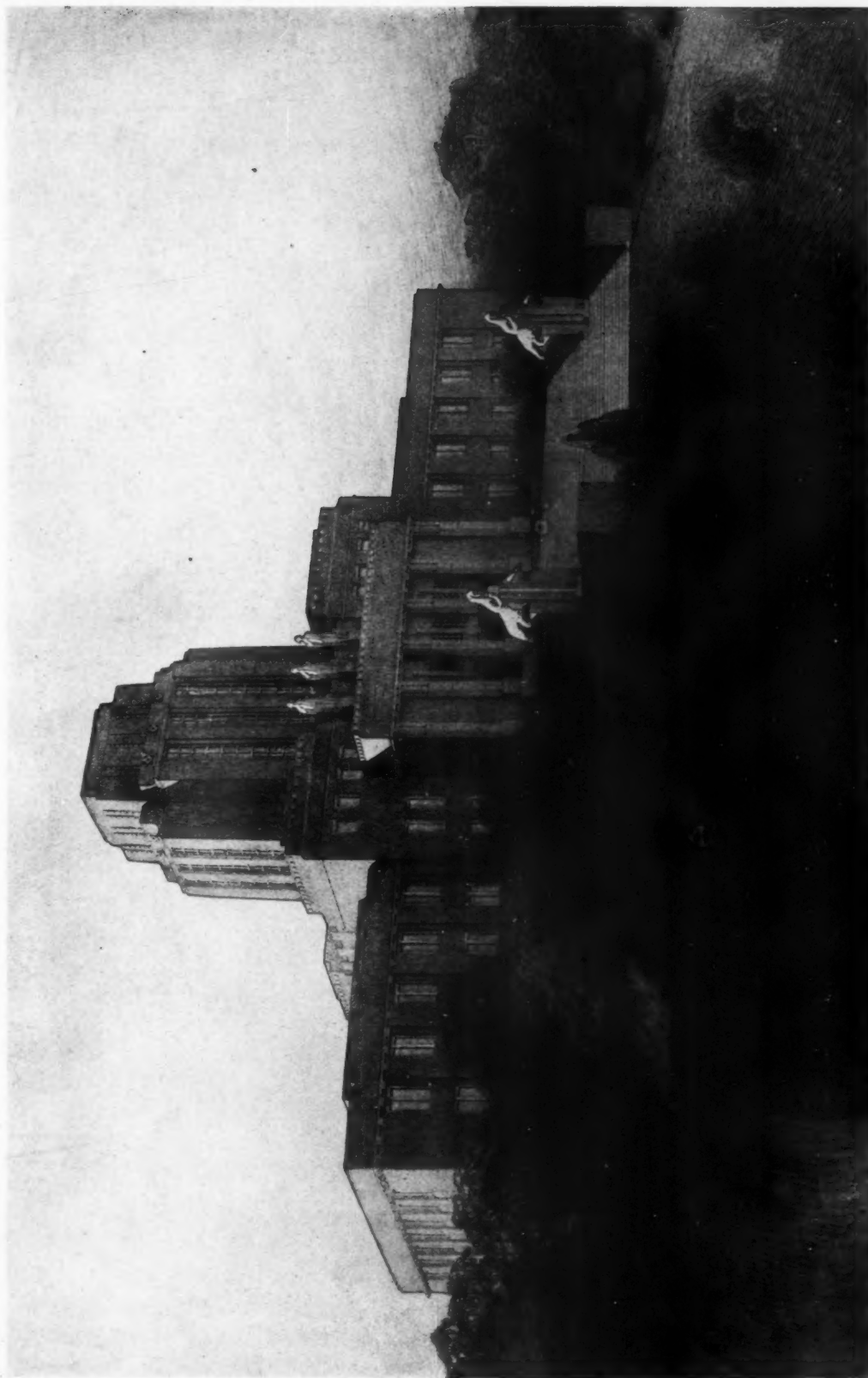
An aroused public sentiment might perhaps lead to better results. An architect would be eager for the opportunities that are now wasted, owing to the speculative greed of owners and builders to whom these sentiments of tradition are as something unknown.

* * *

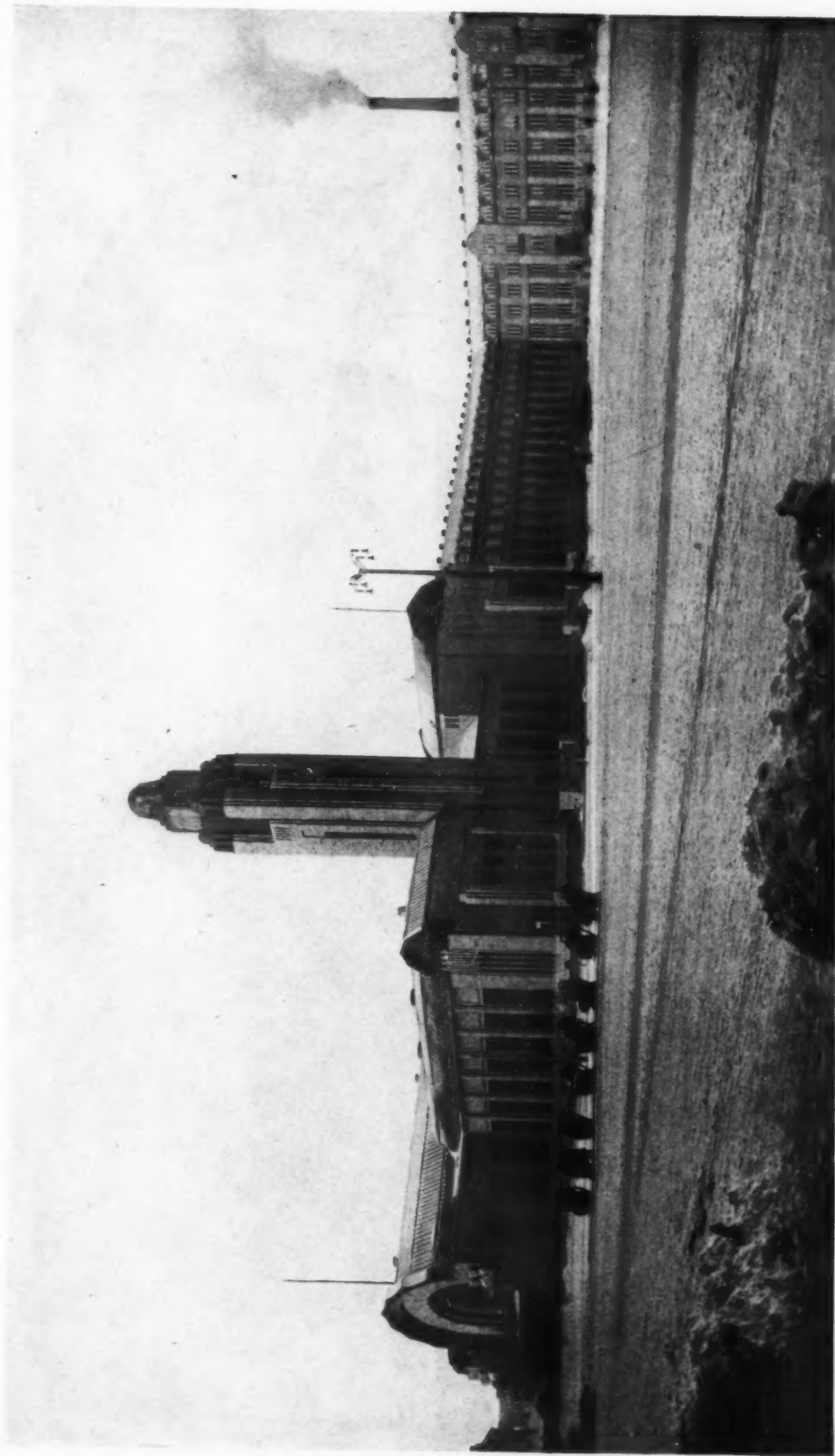
PERHAPS AFTER ALL the long years of delay and uncertainty, we shall eventually have an art center in New York—an area largely dominated by the best artistic element.

Starting as a central point with the Fine Arts Building on Fifty-seventh Street, the present home of The Architectural League and the National Academy, there are now grouped in the neighborhood some of the most important artists and following them, the better class of art dealers. The American Art Association's building is an important new addition to this neighborhood. It is authoritatively known that three of the largest art dealers on Fifth Avenue have sold their properties and acquired new sites on Fifty-seventh Street.

With the forthcoming annual convention of the Institute and the combined exhibition by the Institute Chapters and The Architectural League, a time will have arrived when the question of a new and adequate Fine Arts building may be discussed with a good prospect of tangible results. With the combined influence of the Institute and the League in such propaganda, it would seem reasonably certain that the other societies interested would give ready co-operation.



HOUSE OF PARLIAMENT, HELSINGFORS, FINLAND
ELIEL SAARINEN, ARCHITECT

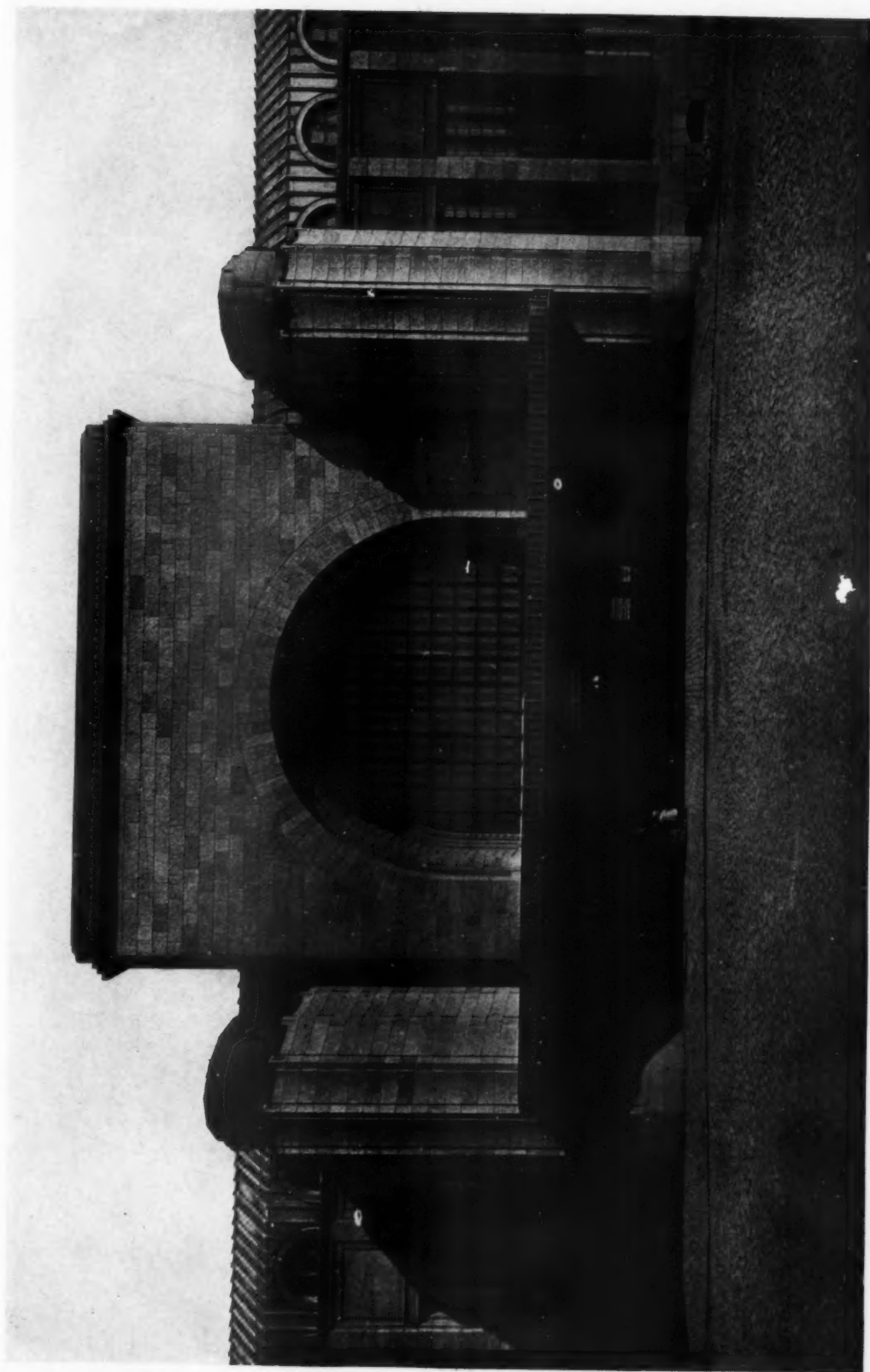


RAILROAD STATION, HELSINGFORS, FINLAND
ELIEL SAARINEN, ARCHITECT



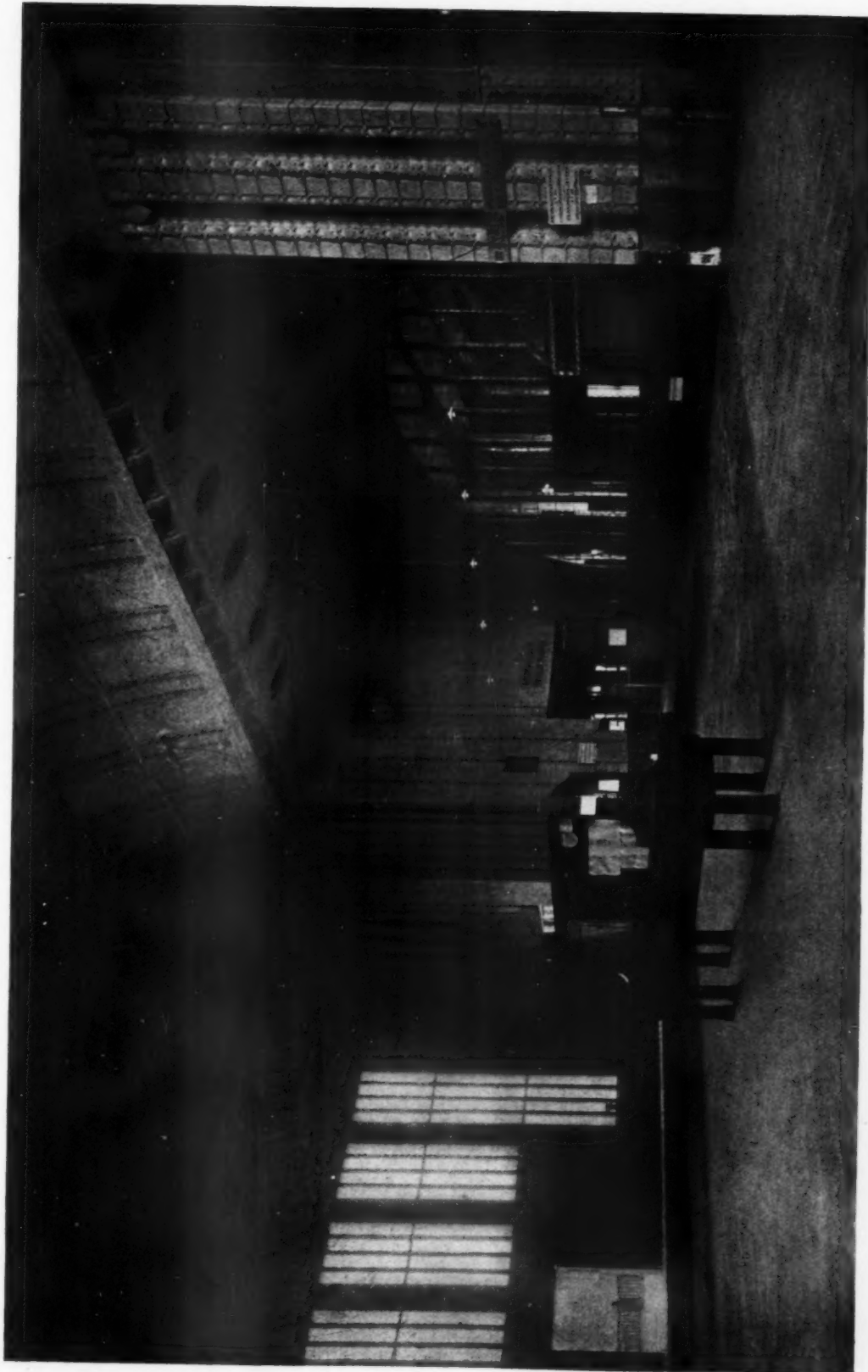
DETAIL, RAILROAD STATION, HELSINGFORS, FINLAND

ELIEL SAARINEN, ARCHITECT

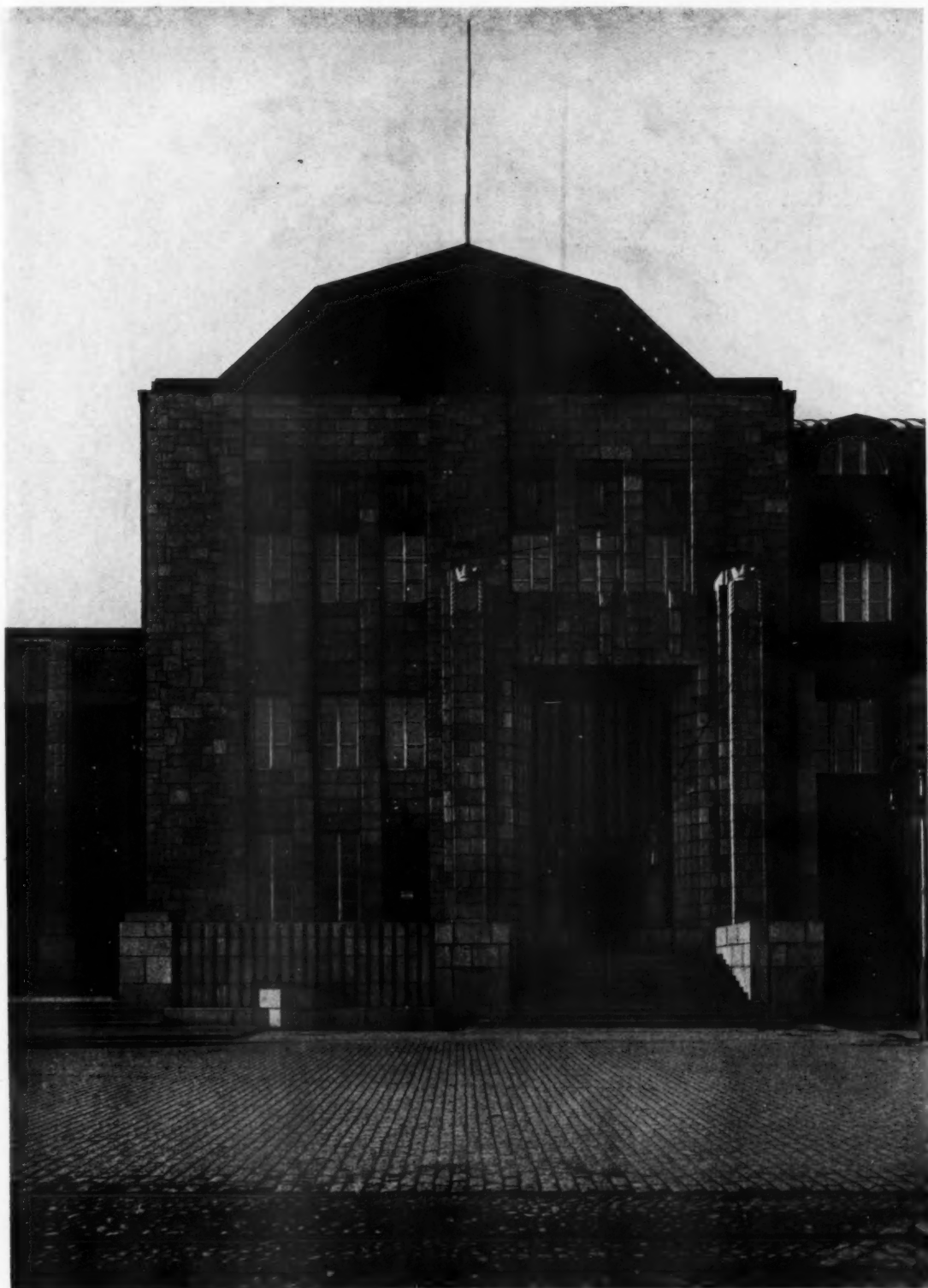


CENTRAL DETAIL, RAILROAD STATION, HELSINGFORS, FINLAND

ELIEL SAARINEN, ARCHITECT



ENTRANCE HALL, RAILROAD STATION, HELSINGFORS, FINLAND
ELIEL SAARINEN, ARCHITECT



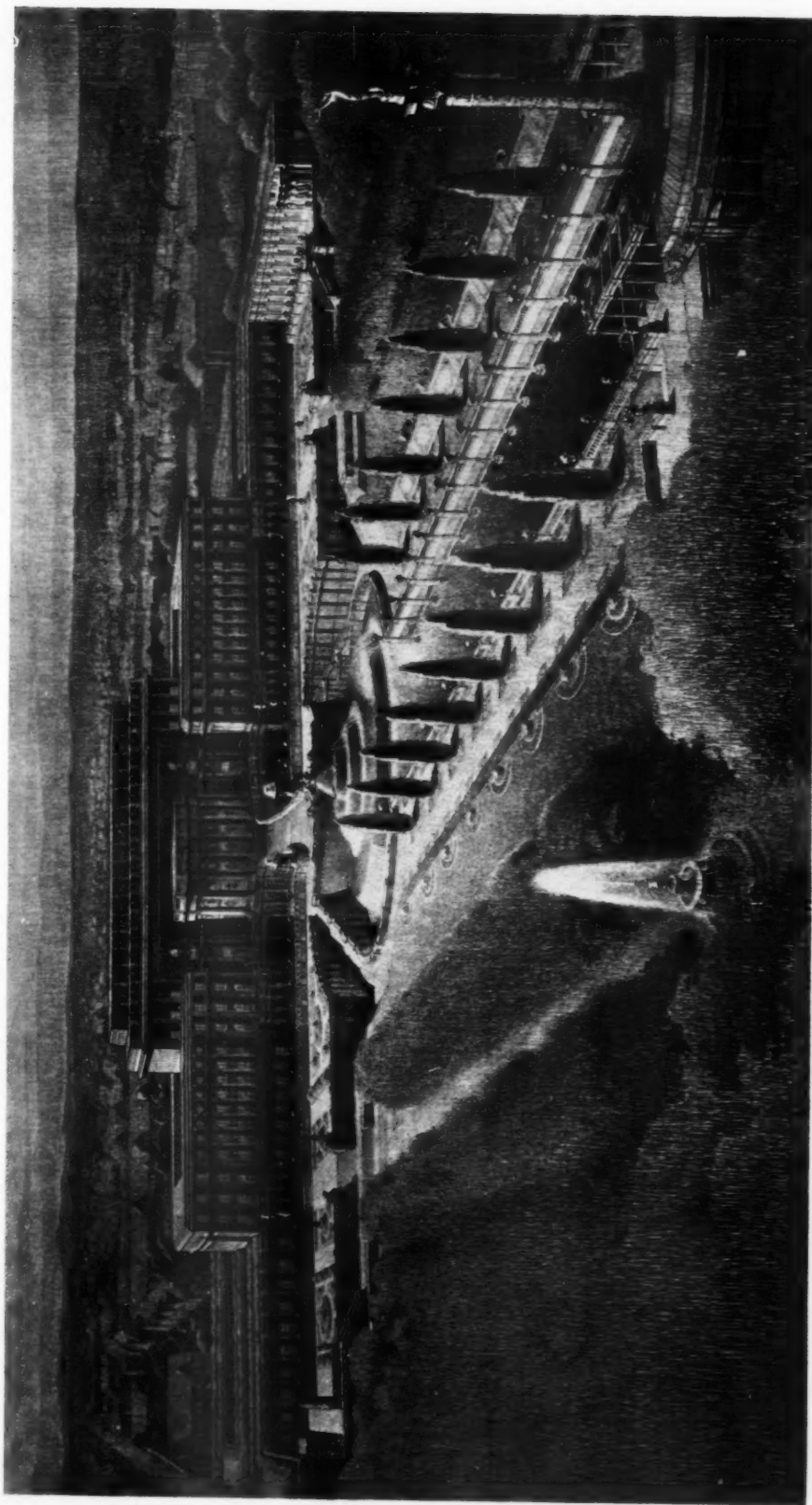
ENTRANCE DETAIL, RAILROAD STATION, HELSINGFORS, FINLAND

ELIEL SAARINEN, ARCHITECT



THE RESTAURANT, RAILROAD STATION, HELSINGFORS, FINLAND

ELIEL SAARINEN, ARCHITECT



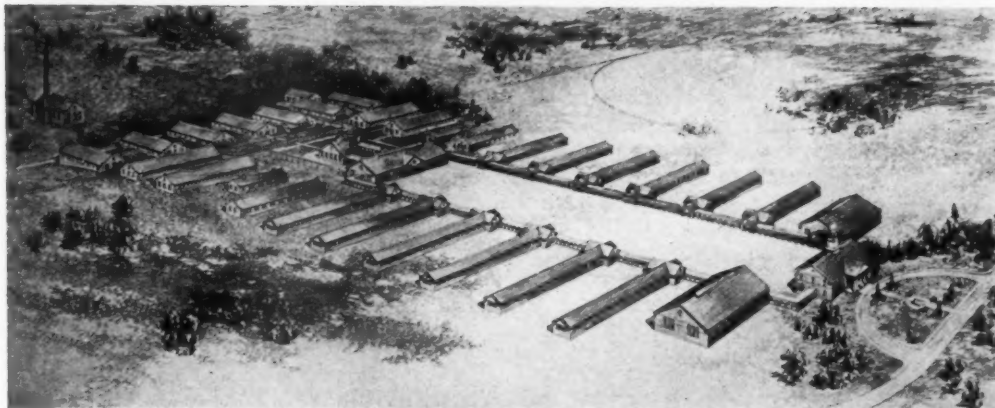
THE PALACE, SOFIA
ELIEL SAARINEN, ARCHITECT

Shops, Storehouse
and Trade Schools

Mess Hall
Kitchen
Bakery

Six Standard
Dormitories

Assembly



Power
House

Four Disciplinary
Dormitories

Six Standard
Dormitories

School

Administration

The PRISON DORMITORY SYSTEM at the DISTRICT of COLUMBIA REFORMATORY, LORTON, VIRGINIA PART I

BY HASTINGS H. HART, LL.D., President of the American Prison Congress of 1922

FOR more than a century the cellular system of prison construction, with a separate cell for each prisoner, has prevailed in American prisons.

During the past twenty years the dormitory system has gradually come into use. At first the dormitory plan was used only for short term prisoners convicted of misdemeanors; but recently it has begun to be used in state prisons for long term prisoners.

The adoption of the dormitory system has been due to a variety of causes:

First, the increased cost of construction. Before the Great War substantial fireproof prisons could be built for \$1,200 to \$2,000 per cell; but plans recently made for the Detroit House of Correction were estimated to cost \$3,000 per bed, the Ohio Penitentiary at least \$5,000 per bed, and the Pennsylvania Penitentiary at Rockview at least \$5,000 per bed. The plans of the New Illinois Penitentiary call for a plant that would cost \$4,000 per prisoner.

The delayed construction in these and other states caused great overcrowding in the old prisons, from which relief has been sought by providing dormitories.

Dormitories are being used to a limited extent by the New York State Prison at Sing Sing, the Indiana State Prison at Michigan City, the Michigan State Prison at Jackson, the Illinois State

Penitentiary at Joliet, and in most of the Southern state prisons.

In the United States Penitentiary at Atlanta and the new Kilby Prison at Montgomery, small dormitory cells for five or six prisoners are in use. Opinions of prison officers vary as to their desirability.

A permanent dormitory plant was built at the Cleveland City Workhouse, about 1910. The men lodge in brick two story buildings in rooms accommodating 12 or 14 men.

Second, Desirability. Some prison officers maintain that for the majority of prisoners dormitories for 50 to 100 men are preferable to single cells. Nearly all prison men agree that separate cellular confinement is necessary for a part of the prisoners, but they differ as to the proportion. The provincial prison at Guelph, Ontario, for 700 prisoners, has 135 single cells, a ratio of about 20 per cent cells and 80 per cent dormitories.

The dormitory system has been used for army camps, lumber camps, construction camps, etc., and it is agreed that prisoners do not need better accommodations than soldiers or free laborers.

Up to the year 1910 the District of Columbia had no place of confinement of prisoners except an ancient and most disreputable jail with no facilities for the care and training of sentenced prisoners.

The District Board of Charities is responsible

for the District prisons, and they resolved upon a radical departure from conventional prison architecture.

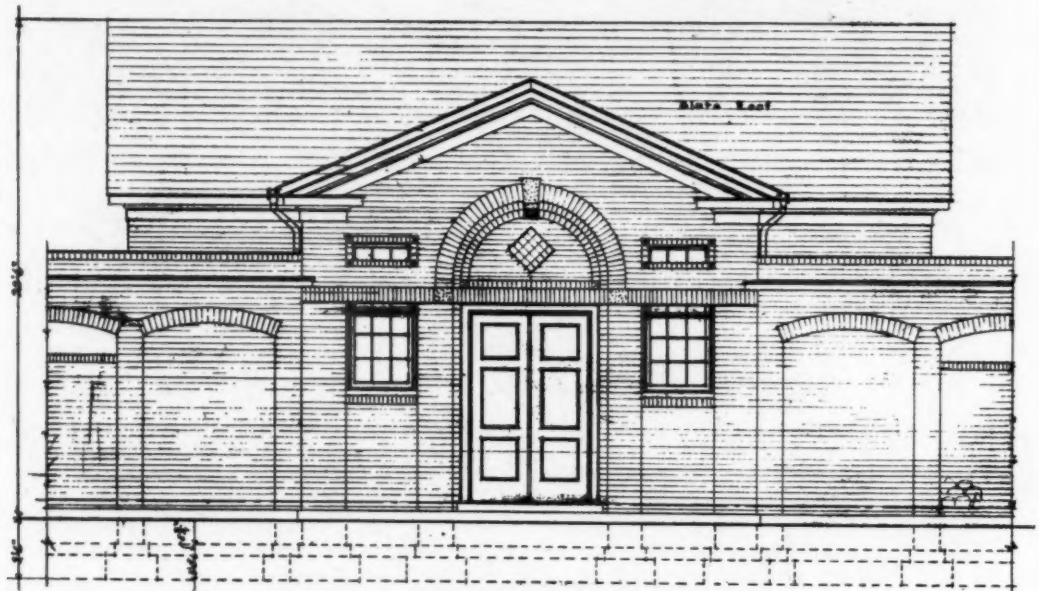
They bought a large well timbered farm at Occoquan, Virginia, on the shores of a tributary of the Potomac. They procured tents wherein, for nearly a year, the prisoners cooked, ate and slept.

They set up a saw mill, cut logs, sawed lumber and built houses for the warden and deputy warden. They erected a one story wooden camp, similar to the camps built for soldiers during the Great War. The camp included one story dormitories, for 100 men each, a big rest room for

tiaries at Leavenworth or Atlanta, where there was little opportunity for reformatory discipline.

The District Board of Charities could command only a little money, but it obtained authority from Congress, in 1920, to buy a farm contiguous to the District Workhouse farm and establish a District Reformatory at Lorton, Virginia.

Lumber was obtained from the Workhouse farm. Temporary wooden buildings similar to those at Occoquan were erected for 200 prisoners, and prisoners belonging to the District were transferred from the United States Penitentiaries at Atlanta and Leavenworth to Lorton.



Standard Dormitory—Front Elevation
Showing Roof of Rest Room and Sections Right and Left of Arcade

leisure hours and holidays, a mess hall with kitchen, an administration building, storehouse and hospital, and a separate department for women, all built of lumber cut, sawed, finished and carpentered by the prisoners under a few citizen foremen.

Around the building a barbed wire fence, 12 feet high, was built, but after a year or two the warden asked permission to take it down as a useless blemish to the landscape.

A deposit of shale was discovered on the farm at Occoquan which proved to be a mine of wealth for it furnishes material for the manufacture of large quantities of an excellent vitreous brick, which is used for sewers in public buildings in the City of Washington and is now being used in constructing the new Reformatory Prison.

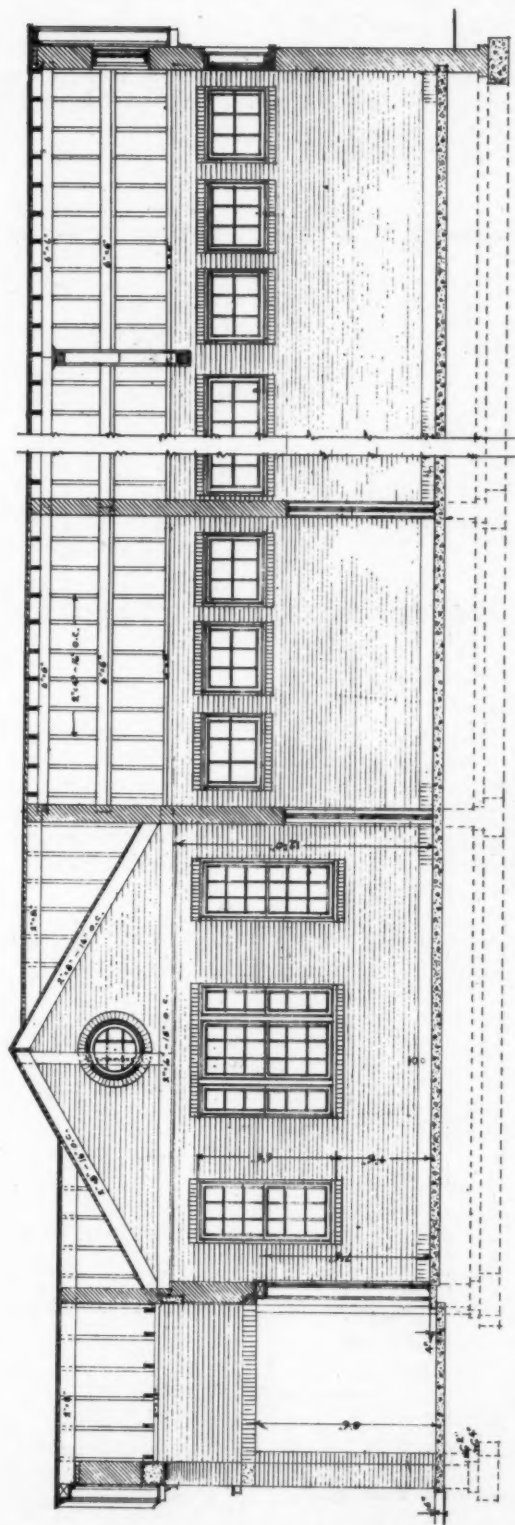
The District had no prison for convicted felons. Young men and older boys convicted of grave crimes were sent to the United States Peniten-

Encouraged by their success in twelve years' experience at Occoquan, the Board of Charities determined to build permanent buildings similar in type to the temporary wooden buildings at Occoquan, but permanent in character, and with smaller building units.

A well drained piece of ground, about 800 by 2,000 feet, was graded by the prisoners, with shovels, picks and wheelbarrows as their only tools, as a campus for the present building.

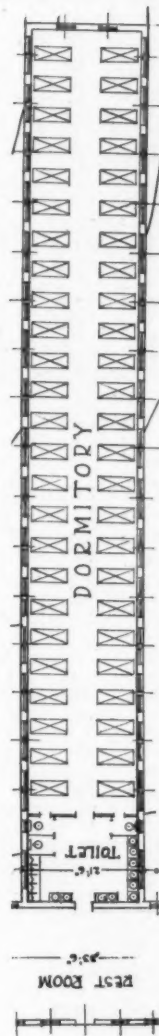
The plans contemplate a group of 28 buildings, as follows: one administration building; one school building; one mess hall; one kitchen, bakery and storeroom; one storehouse; one shop and trade school; one shop and cold storage; one shop and garage; 12 standard dormitories; two disciplinary dormitories with cells; three disciplinary dormitories without cells; one power house; one cow stable; one horse barn.

A quadrangular park space was laid out in the



SECTION AB

Standard Dormitory—Side Elevation
Showing Arcade, Rest Room and Sections of Sleeping Room

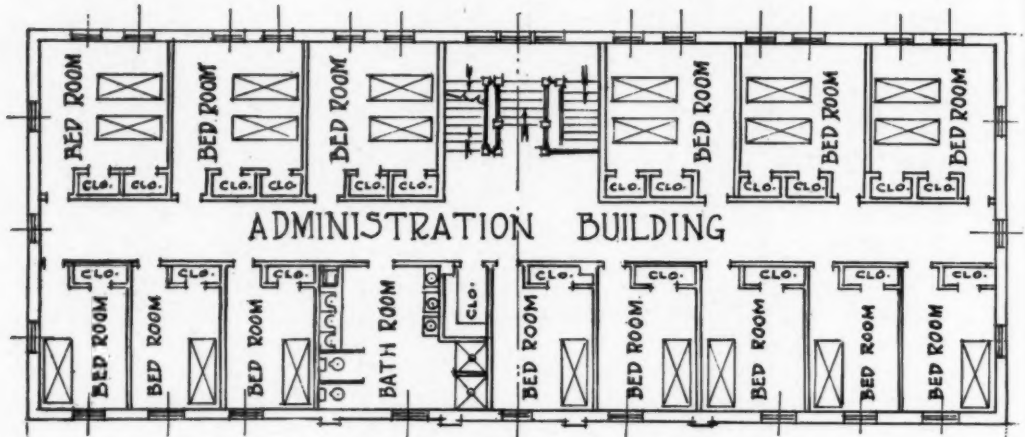


Standard Dormitory for Fifty Men, With Rest Room, Baths, and Toilets
Windows 3 x 4 ft., spaced 15 to 24"

center of the ground, 260 by 350 feet, which is surrounded by a covered arcade, and the buildings are set at right angles with the arcade: the administration building in front, flanked on one side by a school building and on the other by an assembly hall. On each side of the arcade are set six dormitory buildings, each 180 feet long. On the

from 60 to 80 men each. These buildings stand parallel with the 12 dormitories above mentioned. At the farther end of the campus are five buildings used as shops, storehouses, and garage. At the extreme end of the campus is located the power plant.

The power plant stands on the edge of a ravine



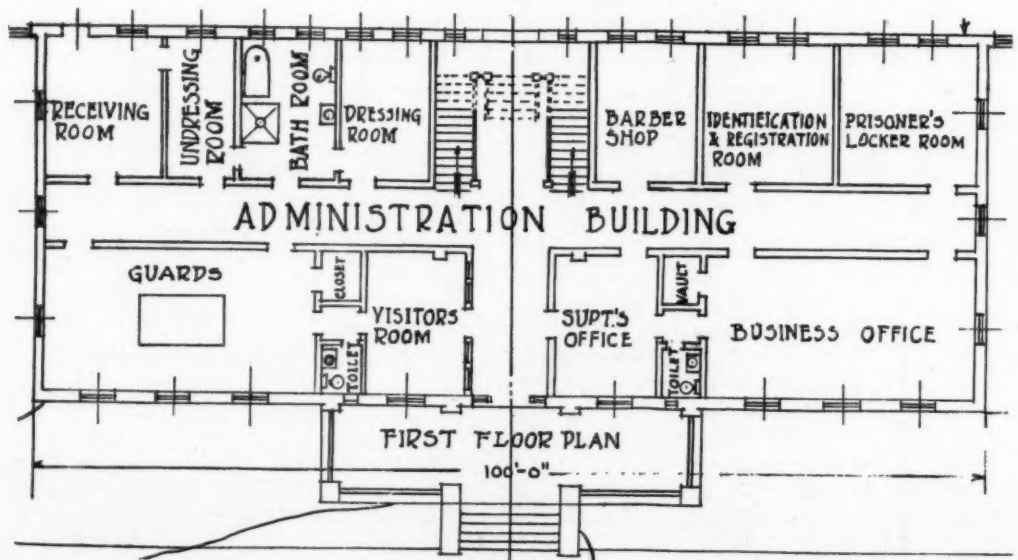
Second Floor

fourth side of the arcade is the mess hall, with kitchen, bakery and storeroom in the rear. On each side of the mess hall is a building to serve as a wash room for prisoners before going to meals. Still farther are found on each side of the campus two "disciplinary dormitories," to accommodate

which affords drainage. See illustration, page 289.

Two tunnels from the power plant extend under the arcade and carry sewage, water, steam and electric wiring to the end of each one of the buildings, with the least possible amount of excavation.

(To be continued)



Administration Building
(The Only Two Story Building)

REVIEW of RECENT ARCHITECTURAL MAGAZINES

BY EGERTON SWARTWOUT, F.A.I.A.

IN the July number of one of our American architectural magazines, the name of which is not given for reasons that will afterwards appear, there is featured an article on Eliel Saarinen and his work in which is taken strong exception to certain rather facetious comments that have been published. The author gives no names; he only calls them; but as he does us

the honor of quoting verbatim from an article which has appeared in these columns he seems rather in the position of the poker playing gentleman in a song of the late Mr. Williams, who having apparently well grounded suspicions of the methods employed by a one-eyed man who was sitting in, announced that he would name no names but if the delinquent did it again he'd put out his other eye. Now, if names are taboo, what better mode of reference could be employed than that adopted by the author himself when he says "sought to solve it in a spirit of simplicity and freedom and strength and beauty, which we untrammelled ones here do not associate with the modern architecture of any other peoples." Adopting, then, this nomenclature, which is at once free and novel and much less cumbersome than the mere repetition of a descriptive phrase, let us say that in our opinion the following statement is going it pretty strong even for an untrammelled one: "Some of us, fairly conservative and of fairly well balanced minds, too, would be willing to have wiped off the earth all the domed State Houses, all the Roman Railway Stations and Greek Temple Banks if such happy loss

would help us to design such failures or non-successes as the Helsingfors Railway Station and the proposed Finnish Parliament House." Some of the damned, or rather, domed State Houses might be wiped off, we cheerfully admit, not necessarily because they are domed but because they are not otherwise good, and some of the Railway Stations might be eliminated not because they have columns but because they have no architectural merit; but we could not ourselves be perfectly happy if we were compelled to take the 5:38 every evening from Helsingfors; we would prefer not to commute at all, unless we could do it by airship. We are foolishly trammelled enough to prefer the Pennsylvania Station or the one in Washington, and we have seen banks that were good, even if they had columns, and we have seen many domes that were beautiful and few that were absolutely poor. We have often wondered, generally, we concede, in an extreme state of trammelment, just why columns and domes should be anathema to all advanced and right-minded people. There is nothing particularly

From "The Architects' Journal," London



Bush House, London
Helmie & Corbett, Architects

Although against the Bush Building St. Mary-le-Strand is only shoulder high, it has not been dwarfed. Rather does it serve as a foil to the newcomer's greater height

banal about a column *per se*. It is always interesting, occasionally beautiful, and often useful. There is certainly an element of dignity in a fine colonnade that is unequalled by any other architectural expression. There is a splendid monotony in their very repetition, as someone said some time or another. At any rate so it seems in architectural history. And a dome is certainly the most dignified and monumental expression that has ever been

conceived for the covering of an unobstructed area. The trouble is not that we have domes, but that we have not domes enough. Many years ago when the office of McKim, Mead and White was at 150 Fifth Avenue, there was a pleasant little vista

From "The Architects' Journal," London



Bush House, London, view looking South
Helmle & Corbett, Architects

from one of the rear windows showing the river framed between two picturesquely massed but otherwise objectionable factories, and on the opposite shore there stood out against the evening sky the dome of a church with two smaller cupolas around it. It was rather fine, that view; with the grimy industrial foreground, the silver river and the dome of the church on the height above; a sort of perpetual allegory, as it were, and a view at which Mr. McKim never tired of looking. In the office we always wondered what that church was and how it really looked close up, and one day we saw it. It was not really very good, rather poor in fact; there was nothing to it but the dome, and all there was to the dome was the fact that it was a dome, its general outline; and so in retrospect, realizing what the vision of that dome meant to an office which was certainly not sentimental, and was even trammelled, if you will, there was born the wish that that vista could be multiplied, that other offices could have a similar view, and see other

domes, and that, by the inspiration of the idea of it all, architecture would be better, and that people in general would realize that there was something greater than commercialism and grimy ugliness.

But reverting to the article in question, there is one paragraph, the exact meaning of which is difficult to discover. This is the paragraph: "In the correspondence files of a noted architect, one widely admired for the strength and charm of his design, may be found a note containing a sentence to this effect: 'No, I am not competing; but if I were there is but one man whom I should really fear, and that is Eliel Saarinen, of Helsingfors, Finland.' I did not mean by that that had I entered, I would have won the second prize, Saarinen winning the first; I did not believe that either of us could have 'won out' in that competition; but I did mean that I expected from Saarinen a logical, I repeat, a 'logical' expression of the Skyscraper aesthetically couched in bold, free, original and unconventional terms; that, from what I had come to know of him through reproductions of his work, is what I felt I had a right to expect." Now, not being untrammelled we can only read in it what it says, and there comes back a rather vague memory of a Professor of Psychology in New Haven that our class familiarly knew as Cousin

From "The Architectural Forum"

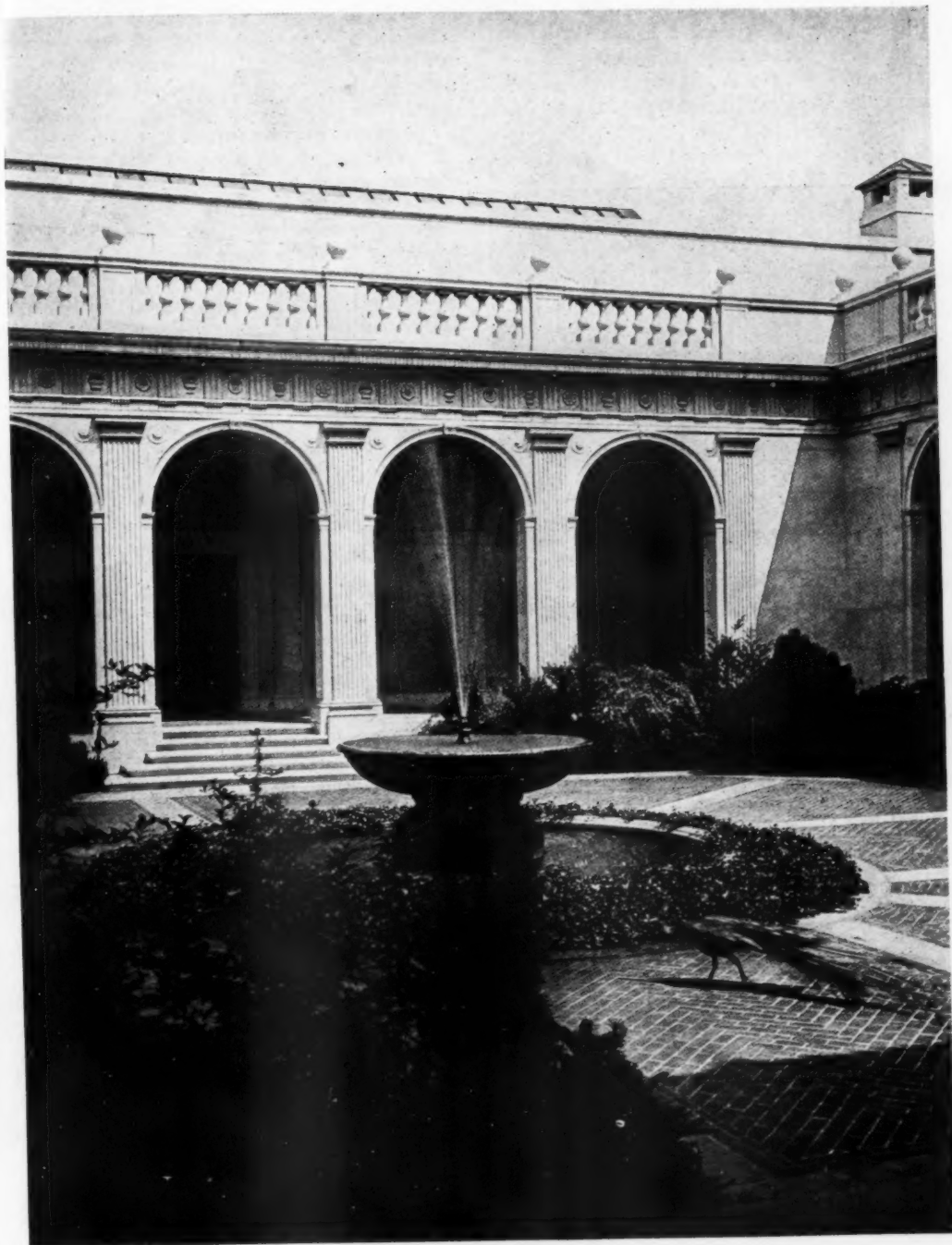


Street elevation of Vanderhorst Row, Charleston, S. C.
A prototype of the modern apartment house

George, and in one of Cousin George's lectures he said, in giving a homely illustration of a deep psychological point, "One day an eminent psychologist was walking down Chapel Street and meeting a little girl, I said to her" etc.

The Architects' Journal of London has for some little time been publishing a page of genial and general comment entitled "Joking Apart," written by a distinguished London architect under the signature of Karshish. These monthly causeries, as the page-long articles are called, and here let us digress a moment to express our wonder and our

From "Architecture"



View in Court, Freer Gallery of Art, Washington, D. C.
Charles A. Platt, Architect

admiration for anyone who can write just a complete pageful every month on so many and diverse subjects; Miss Peacher could do it, of course, but then these are real articles and Karshish is a real man; these causeries, they really ought to be longer or published oftener anyway, these causeries are quite the most pertinent, amusing and well

From "The Architectural Forum"



Night View, Entrance to Illinois Life Insurance Co. Building, Chicago, Ill.
Holabird & Roche, Architects

written articles that appear in the English magazines, and the English magazines do much better in their printed matter than do our own. Mr. Karshish, which isn't his name at all, and which sounds as if he were an Armenian, or a Turk or an Oriental or possibly what the newspapers here call an alien, Mr. Karshish is really an Englishman, who, like many other Englishmen and Americans too, is deeply concerned at the increasing tide of commercialism which threatens to submerge in these modern times our taste, our architecture and our art, and having the courage of his convictions he is employing against those responsible for the commercial tide that most effective of all weapons, ridicule. In a letter, which we hope he will pardon the questionable taste of quoting without his permission, he says, referring to his articles "We Architects here have a way of continually voicing the same undigested ideas like a whole company with hiccoughs, and the hiccough of the professor in marked prominence. Commercial precepts are being spoon-fed to us by ignorant atrocities

such as . . . and . . . who have no qualifications for leadership, and we all swallow them down and hiccough our contentment. A dose of ridicule and home truths is an efficient emetic, and my brethren exhibit gratitude for the deliverance." It is to be regretted that these articles of his cannot be reproduced here entire, but a few quotations will show the character of them. For example, in speaking of a subject which has been uppermost among architectural topics for some time past in England, he says: "My fear is that when the subject of this writing reveals itself it will be found to be repulsive; but I shrink from adopting the artifice of authors that write those entrancing anecdotes of the man who at last found redemption in Bilger's Pills. I cannot bring myself to disguise my purpose until the reader's attention is engaged and then fling the unwelcome douche into his face without so much as a warning cry of 'heads below.' With this confession I will strike into the heart of the matter by offering the opinion that when poli-

From "The Architectural Record"



Bellport Memorial Library, Bellport, L. I., N. Y.
Aymar Embury, II, Architect

tics comes in at the door, good sense, sincerity, and enthusiasm too often fly out of the window."—"The activities of the R. I. B. A. in kicking about the cause of registration have, of recent years, resembled the game of football popular in Ireland and known as 'Gaelic,' in which there are no goal posts and no rules of play; the performers

finding zest in propelling the ball in any direction, as opportunity serves.

"If I am wrong I must hide a diminished head, but I am unaware that, amid all the hurry-burly of conflict, the one reason that makes registration an overwhelming necessity has ever been brought forward, or that the chief danger attendant on unification has ever been acknowledged. No one, so far as I know, has pointed out that if architects do not organize themselves as a closed profession the commercial man will button them up in his pocket as he has, in great part, already buttoned up craftsmen, authors, journalists, etchers, and others who can reach their public only through his agency; and I have never observed that anyone has called attention to the fact that a unified Institute will no longer represent the ideals and ambitions of those who effected its unification, but something very different and far inferior." And again, referring to the gentle art of Town Planning he says: "The recent publication of yet another book on town planning will lead some of us to hope that we shall some day see a town that has been planned. We are, it is true, rejoiced by the sight of garden villages, so called; but so far as I am aware the only towns in the Empire that have been duly planned and committed with aforethought are Letchworth and Khartoum. Of Letchworth, speaking for myself, I can only say that among its various merits and conveniences—including the conveniences of its 'Drunkards' Train,' which is frail humanity's retort on local prohibition—I have never, as a visitor, been able to perceive any more meritorious plan than might be attributed to an active spider; and as the general scheme of Khartoum was initiated by Lord Kitchener and is 'governed by military considerations,' so that all other amenities of communal life are subordinated to facilities for shooting down the populace with the least expenditure of bullets, the plan of the town, although ingenious, strikes me as exotic and profane. The main accepted governing principles of the art of town planning are not only wrong but utterly fatuous. These principles comprise symmetry, geometrical setting out, comprehensive unity, convergence of thoroughfares upon important buildings, and so forth; but in obedience to these principles the town plan has become, first and foremost, a thing to be esteemed for the attractiveness of the pattern the town would exhibit to a bird flying overhead. The delectation of passengers in its streets, and not of passengers in the air above it, is, however, the aim of the planner of towns. What, then, is the effect upon the town dweller of the symmetry, geometrical ingenuity and convergent thoroughfares provided for him with such stress of thought and invention? The answer is: a sense of being borne down by the unutterable, weary monotony of his surroundings.

"As three principles of town planning have been

cited, so may three causes for the dreariness resulting from them be expounded. The gratification we receive from the neat orderliness, balance of parts, and emphasis of proportion which attends on symmetry can only be felt when symmetry manifests itself as a whole. If I view a piazza and then, after walking three-quarters of a mile, come upon another piazza exactly similar, I get no impression of symmetry, or order, or balance, but merely one of redundancy and boredom. If I continue on my way under the general impression that I am going forward, and come upon another piazza like the last, and then even to a fourth or a fifth and sixth, my boredom becomes colored with confusion of mind; I am like a man in a trap. If I still advance and find by noticing the position of the sun that instead of going forward I am retracing my steps, and am then finally brought to my senses by the shock of finding myself back at the point from which I started—why then, I shall feel baulked and exasperated, and shall have experienced the delights offered to the stranger by a plan which would be accepted as 'ideal' and worthy of distinction by the town planning fraternity—as witness, for instance, Scamozzi's ideal plan or Mr. Sulman's proposals for Canberra. In nearly all town plans you will find such features as twin avenues each with eight-and-forty pairs of lime trees, the poor bemused planner conceiving he is obtaining a grand effect of balance and symmetry although his two avenues may be a mile apart." And in speaking of some of the more blatant phases of commercialism he says: "Much might be said in praise of the enterprise and inventiveness with which the commercial man not only meets every ambition of luxury and display, but anticipates the wildest dreams of the public. Beautiful diamonds, and pearls, indistinguishable from the products of the volcano and the oyster; silks and satins that surpass the spinings from the cocoon, and furs of the rarest descriptions duly guaranteed to the full limits allowed by law, are placed within the reach of nearly all of us. Not only, too, does the commercial man enable us to make custards and omelets without breaking eggs, but he waits upon our sentiments and whims with a devoted attentiveness. Knowing that there is a demand for new-laid eggs which cannot readily be met by this country, he imports them from Denmark and elsewhere; and he meets the unreasoned prejudice with which Egyptian and Chinese eggs are viewed by mixing them with the 'new-laid eggs' so that they may be eaten with relish or excused as accidents.—There is much that is puzzling in these circumstances, and much, no doubt, upon which the commercial man could enlighten us. For instance, I can no more understand the difference between a gold watch and a genuine gold watch; leather and real leather; English cherries and *bona fide* English cherries, than I can understand the

difference between a lighthouse and a genuine lighthouse; a plough and a real plough, and a dog and a *bona fide* dog. In this I have to admit that the commercial man has the advantage of me."

Now, that Town Planning article is to us particularly attractive for two reasons, first because of its perfect description of the general futility of a planned city, and second because of the reference to that artificial symmetry which is not symmetry at all. In these columns and elsewhere we have expressed an, at present, unalterable opinion that

From "Moderne Bauformen"



A pathetic interior, showing under what dreadful conditions the modern German has to live

no town or city or even group of houses could be successfully designed or built by the same man at the same time; that no matter how great a designer that man might be, his town or his city or his group of houses would prove an extremely tiresome and unpleasant place in which to live, and we would be tempted to extend this further and say that the adoption of a carefully laid out and more or less symmetrical plan of a great group of public buildings or of a university, for example, is not always the best method of procedure. This sounds a bit radical, even untrammelled, but there is more than a little of truth in it. There are a great many plans that make beautiful patterns on paper and that would be extremely interesting in an aerial photograph, that are entirely confused and unintelligible on the ground. There is sometimes a

tendency to do a building of curious shape merely for the sake of balancing it with a similarly shaped building on the other side of a central motive. The pattern on the plot plan is good and the buildings and the voids seem well balanced, but the building when built is perhaps five hundred feet away from its counterpart and the symmetry which was pleasant on the plot plan is deplorably absent in reality. The bewildered visitor can only wonder what ailed the architect when he designed it. Of course it will be at once advanced that this is merely paper architecture and an immature effort, but unfortunately such things are done by very mature gentlemen, very mature indeed. It will also be said that if a model were made, such things would not be, but a model after all is only a model; it's better than a plot plan, but the eye comprehends in a model a hundred or a thousand times more than it does on the site. A model is a very useful but withal a very dangerous thing. It must not be imagined from this that we are advocating the leaving of everything to chance in the layout of a great monumental group. Quite the contrary. There must be some scheme, some great idea underlying it all, but we do feel that the gradual development of that idea, perhaps even by different hands, with the non-vital and necessary changes that inevitably occur, is generally productive of a really finer result than would be obtained if all the buildings were built at one time by the same man. And the false symmetry, which is not symmetry at all, can be found not only in a group of buildings but in one building or in one room of one building. Take, for example, the Petit Palais in Paris. It is on a very peculiarly shaped piece of ground and from the shape of the lot and from the necessity of the arrangement of axes to agree with the building opposite, the architect has evolved a most ingenious plan, an extremely clever plan, on paper, but in reality it is quite impossible for anyone not already familiar with the plan to imagine what the shape of the building really is. It is so irregular in its symmetry that there is no symmetry apparent, and the same thing can appear in a room. There was a room in an old New York hotel, a long narrow room, that was so confused and irregular that its shape was apparently governed solely by the constructional difficulties that beset the architect, but one day while waiting for some one we decided to draw a plan of it and to our great surprise we found it was perfectly symmetrical, every little foolish break in one corner was meticulously repeated in another corner sixty odd feet away, and there was a symmetrical segmental curve on one end of the room, and on paper the pattern of the plan was extremely good. It is trite, of course, to say that for symmetry to be effective the symmetrical objects must be of such a size or so arranged that the symmetrical relation is apparent at one glance of the eye. The room, for example,

was so long and narrow that the eye could not take in both corners at once, therefore the real symmetry of the plan became a meaningless jumble when seen as two separate things. All this is childishly apparent and quite elementary, but it is strange how continually people lose sight of it.

In *The Architectural Forum* for August is an article by Howell Taylor on the Organization in the Architect's Office, which is filled with charts showing the office manager shaped like a 45 degree triangle in the center with little pipe lines running off to the chief designer, who is rectangular, and the statistical expert, and the mechanical expert and other experts, and there is another pipe line to the service chief and to the chief draftsman and to all draftsmen and to some mysterious parallelogram marked liaison assistant, and way up in one corner, quite hidden behind the publicity depart-

ment are the principals of the firm; all very businesslike and efficient, no doubt. Commercial, yes, but this is a commercial age. At least, so some blatantly insist and many accept. Personally we don't think it half as commercial really as it seems to be. We believe that there is a general appreciation that architecture is one of the Fine Arts and not a business, and we believe that that appreciation is growing, and we believe that in course of time there will be a demand that the architect become an architect in fact instead of in name, and that he do his own work himself, and that such things as chief designers and office managers and liaison assistants will have no more place in an architect's office than they have in a sculptor's or an artist's studio. If an architect can't do his own designing and his own thinking he should give up all pretense of being a member of a profession and go frankly into business where he belongs.



Kappa Kappa Gamma Sorority House, University of Illinois
Ralph Milman, Architect

DEPARTMENT of ECONOMICS

Economic Factors Which Underlie Construction Activity—Prepared for THE AMERICAN ARCHITECT by the American Chamber of Economics, Incorporated*

UNDERLYING economic trends, which have for so long dominated the building and construction situation, continue to exercise their supremacy. The volume of new construction for the past two months has been noticeably declining. Costs are still holding firm, although there has been of late some fractional yielding. Architects speak of a slightly heavier volume of business on the boards, and of still more "in the air," but conservative opinion is inclined toward the feeling that most of these jobs will rest in their present state of abeyance until next Spring. The trend of contemplated projects published in the Dodge reports, however, suggests that in the near future the usual slight autumnal advance in the value and number of contracts awarded may be expected.

The decline in the volume of building and construction in July was heavier by two per cent than the thirteen per cent drop reported in June. This recession has carried the July volume 21 per cent below July, 1922, and has cut down the total value of contracts awarded for the past seven months until they are but three per cent ahead of the corresponding period last year. It is reasonable to expect August figures to reveal a continuation of the decline in the volume of the industry's new business, as well as the almost imperceptible recession in construction costs.

Seasonal influences at the same time are swinging themselves into a position favorable to an amelioration of the present rate of decline in the

volume of contracts awarded. The Fall activity affects the trade rather late as a rule, but normally there is a slight Autumn advance occurring in either September or October.

Moreover, a distinct building shortage still exists, and conservative opinion has it that several years of better than normal activity will have passed before this deficit is obliterated. Chart 1 affords a graphic picture of this shortage at prob-

ably its greatest magnitude. While 1922 and 1923 have been years of more than normal movement in building and construction, there are no indications that the supply of construction has yet equalled the demand for such facilities.

Furthermore, both 1922 and 1923 have been years of recovery and recuperation in commerce and industry, and in not a few lines moderate expansion of physical assets has been deemed expedient. Consequently, the building industry has not only been faced with an existing deficit of construction, but also with a growing need for greater space accommodation. Furthermore,

school buildings are crowded, clubs are cramped, public buildings once spacious are no longer adequate, business requirements are expanding, and, of course, the shortage of homes still prevails. The greater part of this demand is postponed or potential, rather than acute or pressing in character. Some of it might appear upon the market next month, and, on the other hand, it may not be released for another six or nine months. Its appearance depends chiefly upon the urgency of the need, the trend of costs within the industry, and the return promised upon the investment. As long as the industry has this wholly immeasurable but believedly substantial backlog of demand, architects and builders need have little fear of a pronounced slump in business.

Rents, finally, have undergone little downward

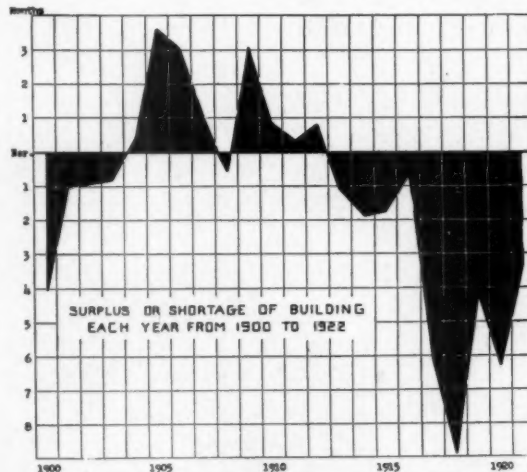


Chart 1

The Building Shortage

(Courtesy of Cleveland Trust Co., Cleveland, Ohio.)

This is a graphic picture of the months of surplus over normal, or shortage under normal, of building in 50 cities during each year from 1900 through 1921. Unfortunately the chart has not been carried farther than 1921, and does not show the inroads these 18 months must have made upon this heavy deficit, which has been hanging below the normal line since 1913.

*The American Chamber of Economics conducts a consultation and educational service for executives, in economic principles. Its Supervising Director is George E. Roberts, Vice President of the National City Bank of New York. Co-operating with the Chamber are James B. Forgan, Chairman of the Board of First National Bank, Chicago; Frank A. Vandervliet, Financier and Economist, New York; Samuel Insull, President, Commonwealth Edison Company, Chicago; Joseph H. Defrees, Ex-President, United States Chamber of Commerce; Henry S. Prichett, President, Carnegie Foundation; Edward J. Nally, Managing Director, International Relations, Radio Corporation of America.

revision, despite the tremendous amount of building that has taken place during the past eighteen months. In many instances they have been raised. The sustained strength of this return upon an investment in new construction and real estate is still of sufficient proportion to attract new capital, particularly when peak costs can be side-stepped or overcome. The speculative builder, on the other hand, occupies a rather uncertain position today. The recession which has taken place within the building industry, the decline in general commodity prices, the price of mortgage money, the reluctance of bankers to accept new construction loans, and the more than seasonal setback in general industry all have rather dimmed the brilliancy of his market. Architects should watch with interest the success with which this type of builder disposes of his property. His success or failure will have a direct bearing upon building activity in 1924.

While it would be a normal movement for the volume of building and construction to decline during August, rise slightly again in either September, October or November to drop once again during the Winter months, there is every reason to believe that the industry will be influenced by the same economic factors now supreme in general business. The stock market, the acknowledged barometer of the business world, has, during the past thirty days, taken a more favorable turn. Speculative enthusiasm, as far as the public is concerned, does not yet exist, although, if prices retain their buoyancy, some outside support to the stock market may be acquired. Industrial sentiment and confidence are more sanguine than they were, but are still conservatively constructive. The volume of production and of manufacture have both exceeded their usual seasonal recessions, but, on the average, they are still at levels higher than normal.

The noticeably stronger movement in commodity markets and the revival of activity in some of the more important basic industries, suggest that the normal Autumn movement will carry business along in a moderately prosperous fashion at levels below the May, 1923, peak but still appreciably above normal. The stock market is forecasting such a trend, and the money market, which has tightened only fractionally, favors such a move-

ment. Every effort will likely be expended to keep prices at levels which will move the merchandise, for the consuming public went on record last Summer as opposed to marked increases. Wages and costs will undoubtedly retain their strength just as long as business remains good, thereby forcing the business man to accept a very narrow margin of profit. Such a state of affairs usually stimulates heavy turnover, and, unless underlying trends change, industry will soon again face a condition of over-production, which will necessitate another period of readjustment similar to the one from which business has just emerged.

Costs, in the building industry, have yielded only stintingly, and the prospect is that they will remain relatively firm as long as the demand for building sustains its present height. The construction cost index, published by the *Engineering News-Record*, has remained substantially unchanged at 222 for the past two months. The decline which has occurred in materials prices, has been offset by the buoyant wages, so the net result has been an unchanged expense figure. The cost of general construction is now 20 per cent higher than one year ago, and 19 per cent under the June, 1920, peak.

From a high of 204 (April, 1923) the Bureau of Labor index of building materials prices has dropped to

190, or seven per cent, but Chart 2 pictures the degree of maladjustment which still exists between the trends of materials prices and quotations in the general markets. Future materials prices are likely to depend upon the demand within the industry, as reflected by the volume of contracts awarded, and the movement displayed by commodity markets generally. The former will probably decline further during August, remain relatively firm for the following three months, then taper off at the close of the year. The general price level has displayed every evidence of stabilization, and very recent indications have suggested a revival of its former strength. No markedly strong movement is expected, however.

Lumber has been the weakest of the principal commodities in the materials list. From an average of \$40.39 in April, according to *The American Contractor*, the average price of lumber has declined to \$34.50. Obviously, the weakness has

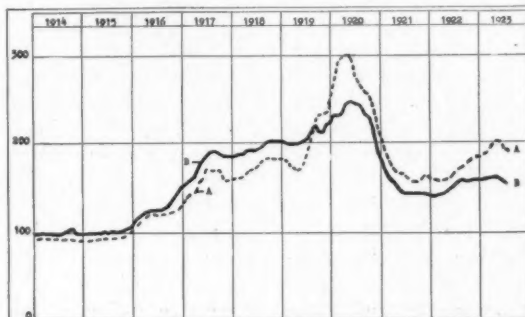


Chart 2
General Prices and Materials Quotations
Bureau of Labor Index—1913 equals 100

Relatively speaking, recent recessions have not brought materials markets in line with general commodity prices. Curve A, the price of building materials, while not now on a common plane with Curve B, general prices, still is moving, and probably will move in sympathy with the unbroken line. Although both curves are shown here as drooping, recent movements in general prices have displayed increasing resistance to further declines

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been due to over-production, a recession in the volume of building, and better shipments. Dealers' stocks are short, and inasmuch as quotations are not firm, buying has been of a day-to-day character. Shipments and orders during August ran slightly ahead of the July average, with shipments about 85 per cent and orders about 80 per cent of production. Resistance to the downward movement of prices has yet to manifest itself.

Structural steel quotations did not change during August, and, with the outlook for steel slightly better, it is hardly possible that there will be an immediate change either one way or the other. The industry has passed through its seasonally slack period, and is now operating at about 87 per cent of capacity. Production has been maintained upon orders received early in the year. *The American Contractor's* average price of cement was fractionally stronger last month moving from \$2.56 to \$2.57. June and July cement production records both fell short of May's unprecedented achievement, but shipments have been well maintained and stocks noticeably reduced. Continued good shipping facilities and the receding volume of building will preclude serious shortage of this commodity. Brick, similarly, has been working lower, but the usual Summer market has been denied the industry this year. Manufacturers are still busy, shipments are rushing, and stocks are not permitted to accumulate. Much of the earlier stringency has been relieved, but no seasonal slump is yet visible. Production and inventories increased during July, but unfilled orders and shipments declined. Prices do not face an immediate and material decline, although they have been moving fractionally easier. The railroad situation is not likely to be a serious factor in materials prices this Winter, for the carriers have been handling an extraordinary volume of traffic with comparative ease, and improved facilities will in all probability take care of heavy Autumn and Winter shipments without serious disturbance to business.

Unlike the materials markets, which have receded somewhat from their high points, the labor situation remains substantially unchanged. The two per cent decline, that employment all over the

United States sustained during July, simply made labor easier to get. Wages have not declined. Almost all of the changes in wage scales that took place in August were advances. It will be some few months before the labor cost of erecting a structure shows much disposition to give ground, and wages will remain high as long as the volume of demand within the industry holds its movement in a plane higher than normal.

Scattered and spasmodic strikes are still prevalent, and are likely to be for some time yet. Declining demand, prevailing high costs, a moderation of industry's movement, and a period of relatively low commodity prices will all act as some restraint upon the radical elements in labor's ranks. If the volume of construction can be held within reasonable limits, and if the trend of the cost of living can be made to exhibit more stable qualities, the labor question will cease to be such a vital issue.

The mortgage money market, like wages, has been progressing in a sort of sidewise fashion. Money has been in good supply and the call for it has been well maintained. Rates still fluctuate between six and seven per cent. Bankers have not mitigated the rigor of their critical scrutiny of new construction loans. Emergency building they countenance, and they are inclined to favor loans upon construction that meets a definite need. Speculative building, on the contrary, meets with a cold reception. The new builder, furthermore, is called upon to carry a greater part of the total cost than he had to carry a year ago, for bankers are preparing for the time when real estate and construction will be lower, and they are forcing the owner of the property to provide ample security and protection against possible declines. Prospects of an easier movement in the mortgage money market are linked up with the trend of general interest rates, the activity within the industry, and the trend of building costs. General interest rates have advanced slightly, and their outlook is a firm one. The other two factors, activity and costs, have not changed sufficiently to permit an alteration in either the supply or cost of mortgage money. Nor does their immediate future forecast such a contingency.



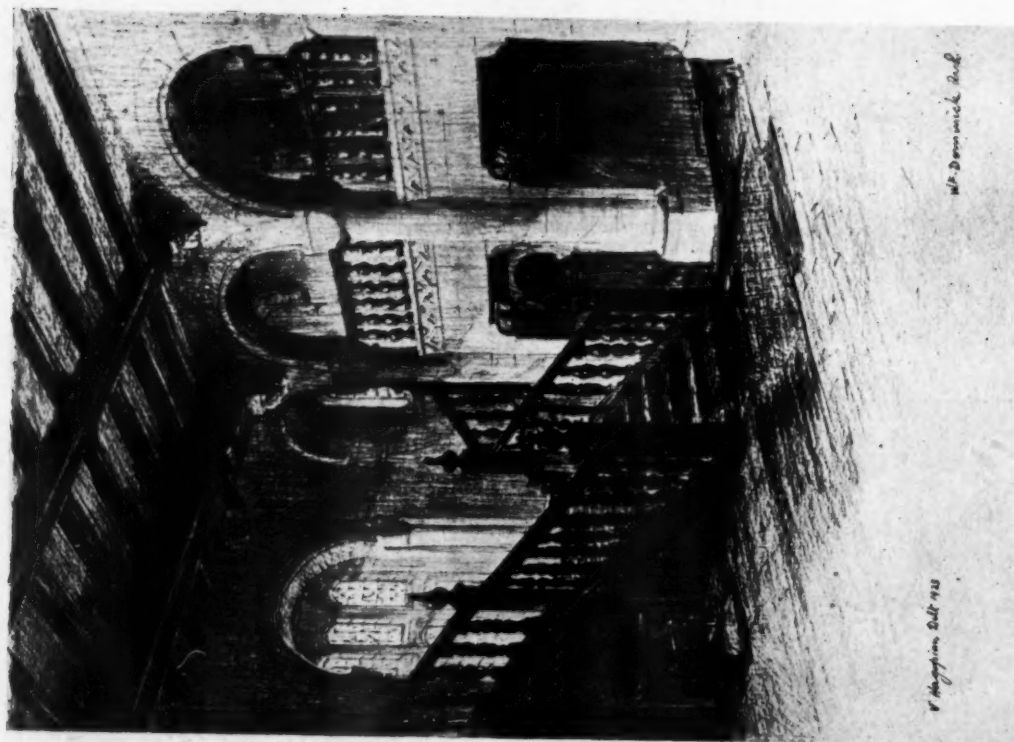
In these sketches of interiors the renderer, V. Hagopian, has endeavored to convey to the client the proper atmosphere and spirit of the architect's (W. F. Dominick) conception. To this effect all secondary details have been subdued to main characteristics and the pictures simply and freely although vigorously treated in color crayons with the harmonious and living effects of light and shade which a long study of executed interiors has accustomed the artist to observe.



OFFICE SKETCHES MADE BY V. HAGOPIAN FOR A PROPOSED HOUSE
BY W. F. DOMINICK, ARCHITECT



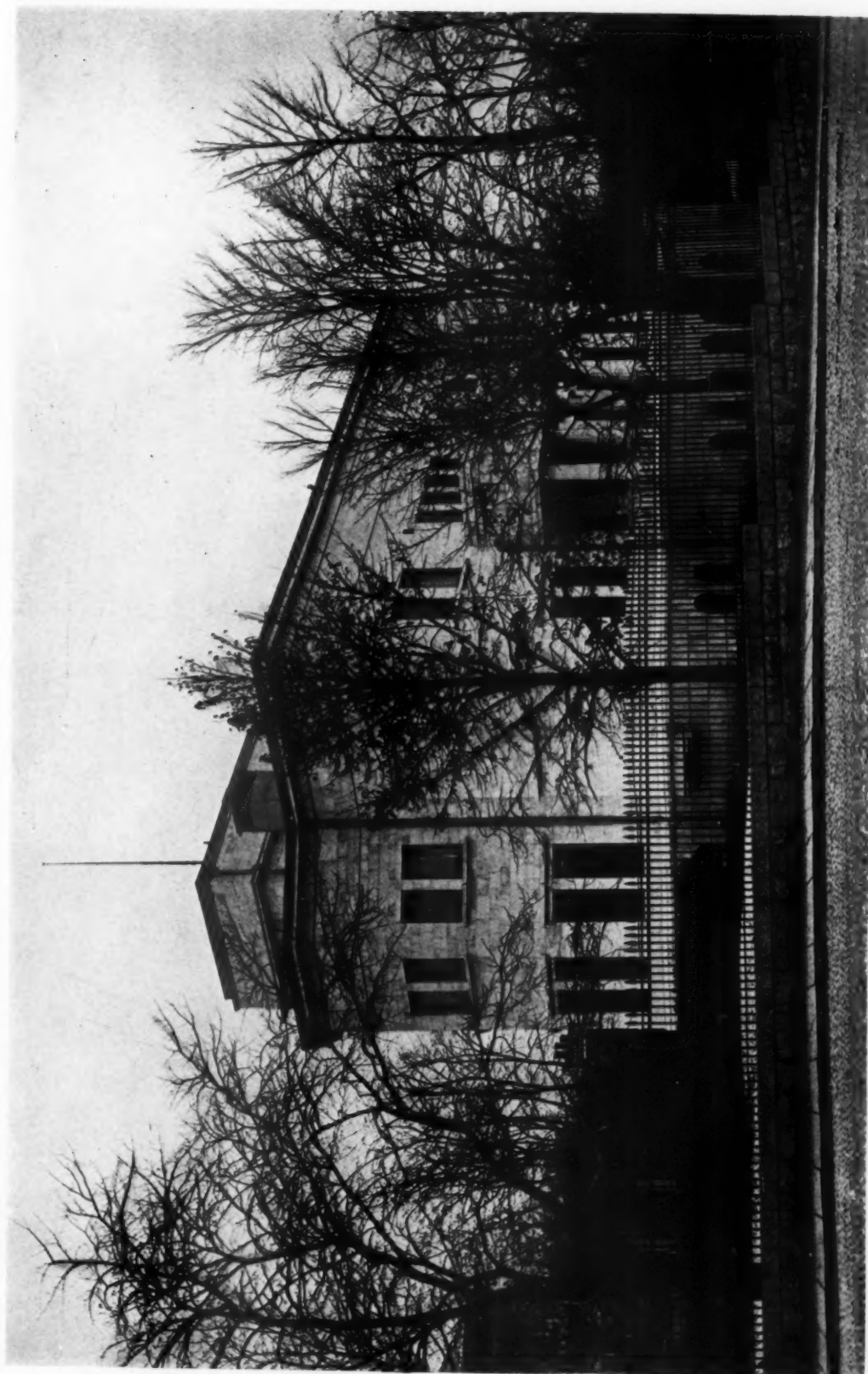
W. F. Dornick Archt.



V. Hagoian Archt.

W. F. Dornick Archt.

OFFICE SKETCHES MADE BY V. HAGOIAN FOR A PROPOSED HOUSE BY W. F. DORNICK, ARCHITECT



VILLA KEIRNER, HELSINGFORS, FINLAND
ELIEL SAARINEN, ARCHITECT



DETAIL, VILLA KEIRKNER, HELSINGFORS, FINLAND

ELIEL SAARINEN, ARCHITECT





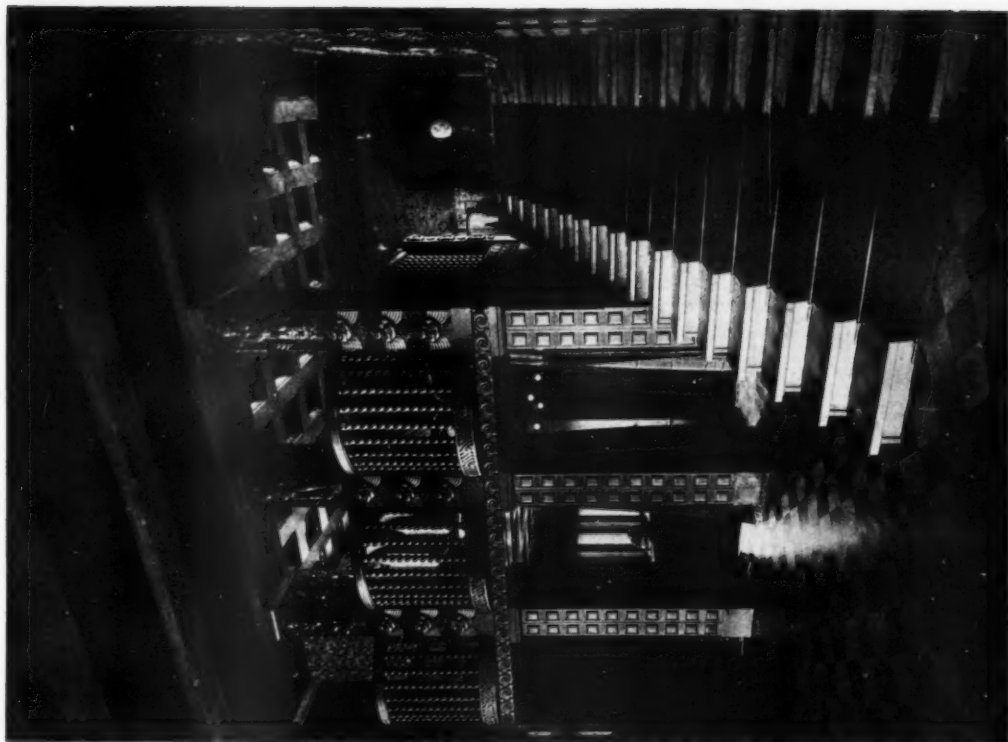
TERRACE, VILLA KEIRKNER, HELSINGFORS, FINLAND
ELIEL SAARINEN, ARCHITECT



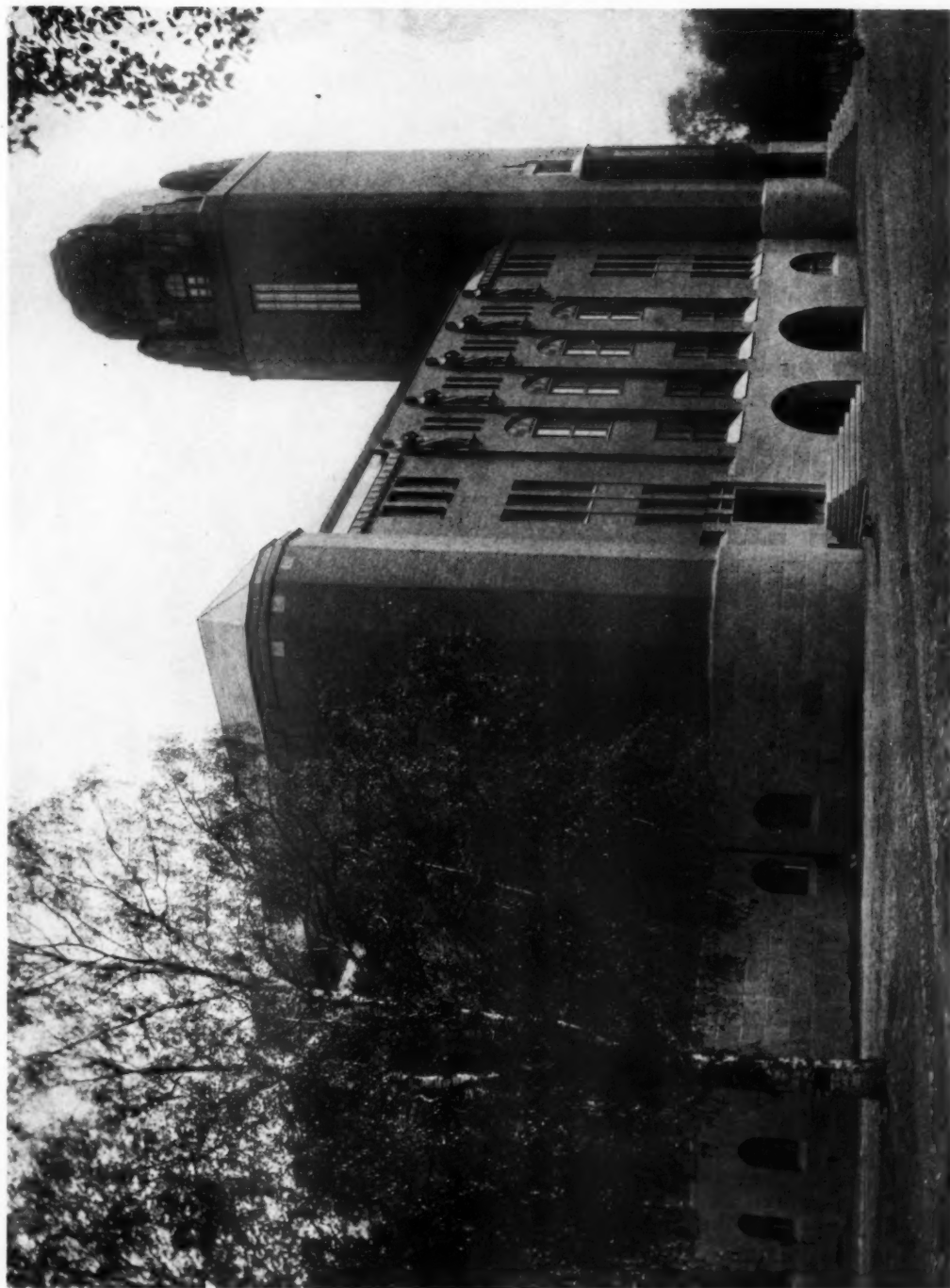
DINING ROOM

VILLA KEIRNER, HELSINGFORS, FINLAND

ELIEL SAARINEN, ARCHITECT



STAIRCASE HALL



TOWN HALL, JOENSUU, FINLAND
ELIEL SAARINEN, ARCHITECT



DETAIL, HOUSE OF ELIEL SAARINEN, ARCHITECT





THE HALL, HOUSE OF ELIEL SAARINEN, ARCHITECT

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INTERIOR VIEW, HOUSE OF ELIEL SAARINEN, ARCHITECT

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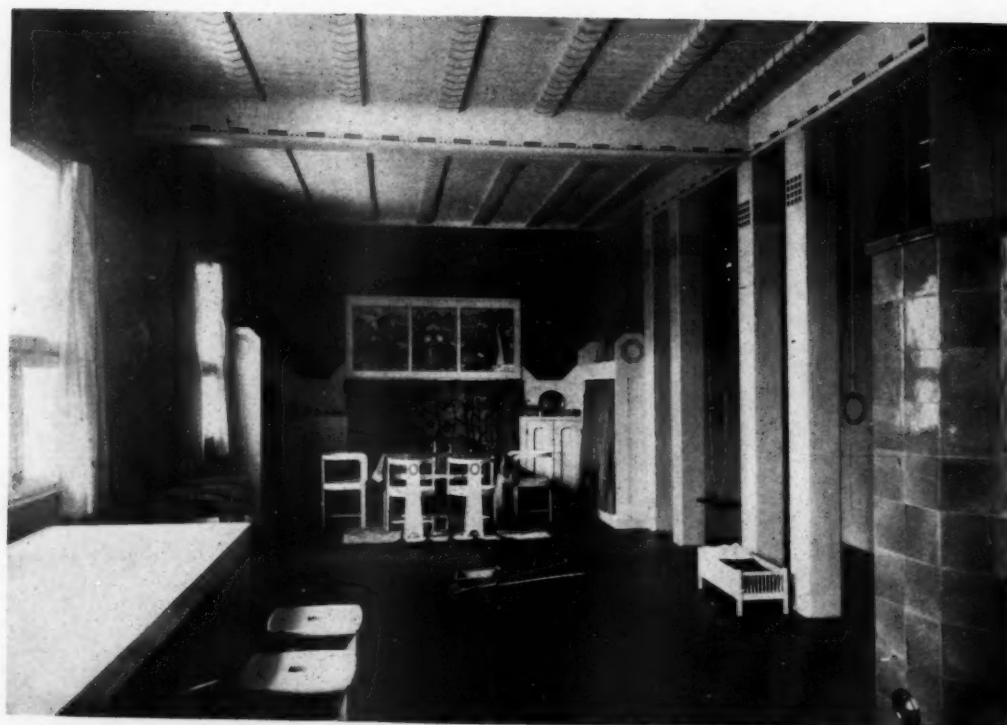
FIREPLACE IN HALL, VILLA KEIRKNER, HELSINGFORS, FINLAND



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DEPARTMENT of ARCHITECTURAL ENGINEERING

FIRE TESTS OF BRICK WALLS*—PART I

DURING the past two years there has been conducted at the Bureau of Standards a series of tests of brick walls to determine the fire retarding values of this basic construction. While brick walls have generally been given recognition as effective fire barriers, the thickness requirements differ greatly as between codes of different cities and other regulatory bodies. Examination of the requirements of over 100 American building codes as it concerned walls of dwellings evidenced thickness requirements from 8 to 16 inches for exterior walls of one-story buildings or the lower story of two-story buildings, 8 to 20 inches for the lower story of three-story buildings, and comparable differences for higher buildings and for party and fire walls. While other considerations than those pertaining to fire are here involved, a considerable portion of the differences indicated can be attributed to lack of definite knowledge regarding the heat insulation and stability of the walls under fire conditions. With values established for brick walls, the test performance of other wall constructions that have had less general and extended use, can be more readily interpreted.

SCOPE OF TESTS

Included in the series were fire endurance tests and fire and water tests with two types of surface clay brick and one shale, sand-lime brick from two sources, and Portland cement-sand brick from one source. The compressive and transverse strengths and absorption of the brick before test as also of brick from the walls after fire tests are given in Table 1, the average values being based on from five to over one hundred tests. The saturation in the absorption determinations was made by boiling the whole or half brick for five hours.

The Western surface clay brick was made of calcareous clay burning to a light porous body of medium strength and fairly good service properties. The Eastern surface clay gave a dark red brick of medium strength and density, and the shale a dense brick of high strength. The concrete brick was made of Portland cement and siliceous sand in the proportion 1:5 by volume, the brick being cut from the bottom of an 8-foot column of the wet mix by horizontal and vertical knives. The age of the concrete brick at the time of the fire tests was about four months and the age when tested individually for strength per Table 1, about six months. The sand-lime (1) brick was made of

high calcium lime and fine sand crushed from high silica sandstone, the proportion being 1:17 parts by weight of unhydrated lime and dry sand respectively. They were molded under pressure and hardened under 130 to 135 lbs. steam pressure for ten to twelve hours. The sand-lime (2) brick was made of lime and bank sand in the proportion of 1:10 by weight, molded under pressure and hardened for ten hours under 120 lbs. steam pressure.

The greater number of walls were laid with brick flat as in solid walls, using common or American bond with five stretcher courses per header course for the 8-inch and 12 or 13-inch walls. In clay brick a few tests were made of 4-inch walls and also of a number of hollow brick walls laid with brick on edge, headers and stretchers alternating, being of the type known as the all-rowlock Ideal wall construction. A schedule of all fire tests made to date is given in Table 2.

1. TEST SPECIMENS AND CONSTRUCTION DETAILS

The walls for the fire tests were 11 feet high and 16 feet wide, being contained within movable frames placed for the test so as to form one side of the furnace chamber. The walls in the present series were tested either as built solidly into the frames to introduce conditions of restraint present when built solidly into adjacent wall, floor, or column construction, or were merely supported in the frames with space for expansion at sides and top, this latter condition being representative of a wide range of use in small buildings and upper portions of larger buildings, where the adjacent construction is not of sufficient weight or rigidity to offer appreciable restraint. To avoid a too extreme condition, pilasters were built into the 8-inch unrestrained walls on each end to afford a degree of lateral support generally received from pilasters, cross walls, and similar building details.

As an aid in obtaining representative workmanship, a contract based on competitive bids was placed for laying the walls for the fire tests at the lowest price per panel for the different thicknesses, with the stipulation that only experienced masons be employed.

The mortar proportions for most of the tests were 1:1¼:6, volume parts of Portland cement, hydrated lime and screened Potomac River sand, the units of measure being one bag of cement weighing 94 lbs. net, one bag of lime weighing 50 lbs. and damp sand weighing 78 lbs. per cubic foot

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dry content, the varying dampness and resulting bulk of the sand received being adjusted on the given weight basis. Two 8-inch solid walls were laid in a 1:3 Portland cement and sand mortar and two in 1¼:3 hydrated lime and sand mortar, the proportions being based on the same volume units as for the cement-lime mortar. The bricks were wetted by sprinkling except when laid during the winter months.

13-inch solid walls the longitudinal joints were fairly filled due to laying the two outside stretcher courses first, the center course being laid in a full bed of mortar slushed in between the outside brick.

For hollow walls of the Ideal rowlock type, mortar was spread on the bed joint for several brick and usually only one outer vertical edge of stretchers buttered with mortar obtained either from cutting off the bed joint or from the board, and

TABLE 1—STRENGTH OF BRICK BEFORE AND AFTER FIRE TESTS

Kind of Brick	Condition and location in wall	Average compressive strength lb. per sq. in.		Average modulus of rupture, lb. per sq. in.	Average absorption per cent
		On edge	Flatwise		
Western Surface Clay	Before fire test	2383	2955	1181	23.1
	Unexposed bricks after fire test	2308	2686	902	21.7
	Exposed bricks after fire test	2309	2600	511	21.0
Eastern Surface Clay	Before fire test	2362	3220	944	15.8
	Unexposed bricks after fire test	2421	3062	823	15.6
	Exposed bricks after fire test	2271	3152	516	15.5
Shale	Before fire test	6402	8236	2015	6.7
	Unexposed bricks after fire test	5386	6222	2413	6.4
	Exposed bricks after fire test	4674		508	6.6
Concrete	Before fire test	1533	2777	650	13.4
	Unexposed bricks after fire test	1592	2230	447	12.6
	Exposed bricks after fire test	1057	1458	153	
Sand-Lime (1)	Before fire test	4724	4628	930	16.6
	Unexposed bricks after fire test	3863	4840	590	16.3
	Exposed bricks after fire test	1546	3071	120	17.1
Sand-Lime (2)	Before fire test	1688	2077	463	21.0
	Unexposed bricks after fire test	2241			18.1
	Exposed bricks after fire test			122	18.1

Observations were made on methods and rate of laying the brick, the degree to which joints were filled, and related construction details. From 1,000 to 3,300 brick were required to lay the different walls, requiring from one day to over three days' time of one mason, so the ordinary routine of doing work might be expected. Bricks on side in the solid wall were uniformly laid by the "spread and lay" method, the mason spreading for two to five brick which were generally buttered on one outside vertical edge only and laid in place with little or no shoving. For buttering stretchers the mortar from the "cut off" on the horizontal joint was generally used, the trowel being seldom returned to the mortar board for the purpose. Headers were buttered at both ends, and sometimes for the greater portion of their length, requiring more frequent recourse to the mortar supply on the board. The spread for the following course filled the transverse joints to some extent and they were found on the average three-fourths full on examination after test. The transverse joints of the stretcher courses were placed opposite in some walls and broken in others, the general plan being to have one wall built with each detail where two walls of the same brick and thickness were built. The longitudinal joint was less well filled, varying from one-fourth to three-fourths full for 8-inch solid walls. In 12 and

headers on all vertical edges with mortar generally taken from the board. Somewhat more shoving and tapping of brick was necessary than for the walls with brick laid flat, the bed joints being uniformly full and the vertical joints about three-fourths full on the average. The hollow walls required 25 to 30 per cent less brick than solid walls of equal area.

The rate of laying varied from 625 to 1,960 brick per mason per 8-hour day, depending upon the type and thickness of wall, the skill and number of masons working on a given wall, and the number and efficiency of the helpers. The lowest rate obtained with 4-inch walls laid by one mason and helper and thicker walls with three or four masons working, and the highest rate for one mason and two helpers on an 8-inch solid wall. The average rate for all solid walls with bricks laid flat in cement-lime mortar was 670 bricks per mason per 8-hour day for the 4-inch thickness and 1,230, average, for 8-inch and heavier walls. The rates with the Portland cement mortar and the lime mortar were near the last named average with cement-lime mortar, although strictly comparable conditions did not obtain as it concerned the skill and number of men employed. The average rate for the hollow walls was 910 bricks per 8-hour day, the time required to construct walls of equal area and thickness being nearly the same as be-

tween the solid and the hollow types, 8 and 12 or 13 inches in thickness. The above details are given as indicative of the workmanship obtained, and the bearing this has on the application of the test results.

The walls were aged from five to eight weeks before test, depending on the drying conditions and type and thickness of wall. Companion piers 2 to 3 bricks wide, 24 to 36 inches high, built at the same time and of the same thickness and brick bond as the large walls, were weighed at intervals during the aging period to determine the rate of loss of free water. They were later tested in compression.

2. TESTING METHODS

A section through the testing furnace is given in Fig. 1. The fire exposure is obtained with oil burners in the furnace pit aided by secondary jets above the floor line. The fuel oil is atomized at the burner tip by jets of compressed air, the additional air needed being supplied by a blower.

The fire exposure is regulated to conform as nearly as possible with a predetermined time-temperature relation, whereby a furnace temperature of about 927° C. (1,700° F.) or what corresponds to a cherry-red heat, obtains at the end of the first hour, 1,010° C. (1,850° F.) at two hours, and from this point a uniform rise to 1,177° C. (2,150° F.) at six hours. Temperatures are measured by the thermoelectric method, using a given standard pyrometer mounting, since temperature indications, particularly during the first half hour, are influenced considerably by the design and size of the mounting. Thermocouples are placed at six points in the furnace, at nine points on the exposed face of the panel, at five or more points within the wall and on the unexposed surface, potentiometers being used to measure the potentials indicative of the temperatures obtaining at the thermocouple junctions. Couples are also placed at open or imperfect joints on the unexposed surface and also under excelsior and cotton pads, representative of conditions where material is stacked against the unexposed side of fire and party walls. Careful observations were made during the test for evidences of open joints in the wall and its borders, these being usually revealed by early steaming on the unexposed side.

Six hours was taken as the limit of the exposure in the tests on the general ground that an exposure of four hours of the intensity above indicated is probably the equivalent of the general maximum fire conditions in buildings, excepting possible cases where large amounts of burning or hot debris remain in contact for longer periods. The additional test duration over four hours was added as a factor of safety, considering that even with the care used in obtaining representative material and workmanship, walls in buildings will sometimes be inferior in these respects to the test walls, also

in some building fires, high temperatures are developed in comparatively short time with fusion effects not obtained in the standard test exposure until within the last hour of the 6-hour period.

Deflections relative to the containing frames were measured at nine or more points as well as the expansion of the unrestrained walls.

In the fire and water tests the walls are exposed to fire for one hour, when the panel is withdrawn and a hose stream from a 1½-inch nozzle under 50

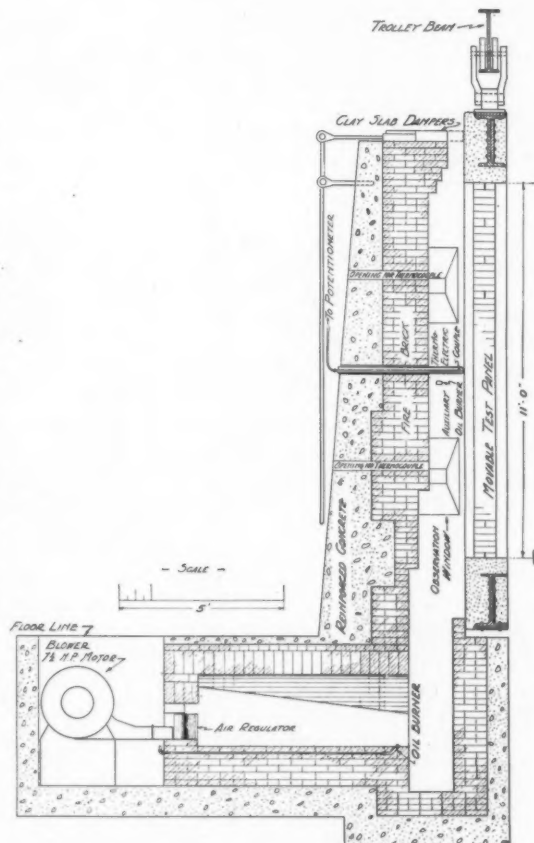


Fig. 1. Section through test furnace

lb. per sq. in. water pressure is applied over the hot side.

3. TEST CHARACTERISTICS AND RESULTS

(a) *Deformation and Cracking.*—The first indication of heat effects was deflection of the central portion of the wall toward the fire, and for the unrestrained wall, deflection of the upper portion away from the fire. This was due to the rapid expansion of the inner surface with reference to the outer, causing them to assume spherical or cylindrical shapes, and for the unrestrained walls, an outward rotation on the base was thereby

induced. The maximum deflections attained are given in the last columns in Table 2. The deflection of the restrained walls was undoubtedly augmented by the expansion of the wall within the restraining frame, although indications are that this effect was of minor consequence, since most of the deflection can be accounted for on theoretical bases as being due to temperature difference between the two faces.

The time of appearance, number, and size of cracks and general distortion of the wall varied somewhat with the kind of brick and to greater extent with the restraint imposed, the restrained walls being subject to much less cracking than those tested unrestrained. For the restrained walls cracks on the exposed side over $\frac{1}{8}$ inch wide were rare, although on the borders between the test wall and the restraining frame openings up to $\frac{3}{8}$ inch with 8-inch walls, and up to $\frac{3}{4}$ inch with 4-inch walls were caused mainly by the deflection of the wall, the cracks decreasing in width as the fire side was approached. For the unrestrained walls cracks in the walls proper up to $\frac{3}{8}$ inch were formed in a number of walls, these also closing up toward the exposed side, although the furnace glow could often be seen through them. The first cracks in the wall itself were generally formed diagonally across the corners due to the restraint offered here to the inward deflection of the wall. In point of freedom from cracking in the wall the bricks in the series can be roughly placed in the following order: Eastern surface clay, Western surface clay, concrete, sand-lime (2), sand-lime (1), shale, although differences between some of the types are difficult to distinguish, and as previously indicated, for restrained walls the cracking was not in any case sufficiently pronounced to be critical. In point of minimum damage to the units in cracking and spalling the above order holds approximately for the different kinds of brick. Only a few bricks spalled during the fire tests, the portions falling off being from the exposed side and $\frac{1}{4}$ to $\frac{3}{4}$ inch thick. With all but the more fire-resistive brick there was considerable cracking of the units generally longitudinally with the wall, $\frac{1}{2}$ to $\frac{3}{4}$ inch back of the exposed face, also across the brick. The test results indicate that brick in restrained walls laid with strong mortar crack more than when laid in weak mortar in unrestrained walls, due to absence of high induced pressures in the latter case, and the tendency for the general wall cracks to follow the mortar joints rather than to go through both brick and joints. The effect of the fire on the strength of the brick is shown in the results of tests of brick from the walls after fire test in Table 1. Generally brick not directly exposed suffered little loss in strength. The loss in strength of exposed brick varied greatly with the type of brick, also the tests cannot be taken as a full criterion of the

loss since it was not possible to obtain tests on some of the brick that had suffered the greatest deterioration, this applying particularly to transverse strength.

No walls, restrained or unrestrained, 8 inches or



Fig. 9. U exposed side of a 4" restrained shale brick wall 3 hours after start of fire test, Test No. 13

over in thickness failed due to excessive deflection during the 6-hour fire test. The top deflections of some of the unrestrained walls were so large as to give them no large margin on stability. One 4-inch restrained wall (No. 13) developed such excessive deflection at 2 $\frac{2}{3}$ hours as to require discontinuance of the test, portions of the wall later falling out. The other 4-inch wall (No. 8) withstood the fire test for the full 6-hour period although the deflection during the last half of the

test was so large that vibrations or impacts incident with fires in buildings might easily have caused collapse.

Careful examination of 8-inch and heavier walls after fire test indicated that the header bond provided by one course in six for the solid walls and alternate headers and stretchers in the hollow walls was sufficient from the standpoint of resistance to fire, to tie the stretcher brick, no general separations occurring.

The recovery from deformation and cracking after test generally varied from one-fourth to two-thirds of the maximum attained in a six-hour fire test. In a few cases recovery was more complete, and after the shorter fire exposure and subsequent water application in the fire and water tests, the recovery, particularly of restrained walls, was nearly complete.

(b) *Heat Effects.*—The first visible indication of heat effects was steaming from open or imperfect mortar joints, this occurring generally within the first hour, the steaming being accompanied by local condensation for the less absorbent brick. As the test progressed steaming on the unexposed surface became more general and continued until all free water was driven off. The effect of free water in retarding temperature flow in fire tests of masonry walls is difficult to avoid even with long seasoning periods. The temperature curves, Figs. 2 to 8, indicate this effect in the time during which wall temperatures remained near 100° C. (212° F.). The effect is seen to be more marked with

concrete and sand-lime brick than with clay brick, due to the larger amount of water contained in the brick. The curves, however, are not widely different from those obtained with similar materials aged over one year (see for example time-temperature curves, Figs. 90 to 145, Fire Tests of Building Columns, Bureau of Standards Technologic Paper No. 184.) and it is probable that masonry retains some free water even after long use in dry locations in buildings, in addition to the water of hydration of the cement binder, which is not given off at ordinary temperatures.

The time required for temperatures of 150° C. (302° F.) and 250° C. (482° F.) to obtain on the unexposed face and four inches inside of the unexposed face are given in Table 2, as also the maximum temperatures at the end of the test. These are maximum temperatures at any one of five or more fixed thermocouple locations and are higher than the general average but not as high as at cracks, imperfect joints and under the pads of cotton and excelsior applied to the unexposed side. The lower temperature point on which comparisons are made in Table 2 was chosen because of the common use of 300° F. as a limit of permissible temperature for the unexposed side of partitions in specifications for fire tests of such constructions. The higher temperature (250° C., 482° F.) is at or near the ignition point of a number of classes of combustible materials. The surface temperatures in Table 2 and the time they occurred are taken from curves corresponding to

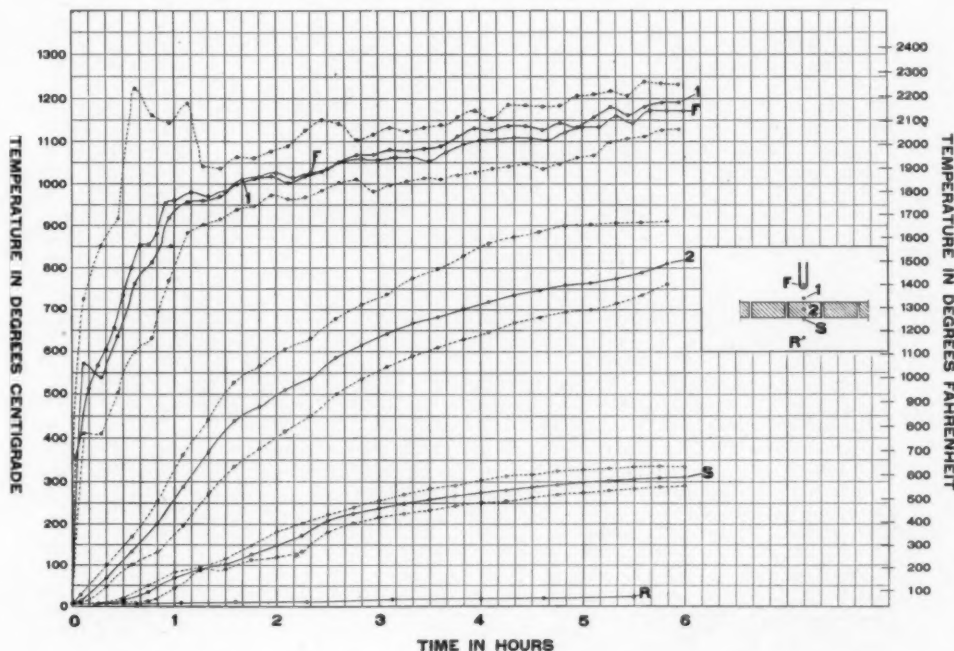


Fig. 2. Furnace and wall temperatures, 4" Eastern surface clay, Test No. 8

the upper broken curve of the "S" group in Figs. 2 to 8, and the wall temperatures from the upper curve of the (2) group for 4 and 8-inch walls, and from that of the (3) group for 12 and 13-inch walls. Of other curves on the plots, "F" gives the average furnace temperatures as determined by six

thermocouples in porcelain tubes, the curve designated as (1) gives the average temperature and the broken curves in the same group the maximum and minimum temperatures near the exposed face of the wall, as measured by nine unprotected thermocouples. Similarly, for temperature within the

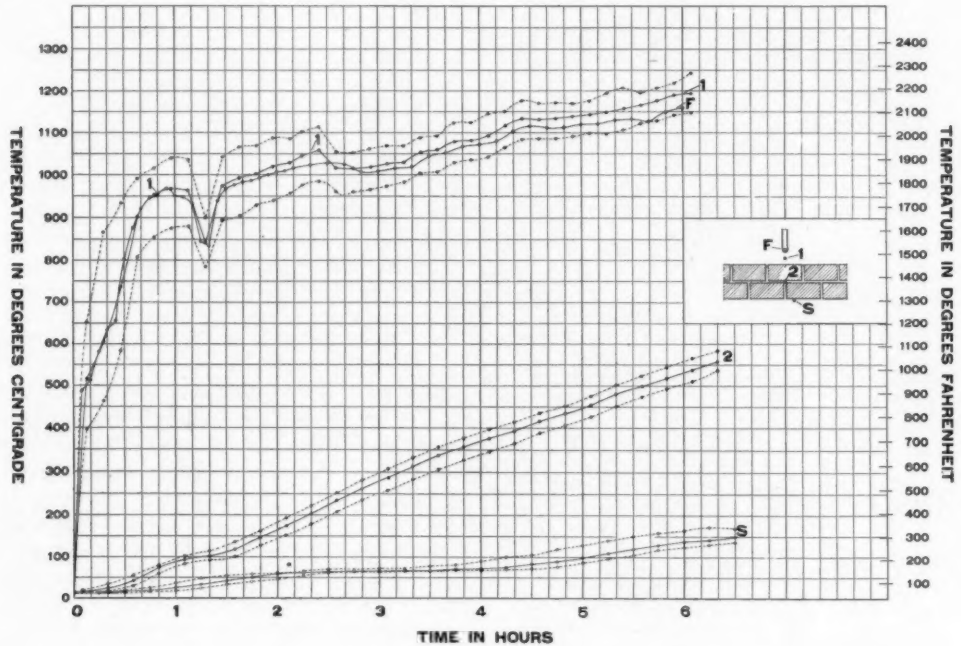


Fig. 3. Furnace and wall temperatures, 8" solid, Western surface clay, Test No. 3

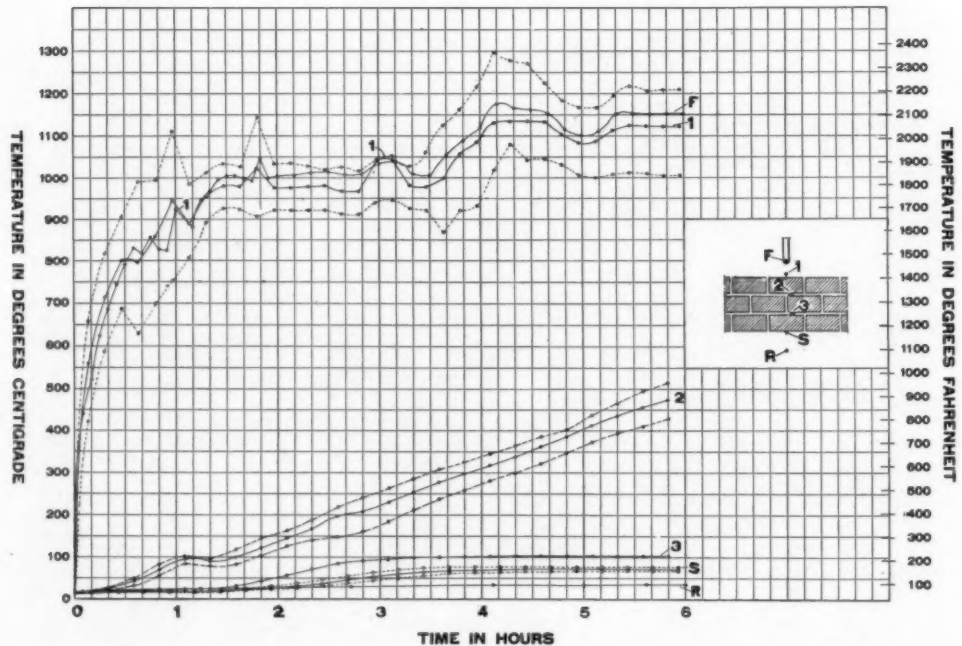


Fig. 4. Furnace and wall temperatures, 12 1/4" solid, Western surface clay, Test No. 7

wall, curves (2) and (3) and on the unexposed surface the curve (S) give the average temperature at five or more points and the broken lines in each group, the maximum and minimum temperatures for these points. The curve designated as "R" gives

the room temperature several feet away from the furnace. This temperature was not much affected by the surface temperature of the test wall, the gradual rise in room temperature as the test progressed being mainly due to general heat dissipa-

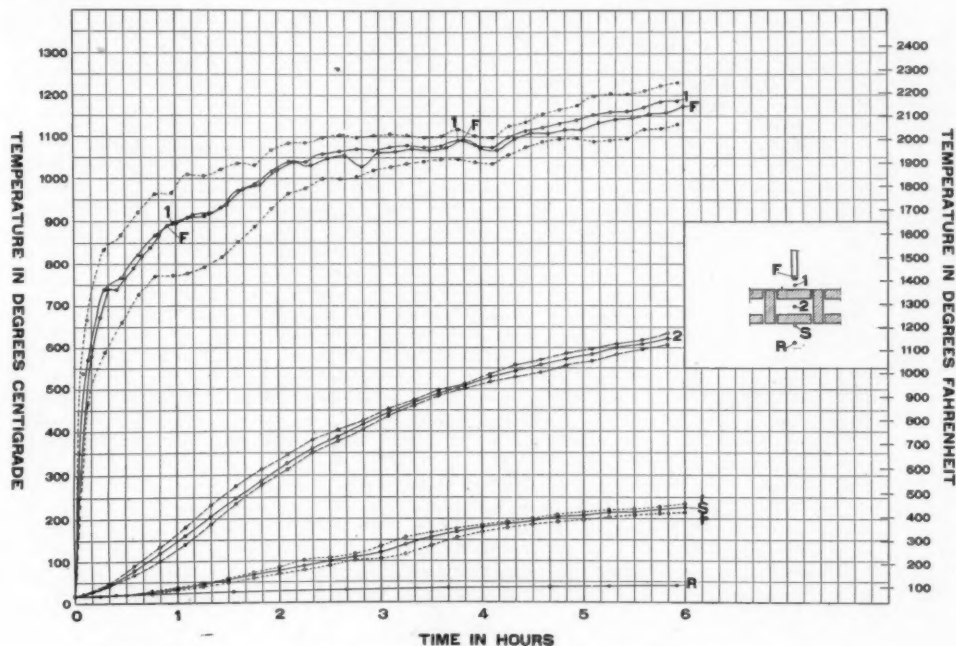


Fig. 5. Furnace and wall temperatures, 8" hollow, Western surface clay, Test No. 5

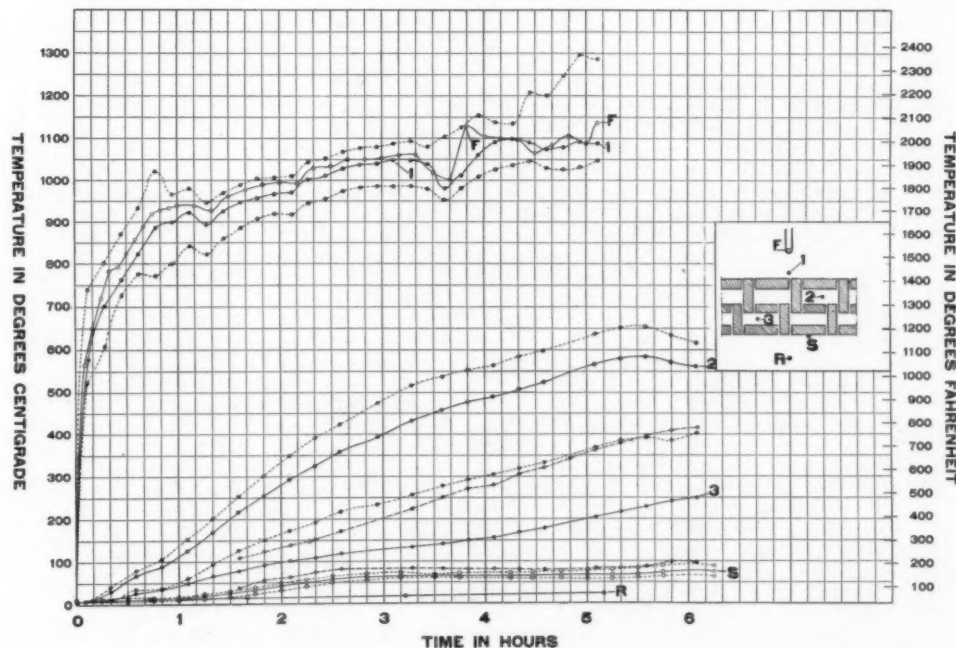


Fig. 6. Furnace and wall temperatures, 13" hollow, Eastern surface clay, Test No. 12

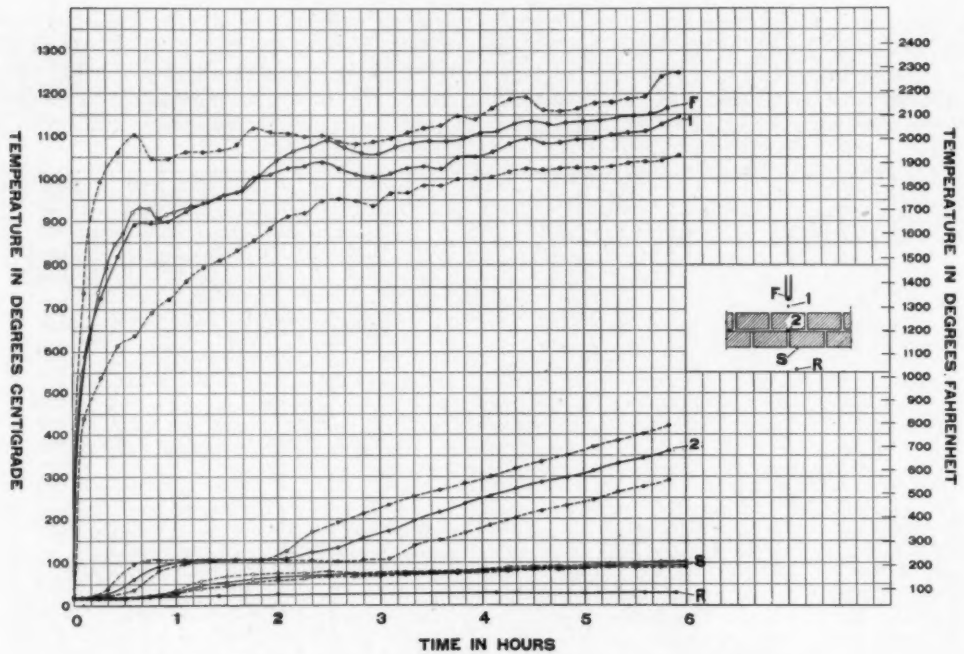


Fig. 7. Furnace and wall temperatures, 8" solid, concrete, Test No. 21

tion from the furnace. For some of the later tests the temperatures near the exposed surface were not measured, the curves in the "F" group giving the

average maximum and minimum temperatures indicated by the protected furnace couples.
(To be concluded)

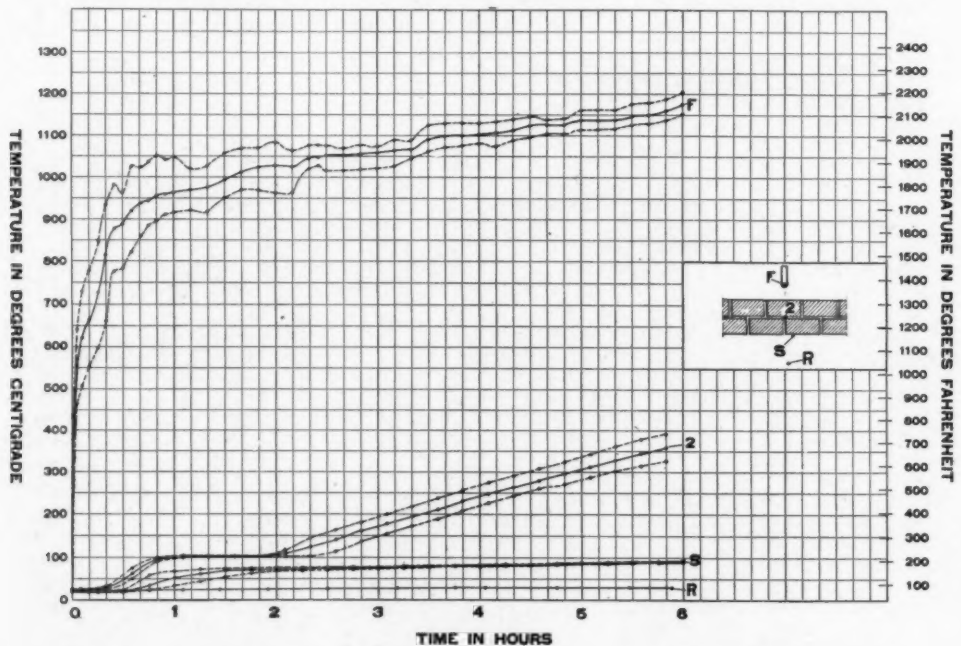


Fig. 8. Furnace and wall temperatures, 8 1/4" solid, sand-lime (1), Test No. 25



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OUTLINE OF FIRST DRAFT OF TENTATIVE SPECIFICATIONS FOR WELL DRILLING AND CASING

(The form of this Bulletin conforms to the arrangement of Elements of a Specification as given in Bulletin No. 5, ANALYSIS OF A SPECIFICATION.)

I. CONTRACT AND LEGAL

1. Parties:
2. Drawings:
3. Agreement:
4. Terms of Payments:
5. General Conditions:
6. Regulations and Codes:
7. Standards:

II. ECONOMIC

SCOPE OF CONTRACT:

8. Work Included:
9. Location:
10. Work not Included:

METHODS OF ANALYSIS AND COMPARISON OF BIDS:

11. Methods:
12. Basis:
13. Conditional Payments:

III. GENERAL DESCRIPTIVE

14. Conditions at Site:
15. Working Limitations:
16. Working Facilities:

IV. PRELIMINARY PREPARATION

17. Field Measurements:
18. Measurements:

SAMPLES AND RECORDS:

19. Samples:
20. Records:

V. MATERIALS

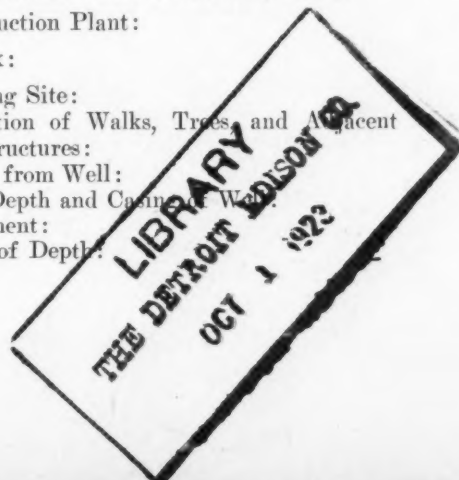
21. Properties, Chemical and Physical:
22. Sizes, Weights, Gauges:
23. Quantities:

VI. DESIGN AND CONSTRUCTION

24. Construction Plant:

FIELD WORK:

25. Clearing Site:
26. Protection of Walks, Trees, and Adjacent Structures:
27. Débris from Well:
28. Size, Depth and Casings:
29. Alignment:
30. Limit of Depth:



31. Finish:
 32. Protection of Work:
- VII. SCHEDULE
33. Field Operations:
 34. Shipment and Delivery:

- VIII. RESULTS
35. Inspection and Performance:
 36. Guarantee:
 37. Tests:
 38. Acceptance or Rejection:

FORTY YEARS AGO

Excerpts from THE AMERICAN ARCHITECT, September 22-29, 1883

THE report of the committee which investigated the charges made against the Supervising Architect of the Treasury Department ought to be interesting to those architects who are charged with the responsibility of expending public money. The committee well expresses its realization of an architect's temptations and responsibilities. The report entirely exonerates the Supervising Architect from the absurd charges of incompetency and corruption brought against him. However, it opines that he used too great discretion in awarding public work according to his own opinion of the merit of different contractors, rather than by advertisement and competition. It is not claimed that the public has not been well served, and at the lowest possible cost, but the assumption by a public officer of a greater discretion than the law allows him seems to the committee a serious grievance.

* * *

There is printed a communication addressed to Hon. Charles J. Folger, Secretary of the Treasury, by Mr. James G. Hill, Supervising Architect, which makes explanation of some points not clearly set forth in the committee report.

* * *

The Technical Commission for the improvement of the sanitary condition of Paris recommends that "in every house there shall be a water closet for each tenement." If necessary it can be placed outside of the tenement, if on the same story. It further advises that "every water closet shall be supplied, either by means of reservoirs or

by a pipe, or in some other way, with a quantity of water sufficient to assure a minimum discharge of ten quarts per day for each person using it." Also, "that every water closet shall be furnished with a trap under the bowl." This reads rather curiously to us, accustomed to the refinements of American and English sanitation.

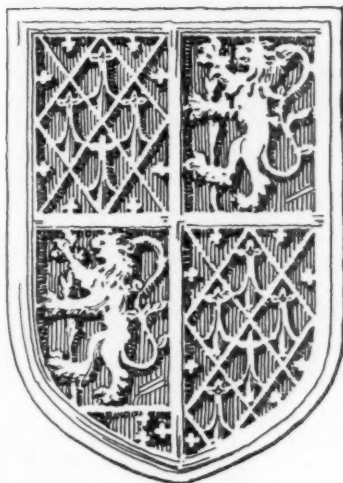
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Mention is made of the death of Mr. John C. Trautwine of Philadelphia, author of the "Engineer's Pocketbook" which is used by architects both for reference and as a textbook. It is interesting to know that he was educated partly as an architect, in the office of William Strickland, a distinguished engineer and architect of his day. Doctor Thomas U. Walter, the architect of the wings of the Capitol at Washington and the present President of The American Institute of Architects, was a fellow student with him. Under Mr. Strickland he assisted in the construction of the United States Mint at Philadelphia and himself won a competition for the Penn Township Bank, at Sixth and Vine Streets, Philadelphia, which was carried into execution.

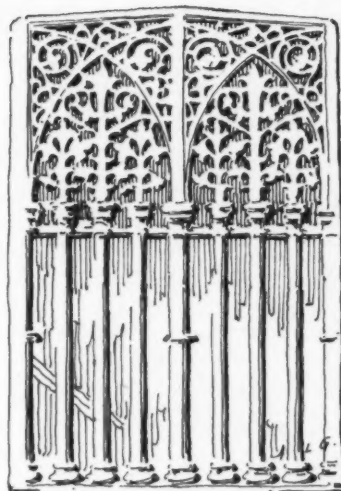
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Illustrations: Design for the Milwaukee Club, Milwaukee, Wis., Silsbee & Kent, architects, Chicago. Berkeley Arms Hotel, Berkeley, N. J., Bradford L. Gilbert, architect, New York. House for J. E. Schwartz, Esq., Pittsburgh, Pa., C. W. Romeyn & Co., architects, New York. United States Court House, Detroit, Mich., James G. Hill, Supervising Architect of the Treasury Department.

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Ferrocraft Grille, No. 108

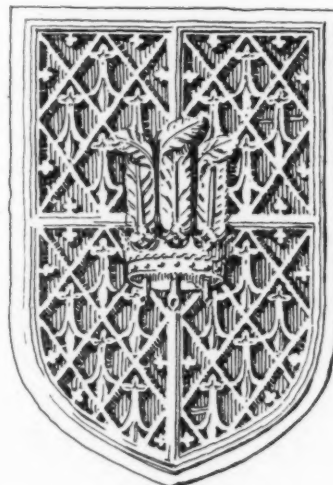


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THE FETISH*

ALL ages and times have what we may call their fetishes, which in literature and journalism take the form of words distorted from their original meaning and redundantly used and of tricks of expression. To use an illustration, we can hardly open a modern novel without finding some character in it is "intrigued," and it would hardly be possible to take up a newspaper without finding the word "pact" used somewhere. Why a character should not be "interested" or "absorbed" instead of "intrigued" it would be hard to say, and why the simple expression "treaty" should be abandoned for "pact" we do not know, but these and other expressions have the charm of a fetish to many writers. We rejoice in "conversations" instead of "discussions," and we are all fond of the "psychological moment" instead of the "opportune moment," probably because it indicates greater insight into the unknown. And in architecture—especially among the younger men—the fetish is supreme, that fetish mostly taking the form of the carefully detailed order which it is the desire of every student to introduce into the simplest design. If this cannot be done, the next best thing is to indicate a design of such marked want of interest and severity that we can judge the designer's work is a lover's lament for the absence of his mistress—the Classic order. No longer does the student pass pleasant hours in studying the smaller and slighter examples of the traditional detail which pleased us in the closing decades of last century, for these trivialities have been displaced by the worship of the present fetish—the immaculate order, preferably of a Greek variety. We have gained and lost in our passage—for we hope it is but a passage—through a sterilizing tract of architectural endeavor. Contemporary planning is undoubtedly an advance on that of the past, and our students have learned how to balance and compose groups of buildings as we might learn to express our thought in clear and logical sequence. What we have lost in our fetish worship is the broad and liberal sympathy which gave grace to much of the best work of the end of last century, the unaffected enjoyment of form and detail, the results of a joyous imagination sometimes revelling in too unrestrained a manner in the great treasure house of past design. To instance two examples of what we mean, one of a student's work and the other of a practicing architect, we may mention the delightful design which secured the Soane Medallion for Mr. Prentice, and which took the form of a great country house, every part of the

design of which showed delight in picturesque and playful form. Our other example is the Institute of Chartered Accountants, too free and playful perhaps for purists, but how much fuller of life and vigor than most of the work which is being done today! We might mention Brydon's work at Bath and Chelsea, virile and perhaps to some in these later days a trifle coarse, but full of vigor and imagination as the Georgian work of which it is the legitimate outcome, and compare it with the combed-down and devitalized design we see around us. Our students seem to us too often to be patiently starving themselves in the attempt to induce visions which do not come and inspiration which escapes their jaded endeavors. We are forgetting the most vigorous growths of the great Renaissance movement in our close and microscopic study of the dull and correct work which brought a mighty chapter of architectural history to a close. We have grown fonder of the work of the pedants than of that of the giants, and forget that the great originators of a style who had the ruins of the Roman Empire before their eyes produced buildings which were as daring in their originality and freedom of form as those of their mediæval ancestors. That Renaissance rather than the older Classic should be the subject of our studies, and should give us a wider range of sympathy than those which now sway us.

Our contention is that we have gained in technique and have the great advantage that a large proportion of men entering the profession have now gone through a careful and systematic course of training. This renders their work more scholarly and less open to criticism from the academic standpoint. If we compare it with the work of a few decades ago, when the student picked up his knowledge more casually, it is natural that we should discover glaring faults in the last. The real criterion is to try to imagine what better trained men would be able to do if they freed themselves from the shackles which now weigh them down and render them incapable of seeing things as they are and taking genuine enjoyment in them.

We have been looking at some of the work produced by our schools of design and examining that done for the Rome Scholarship, and cannot help asking whether we can reasonably hope to attain our object of interesting the general public in architecture along the road we have chosen for ourselves. Can we even really interest ourselves by this machine-made plethora of correct platitudes which passes for the last words of the schools? A contemporary publishes some illustrations of the very curious housing work being

*Reprinted from *The Architect*, of London.

Something More Than Financing

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done in Amsterdam. It is crude, bizarre, and strange to us, but it has at least the touch of life and fancy.

We should not like to see our architects follow along the path indicated, but there may be reasonable grounds for holding, as we do, that there may be a mean between two extremes which would be preferable to either, a mean direction which we should try to recover and one which we were nearer to in the past than we are now. May we not take it that our students may have learned much that will be useful to them, but that at the same time their "orientation" has been wrong, and that it is open to them to find a way in which they will advance their own interests and that of the profession they belong to better than they are now doing. We are convinced that though we may be with the minority of today, that minority will become the majority of tomorrow, and that when it does we shall be a little nearer the day when architecture may again evoke a greater amount of public interest than it does now.

A Good Example of the National Motive

AN eagle, perched on a ball, has long been a favorite motive for architectural decoration. Its treatment in the past has resulted in many



unsuccessful efforts. It has remained for Mr. Frederick G. R. Roth the noted animal sculptor to work out what is a most satisfactory treatment of this motive.



THE DOUGHBOY

Terra Cotta Figure for the Municipal Auditorium and Armory, Jackson, Miss.,
N. W. Overstreet, Architect

AN interpretation which holds true to the facts of the doughboy's appearance and psychology. Contrast this conception of the American soldier as he actually was in the World War with the usually undignified presentation of him in our memorial sculpture wherein he is generally depicted in a slovenly disarray of costume and unreality of posture not characteristic of the well trained fighting man. Truth of aspect in these particulars is attained without sacrifice of decorative grace in this work and is combined with notable excellence of modelling.

It is such an excellent example of the sculptor's art as this that will have a good influence on the memorial work that is now being designed and erected throughout the United States.



When Architects can be *Sure* that the Roof is Right

PICTURED above are a few of the hundreds of municipal buildings in the United States protected with Barrett Specification Roofs.

Today these roofs are recognized as the most permanent it is possible to build. They are bonded for twenty years against repair and maintenance expense. Many roofs of this type are in first class condition after forty or more years of service. Moreover, they take the base rate of fire insurance.

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- 5 Public Bath Association, Philadelphia, Pa.
- 6 Parkland City Hospital, Dallas, Texas.
- 7 Park Board Warehouse, Minneapolis, Minn.
- 8 Public High School, Provo, Utah.
- 9 Recreation Building, South Manchester, Conn.
- 10 Bureau of Water, Philadelphia, Pa.
- 11 Municipal Bath House, Coney Island, Brooklyn, N. Y.
- 12 Public Library, Mason City, Iowa.
- 13 Police Station, Trenton, N. J.
- 14 City Hall, Scranton, Pa.
- 15 Park & Fire Departments Building, Baltimore, Md.
- 16 Fair Building, Fair Grounds, Sedalia, Mo.
- 17 Community Building, Johnsbury, Pa.
- 18 Water Works, Harrodsburg, Ky.
- 19 City Hall, Moorhead, Minn.
- 20 Department of Public Works, Philadelphia, Pa.
- 21 Corn Palace, Mitchell, S. D.
- 22 Incinerator Plant, New Orleans, La.
- 23 Memorial Hall, Topeka, Kan.
- 24 West Roxbury Court House, Boston, Mass.

Barrett Specification Roofs

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Harvey W. Corbett Presents Architectural Prizes in London

AT the annual prize-giving and exhibition of work by students in the Architectural Association School of Architecture recently held in London, Harvey W. Corbett, President of The Architectural League of New York, was an honored guest.

At the request of the president of the Association, Mr. Corbett presented the prizes. His address, as reported in the London architectural press was, in part, as follows:

The most important thing anyone could do was to help forward education. The mere building of buildings would amount to very little if they did not carry on that other work. He was afraid that the real reason for his undeserved honor was that when he came to the Architectural Association some two weeks previously for a quiet lunch he had met their president, secretary and director, and got talking too much, because he received afterward a card asking him to come there on that very important occasion and to talk to them on the lines of his discussion during the lunch. He had forgotten what that was, but he imagined that in all probability it was education, because that was a thing he had been very deeply and actively interested in ever since his return to New York from Paris twenty-three years ago. It was the duty of every practicing architect to give of his time toward the work of education. They must remember that when the student finished at the schools he was only continuing his education, and the practicing architect must take that man and guide him. Everybody ought to bring into that system the young man, so that he may become part of it. The profession was a very broad one. Practically every human activity was connected with some building or other. Their field, indeed, was the broadest in the world. He could tell the young man or woman all that was necessary to be a successful architect. But unfortunately every month his ideas changed on the subject of what and how the student should be taught. He was, however, decided on one point, one test which might be applied to any architectural school or any group of people working together. And the test was "Are the students enthusiastic, interested, excited about their work—or are they simply being driven along?" A great deal of education was something being done to us. The function of an educator was to make it possible to inspire the students to work for themselves. Personally he felt convinced that the A. A. School passed that test of a perfect scheme of education 100 per cent. The system they were following was perhaps a little different from their system in America, where, owing to the volume of work, they had of necessity to standardize their educational methods. Consequently there was not so much scope for individuality as over here. But it did

not make much difference if the student was keenly interested and so inspired that he was ready to work twenty-three hours out of the twenty-four, and sometimes even more. Ideal results would come from such students later on in life. In American educational work pressure was continuously being brought to bear to make the courses more and more practical. All practical things were a very essential part of an architect's education. But the best period for training his imaginative faculties came between the ages of 19 and 25. Then was the time for the free "projet," not limited by cost, by site, or by the other factors which sorely tie him later on. The practical conditions of American cities are going to be such as to require the greatest imagination which architectural genius can bring to bear. He might say "the soft pencil turneth away wrath" and "the softer the pencil the higher the salary." By which he simply meant that the man who used a soft pencil thought of proportion, mass and general principles before detail—and that was the logical sequence. They in the States had offices of considerable size. He had been told it would be difficult to get several Englishmen working similarly together in partnership. In America, sometimes draftsmen were members of the firm. That method had come into being because the volume of work covered so great a field it was necessary to have co-operative effort to bring about successful results. He did not think a comparison could be made between conditions here and across the Atlantic, so entirely different were they. In the States they had to build up an organization to cope with the special conditions.

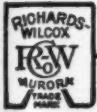
A Mutual Rent Plan

WALTER RUSSELL, architect, with offices in New York, has evolved a mutual rent plan presenting many novel features, and one which he believes will solve and overcome many existing rent evils. Mr. Russell hopes to establish a corporation to be known as the National Rent Mutual Co., through which tenants of buildings to be erected by that corporation will, eventually, reach a point at which they occupy their apartments without cost and, in addition, receive an annuity in the form of dividends developed from their early rent payments.*

A founders' committee of one hundred is being organized. Fifty-nine members already have subscribed. Among architects interested are Thomas Hastings, Burt L. Fenner, Harvey W. Corbett, Donn Barber and McKim, Mead & White. Each of the founders subscribes \$1,000 as an investment to give initial impetus to the idea.

In explaining the plan Mr. Russell stated in an interview printed in the daily press:

"Rents are mounting beyond the ability of the people to pay. They have reached the danger



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A span of three-quarters of a century is represented by Trinity Church, standing among the crumbling graves of past generations, and the American Surety Building, facing each other across lower Broadway, New York. This newly completed building is one of the most imposing of the modern skyscrapers that crowd the famous Wall Street district.

In keeping with the very latest advances in building construction, the elevator doors in this towering office structure are equipped with 168 sets of R-W "Ideal" Door Closers. Elevator doors equipped with R-W "Ideal" are closed easily, swiftly, noiselessly and completely with one motion. The graves in the yard of Old Trinity are no more silent than

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point where national welfare is affected. This new plan will rid old age of the fear of dispossession. It will convert the waste of a lifetime into the savings of a lifetime. It will make a nation of homeowners.

"Rent mutualization means universal property ownership through normal rent paying. It puts a dividend-paying value into rent receipts just as life insurance receipts become dividend-paying through mutualization of the companies. It means participation by the rent payer in the potential value represented in the rent receipt. It means gradual elimination of rent paying. It would give back to the rent payer annually that share of the deed which his money has paid for after paying taxes, operating expenses and fair service charges. It should cut a man's rent in half in seven years or give him rent free and a substantial cash annuity in twenty-one years. Nobody can be evicted so long as his participation credit is unused. It gives a family two years of free rent if the breadwinner dies. It is the final solution of the rent problem.

"The company will be officered by men of much experience and will have an advisory board consisting of an architectural committee and of highly technical experts. The capital will be \$10,000,000, of which the founders' preferred stock, 8 per cent cumulative, will be \$100,000. There will be \$4,900,000 in preferred 6 per cent cumulative and \$5,000,000 in common stock. The preferred stock will be sold universally, with additional common stock as bonus. This \$5,000,000 together with \$5,000,000 of temporary mortgage money, will be invested in National Rent Mutual buildings and filled with tenants who shall pay normal rents.

"The first demonstration buildings will be studio buildings, for the arts are sadly in need of proper housing and the majority of founders are prominent artists. The company, acting as construction company and owner, can save from 15 to 20 per cent of the cost of a building by eliminating all extravagant methods of financing and secure better buildings by idealizing working conditions between architect and sub-contractor.

"When a building is completed and filled with paying tenants and operated at least one year a detailed statement of its exact cost shall be issued. It shall include an insurance fund to be set aside at the rate of \$10 per \$1,000 to give two years' rent free to any family losing its breadwinner by death. The statement will show that about two-thirds of the gross income will be used to pay operating expenses and one-third as gross profits. Upon this statement of fact the company will issue and sell $5\frac{1}{2}$ per cent guaranteed bonds for 80 per cent of the total cost of the building. These will

be redeemed and cancelled at the rate of 5 per cent of the issue annually, beginning at the end of the third year. This will give the company four years of earnings to release its 20 per cent of capital tied up, part of which is cash and part service charge or profit, for construction.

"Out of the one-third gross profits left over from rental income a depreciation fund, based on 2 per cent of the cost of the building, shall be set aside for replacement. The balance will represent net profits. Rent Mutual dividend-paying participation certificates will be issued for 90 per cent of this amount and given to tenants in the exact ratio of their respective interests. Participation certificates will equal in value the common stock, but will be non-voting. The remaining 10 per cent will be retained as the company's share of net profits."

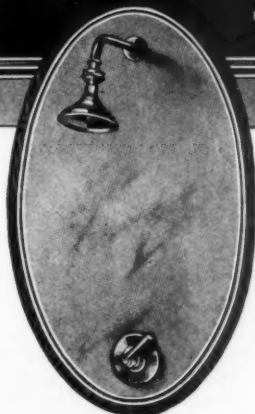
Data on Accidents

A REPORT on industrial accidents in the United States has recently been issued by the United States Bureau of Labor Statistics.

Data on accidents in the construction industry are presented in a section assembled by the National Safety Council, designed to supplement the showing of the industrial classifications in the several states. Indeed, since these are presented by means of standard rates they give a better idea of conditions with reference to accidents than is afforded by the number of accidents as shown in the state reports.

There are two purposes to be served by a study of accidents. First, their prevention so far as this is possible, and, second, the adequate compensation of those accidents which cannot be prevented. Five things are necessary to know regarding accidents if their study is to be of the greatest service in accident prevention, viz: The number of accidents, the industries in which they occur, the causes, the amount of exposure to hazard, and the severity of the accidents.

The development of the vast system of workmen's compensation throughout the country has resulted in the assembly and publication by the several compensation jurisdictions of a great volume of statistical data. About one-half of the report deals with these data in an attempt to show what can be gathered toward a presentation of the accident situation on a national scale. So far as possible the record has been arranged on a uniform classification of industries, cause of injury, nature of injury and location of injury. Unfortunately lack of information regarding the amount of exposure in the various industries renders this body of information very much less significant than it otherwise would be.



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Eliel Saarinen to be Visiting Professor at University of Michigan

THE College of Architecture of the University of Michigan is pleased to be able to announce that Mr. Eliel Saarinen of Helsingfors, Finland, will be Visiting Professor in Architectural Design during 1923-24. He will criticize in advanced and graduate designing.

Doctor Waid Goes Abroad

D. EVERETT WAID, F. A. I. A., Treasurer of The American Institute of Architects and President of the New York Chapter, is now sojourning abroad. Doctor Waid will visit England, France, Belgium and Spain before his return.

Twenty-first Annual Philadelphia Water Color Exhibition

THE Pennsylvania Academy of the Fine Arts and The Philadelphia Water Color Club announce that under their joint management, an exhibition of original work in water color, black and white, pastel, or drawing with pencil, crayon or pen, or illustrations in whatever medium, will be held at the Academy, beginning Sunday, November 4, 1923, and ending Sunday, December 9, 1923, both inclusive. All work intended for exhibition must be sent to the Academy in time to be received not later than Tuesday, October 16.

Coincident with this exhibition, there will also be held, under the joint management of the Pennsylvania Academy and the Pennsylvania Society of Miniature Painters, the twenty-first annual exhibition of original miniature paintings which have not before been publicly shown in Philadelphia. The closing date for the receipt of work to be shown at this exhibition is Monday, October 22, 1923.

For further particulars regarding these two exhibitions, address the Pennsylvania Academy of the Fine Arts, Broad and Cherry Streets, Philadelphia.

Competition for a New City Hall in Buffalo, N. Y.

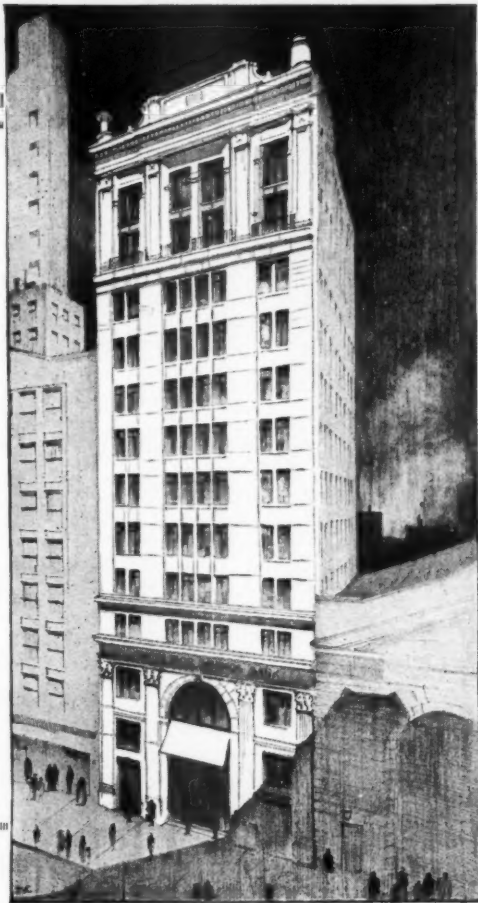
A PROGRAM for a competition to select an architect for the proposed new City Hall in Buffalo, N. Y., has been prepared and has received the approval of the Buffalo City Planning Committee. It is learned that this program is now before the City Council of Buffalo for final approval.

The program provides for an invited group of architects from outside the city of Buffalo. The competition will also be open to all local architects. Later developments will be announced.

Building Congresses

THE Building Congress movement grows slowly and in this is the promise of its ultimate strength and influence. The Building Congress appears to be the only organization that embraces all of the elements of the building industry. All other organizations in that industry are limited to some particular factor and appear to be established for offensive and defensive purposes, to serve the selfish ends of that special interest. It follows that certain antagonisms must develop between these groups. Perhaps they are necessary, but to the observer they appear as armed camps. The Building Congress comprises six groups that constitute the industry: promotion and finance, composed of real estate brokers and investment bankers; design, composed of architects and engineers; contracting, composed of general and sub-contractors; labor, composed of the representatives of labor organizations and workingmen; material supply, composed of manufacturers of and dealers in materials and equipment; general interest, composed of all others whose interests are not specifically those of one of the other interests, such as educators, representatives of professional and trade papers, real estate editors of daily papers, business organizations and others. The purpose is to survey the conditions and needs of the industry, find and recommend ways and means to satisfy those needs and make such recommendations effective through existing organized agencies or create new ones where necessary.

These congresses are purely deliberative institutions without mandatory power and by influencing the minds of their members and the public, they attain benefits for the industry. As a rule the congresses have been organized and restricted to cities, such as Boston, New York, Philadelphia, Portland (Ore.) and others. The latest organization is that of the New Jersey Building Congress with headquarters in Newark. This particular organization is unique in that it includes the entire state. There are many reasons why this is found to be desirable in that particular situation. It is rapidly building up an influential and well balanced membership and should become a power in the betterment of the conditions which affect the building industry.



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PERSONALS

Eliel Saarinen, architect, advises us that his address for the present will be 1136 Maple Avenue, Evanston, Ill.

Harold Webber, formerly located at 403 Morris Building, Philadelphia, Pa., has moved to 1,530 Locust Street, that city.

Lucian E. Smith, architect, announces the removal of his offices from 2 West Forty-seventh Street to 247 Park Avenue, New York City.

Arthur T. Remick, architect, announces the removal of his office from 135 East Forty-third Street, to 47 West Forty-third Street, New York City.

Howard & Hatcher, architects, DuBois, Pa., have opened an office in the Empire Building, Pittsburgh, Pa. Manufacturers' literature is requested.

Mountjoy & Frewen, architects, announce the removal of their office from the Chamber of Commerce Building to Suite 1,000, Patterson Building, Denver, Col.

Alexander C. Eschweiler announces that he has associated with himself his sons, under the firm name of Eschweiler & Eschweiler, architects, 210 Mason Street, Milwaukee, Wis.

Announcement is made that L. Skolnik, architect, has opened an office for the general practice of architecture at 210 Sixth Street, St. Clair Building, Cleveland, Ohio.

Philip Brezner, of Lansing, Mich., and R. V. Gay, of St. Johns, Mich., have formed a partnership under the firm name of Brezner & Gay, with offices at 812 Prudden Building, Lansing, Mich.

Announcement is made that Lester B. Edwards has become associated with Frost & Chamberlain, architects, the firm name being Frost, Chamberlain & Edwards, 1,006 Slater Building, Worcester, Mass.

Eric E. Hall, architect, announces the formation of a new corporation, associating with A. J. Lawrence, Fred O. Rippel and H. E. Ratcliffe for the practice of architecture under the firm name of Hall, Lawrence, Rippel & Ratcliffe, Inc., architects, 123 West Madison Street, Chicago, Ill.

It is announced that Albert Schroeffer, architect, has removed his office to the Foxcroft Building, 68 Post Street, San Francisco, Cal.

Victor Galbraith, architect, has moved his office from 208 Elks Building, Stockton, to Room 1, City Improvement Building, Lodi, Cal. Manufacturers are requested to send catalogs and samples.

Malcomson, Higginbotham & Palmer, architects, announce the removal of their offices from 405 Moffat Building to the Sixth Floor, Industrial Bank Building, 1217 Griswold Street, Detroit, Mich.

David Lynn, since 1910 the Civil Engineer of the Capitol, has recently been appointed by President Coolidge as Architect of the Capitol, to fill the place made vacant by the death of Elliott Woods.

Toby Vece announces the opening of an office for the practice of architecture in the Wolcott Building, 817 Chapel Street, New Haven, Conn. Manufacturers are requested to send catalogs and samples.

C. Hauber, architect, formerly of Ronneberg, Pierce & Hauber, announces the opening of an office in Suite 1,604 Kimball Building, 25 East Jackson Boulevard, Chicago, Ill. Manufacturers are requested to send catalogs and samples.

William C. Furer and William Potter have established a partnership under the firm name of Furer & Potter for the general practice of architecture and architectural engineering, with offices in the Hawaiian Trust Building, Honolulu, Hawaii.

The Hongkong Engineering & Construction Co., Ltd., Powells Building, Hongkong, China, would appreciate receiving from American manufacturers, catalogs, samples and other information relative to their manufactured products. Terra cotta catalogs are urgently needed.

It is announced that Thomas L. Sorey and Walter T. Vahlberg have formed a partnership for the general practice of architecture under the firm name of Sorey & Vahlberg, 212½ West First Street, Oklahoma City, Okla. Manufacturers' catalogs and samples are requested.

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STAIRCASE TO THE WATER GARDEN, SEVILLE, SPAIN

(From the photograph by Francis Howard)

THE AMERICAN ARCHITECT