THE AMERICAN ARCHITECT AND THE ARCHITECTURAL REVIEW

DOMESTIC ARCHITECTURE IN SPAIN, BY RALPH ADAMS CRAM, F. A. I. A. EVOLUTION OF FARM LIFE IN AMERICA, BY H. E. REEVES ❦ SHORING AND REMOVING COLUMNS ❦ DESIGNING AND FURNISHING THE ENTRANCE HALL NORTH JERSEY COUNTRY CLUB, C. C. WENDEHACK, ARCHITECT, ILLUSTRATED AND DESCRIBED ❦ PREMIATED DESIGNS, COMPETITION FOR PROVIDENCE, R. I., COURT HOUSE ❦ REVIEW OF ARCHITECTURAL PRESS, BY EGERTON SWARTWOUT, F. A. I. A.

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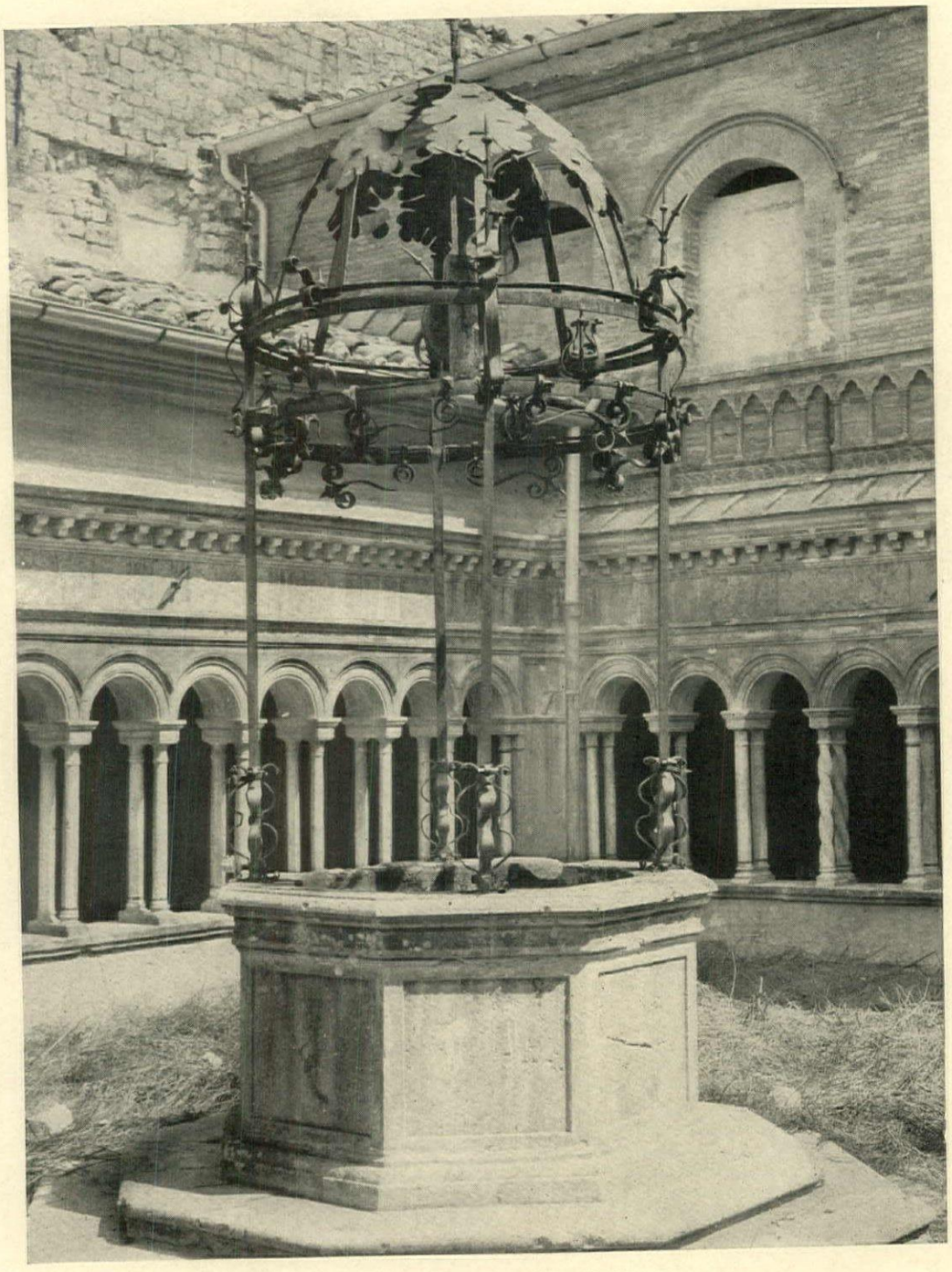

WELL HEAD, FOLIGNO, ITALY

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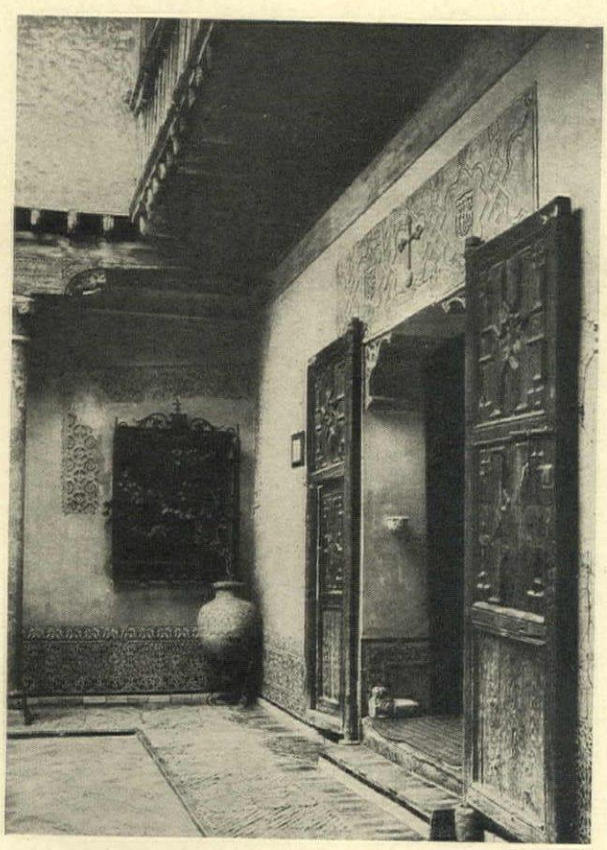
DOMESTIC ARCHITECTURE *in* SPAIN

BY RALPH ADAMS CRAM, F.A.I.A., Lit. D., LL.D.

THE inclination to hold all essential architecture to consist in the major works of Church and State, and more or less to disregard the testimony of housebuilding outside the category of castle and palace, must be firmly resisted in Spain. Here this more modest, but peculiarly personal type of work takes a high place and casts almost as much light on the genius of the Spanish people as do the great monuments of civic and ecclesiastical achievement. Half the charm and the instruction of the cities lies in the streets and squares, and towns like Cadiz, Ecija, Carmona reveal even more through their dwellings than through their churches, palaces and municipal buildings.

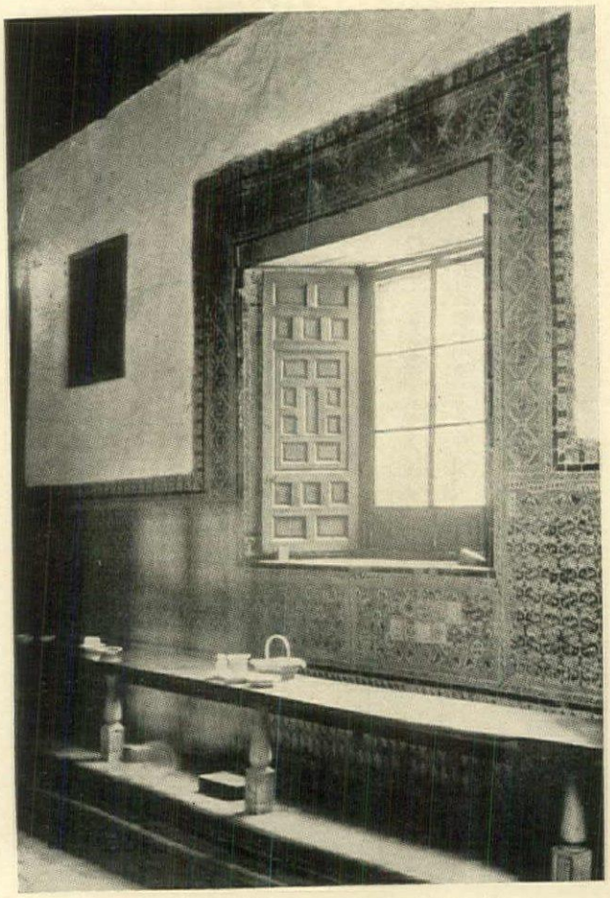


IN THE COURT OF THE CASA DEL GRECO, TOLEDO

(From "Picturesque Spain." By permission of Brentano's)

Of course most of this is very late, XVIth century at the earliest, but the real principles of Spanish artistry persisted here after they had been suppressed by Philip II and Herrera for half a century, and the voluptuousness that succeeded with Churriguerra never percolated further than the more princely type of palaces. The native asceticism and reserve of the Spanish coupled with their austere good taste prevailed in private houses of town and country down to the very end of the last century, when here as elsewhere architects began to take the place of master-builders and craftsmen and to enforce their own artificial modes as the right sort of thing to do. It is a curious fact that outside of England and the United States, modern housebuilding has been excruciatingly bad even when comparatively high standards have been attained in most monumental work. In France, for example, while really fine things were being done in civic and official architecture, domestic work, both in city and country, was just as bad and silly and pretentious as possible; almost as degraded and discouraging as similar efforts at churchbuilding. It is this sort of thing that has become prevalent in Spain during the last twenty-five years, and while little of it succeeds in matching the work of Cataluña, and particularly Barcelona, in sheer depravity, it is all pretty bad even though in a sense pathetic because of the evident effort on the part of the architects to recover something supposedly Spanish and make it live again—a task they have wholly failed to accomplish. Such beautiful old cities as Seville have had great boulevards slashed through them,

and the new façades that appear are simply lamentable; the poorest type of French and Teutonic "Art Nouveau;" though as I say, pitifully striving with tiles and metalwork and "yeseria," to accomplish a suggestion of Spanish quality.



DETAIL OF REFECTORY WINDOW IN CONVENT OF SANTA CLARA, SEVILLE

(From "Spanish Interiors and Furniture." By permission of William Helburn, Inc.)

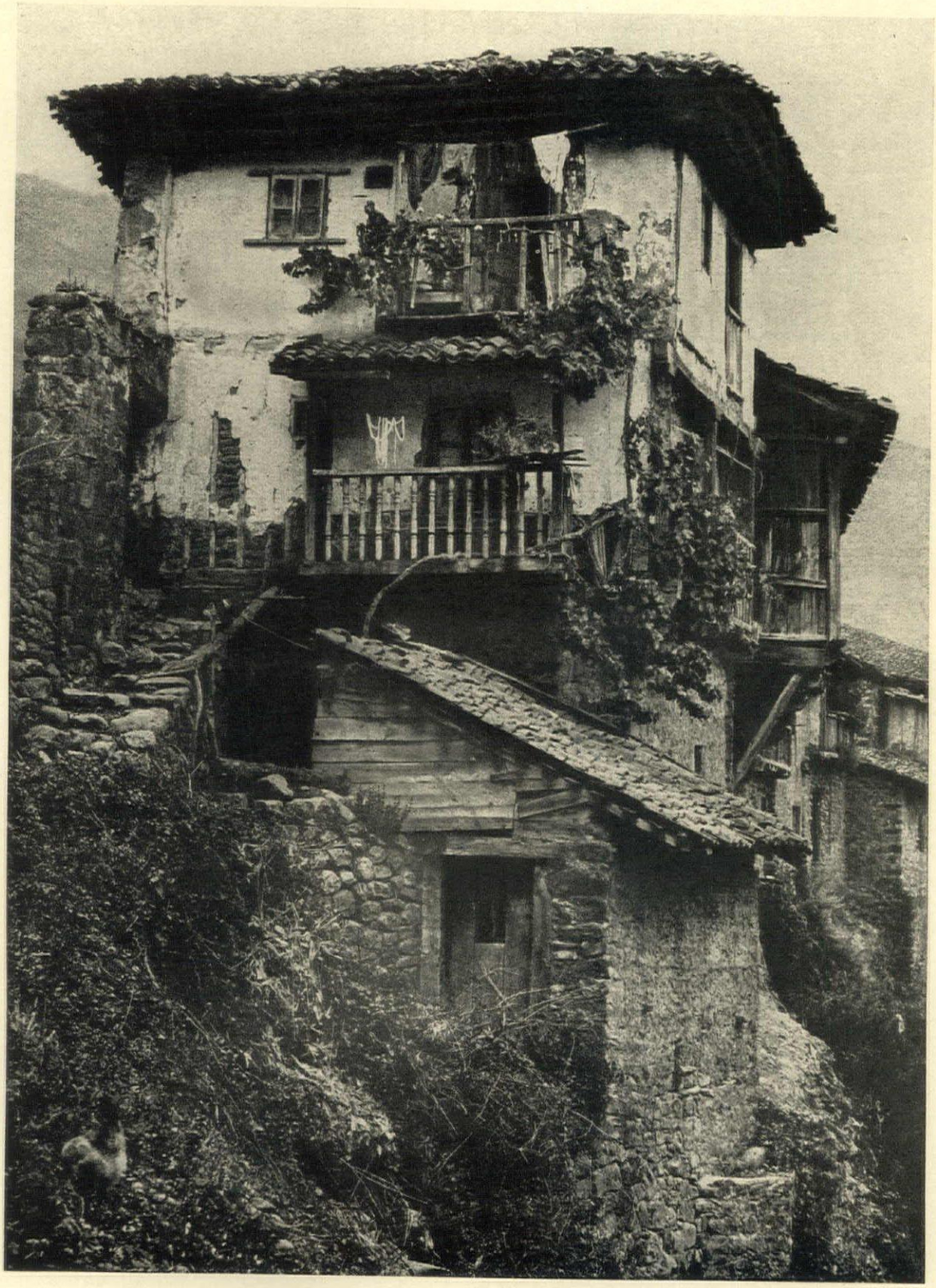
It is architects alone who have redeemed architecture in spite of the schools and the public and civilization generally, but I sometimes wonder if they have not almost as much to answer for on the other side by reason of the quite awful things they produced and established during their formative period.

Of course practically all of the exquisite art of the Moors has vanished, ruthlessly obliterated by their conquerors. A few fragments remain here and there apart from the Alhambra and the reconstructed Alcazar in Seville. There is the perfect Generalife at Granada, and a few rooms lost in rebuilt edifices. In Toledo one may stumble on the loveliest possible apartments where they are least expected—I found one princely suite in a bakery, and another used as an art club—but generally speaking this wonder of a brilliant civilization has been swept away. It must have been exceedingly lovely, judging from history and tradition and the poor few fragments we have. There were great cities miles in circuit with hundreds of thousands of people, and with mosques, baths, bazaars, universities, palaces and pleasure gardens out of the Arabian Nights. Ceilings of cedar set with ivory and mother-of-pearl, walls sheeted with splendid tiles; hangings and couches of gold-embroidered stuffs; marble courts with fountains and pools and watercourses; flowers everywhere, and orchards, gardens, groves of cypress and ilex and, in the South, palms and oranges and strange African fruits. And amidst it all a Moorish chivalry in splendid vestments and damascened armour from Toledo; music, love-making, learning and fighting; and all this while the rest of Europe was sunk in the Dark Ages before the dawn of the true Mediaevalism. All is gone now, swept entirely away, with only dim tradition to tell of the earthly paradise that once bloomed on these wind-swept highlands and in the sultry levels on the edges of the Mediterranean Sea.

Something did remain, however, besides legend and half-forgotten story, and this was the craft of the Moorish workman, for they were taken over by the Christian conquerors and their hands

ENTRANCE HALL, CASA DEL GRECO, TOLEDO

(From "Spanish Interiors and Furniture." By permission of William Helburn, Inc.)



POTES

(From "Picturesque Spain." By permission of Brentano's)

wrought into the new art something of the old. Spanish domestic architecture is shot through and through with Moorish qualities, the inheritance of the "Mudejar" work of the old craftsmen. Apart from the "purism" of Herrera, there is nothing that does not show this Moorish influence, neither Gothic nor Renaissance nor Modernism. The cool patios and courts with their hanging galleries, the plashing fountains, and little rills running through marble pavements, "artesonado" and

A COURTYARD, ARCOS DE LA FRONTERA

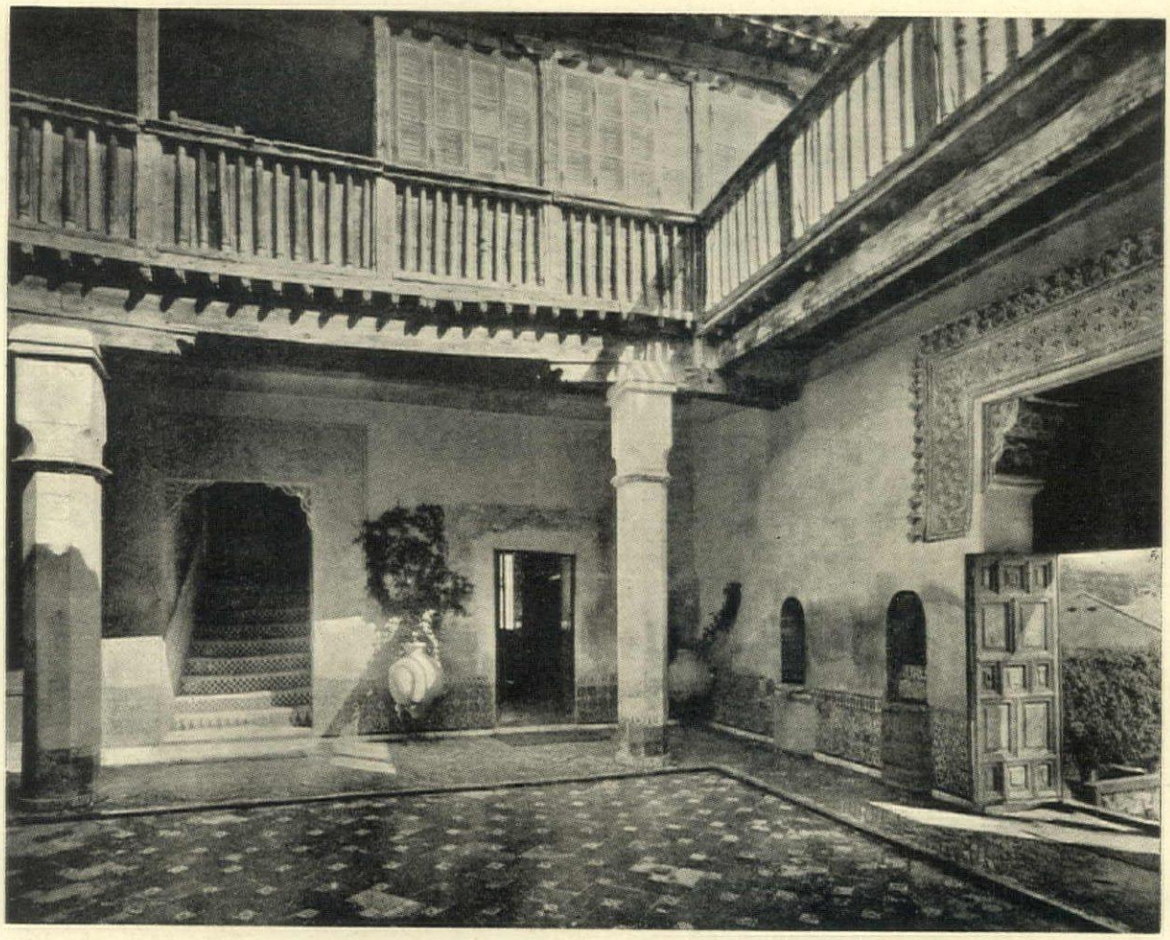
(From "Picturesque Spain." By permission of Brentano's)

honeycomb, and inlaid ceilings, lustrous tiles, carved plaster or "yeseria," wrought metalwork in balconies and "rejas" and lanterns, latticed bay-windows, intricate panelling, corbelled cornices, great spaces of plain plastered wall with a blazing accent of color or carving perfectly placed. These and a hundred other elements have been smitten into Spanish art and remain to this day vital factors in determining its character.

Apparently the imported and modified Gothic of the North had little or no influence, and even the Gothic-Renaissance of Egas made small impress outside of a few of the larger palaces. What we find from the Pyrenees to the Straits is a sort of colloquial Renaissance without pedantry or pretense, perfectly adapted to conditions, and vitalized and made beautiful by the Moorish elements above named and their Spanish derivatives. All through the South and East the patio is invariable, with the family living on the ground floor where it is cool, in Summer, and above where it is warm and sunny, in Winter. The rooms are large and lofty, with plain plastered walls or formal hangings of damask or velvet. The floors are of tile, tawny brown set with brilliant spots of glazed color, and the same tiles form the bases and sometimes the facings to the deeply embrasured windows. Doors and shutters are of the most elaborate panelling, but the point of greatest richness is the ceiling, always in wood and of a hundred different types of design, all of them superb in their originality and pictorial quality. Many are richly painted and probably all were intended to be so treated. Every room is considered, not as an architectural composition in itself, but as a frame or setting for furniture and people. The former is the most varied and beautiful I have seen in any country, structural in

design, admirable in workmanship. The "vargueño" or cabinet, an inheritance from the Moors, is almost enough to furnish a room, and it varies in style from pure Arabic to the subtle Renaissance of Berruguete. Velvet, damask, tapestry, Cordovan leather are used for upholstery, giving wonderful notes of color, and frequently great chests and the fronts of vargueños are covered with blue or scarlet velvet bound and laced with steel or brass or gilded iron.

For those who search for such models there is a plentiful supply. Seville has many of the Mudejar sort, such as the Casa de Pilatos built by the Riberas early in the XVIth century, the pseudo Moorish Royal Palace of the Alcazar and the Palace of the Duke of Alba, the Casa de Dueñas. The palaces of Madrid are more of the imported styles which became popular in the XVIIIth century, while Aranjuez contains in the Casa de Labrador some of the most exquisite pure



THE PATIO, CASA DEL GRECO, TOLEDO

RESTORATION OF A XVITH CENTURY MUDEJAR DWELLING

(From "Spanish Interiors and Furniture." By permission of William Helburn, Inc.)

The balance between plain whitewashed walls, tiled floors and splendid "artesonado" ceiling, and the strong rich furniture, always moderate in amount and ranged along the walls, is quite perfect. Indeed it is only necessary to enter a great Spanish room, to feel like a gentleman, whether one is that or not.

I have laid stress on the indigenous type of more modest Spanish house for this has more for us I imagine than the great palaces, though the manner in which such palaces are multiplying in America today would seem to argue otherwise. French Empire interiors to be found anywhere.

It is the veritably Spanish work that counts, however, and I commend this to curious architects as a notable example of how the thing should be done. It has just the right balance of simplicity and directness on the one hand, and noble richness on the other. It has grown without self-consciousness out of wholesome requirements and local conditions. It has just the right blending of tradition and modernism; it strives for no purity of style, hardly for any particular style at all, and above everything it realizes that a house

is made to live in and that it must act as a frame for furnishings and a foil for its human inhabitants.

Spanish architecture, all of it, whether religious or secular, has much to teach us, particularly at this time when the temptation is great to be led away by unnecessary wealth into too much architecture for the case in hand; where a certain pedantry and scholastic purism lead on to dead archaeology and when the human impulse to "show off" is being stimulated by so many new and powerful forces. Greece and Rome have taught us much, the Middle Ages could teach us more if we were disposed to listen. France has taught us most of all—some of it good—but I rather fancy that Spain, sympathetically known and reasonably accepted, might act as a very potent corrective of the excesses into which our other mentors have sometimes led us, and to our own undoing. In any case, one thing is sure: until the architect has seen Spain he knows only the half of architecture.

Following is a list of some books on Spain that architects will find useful:

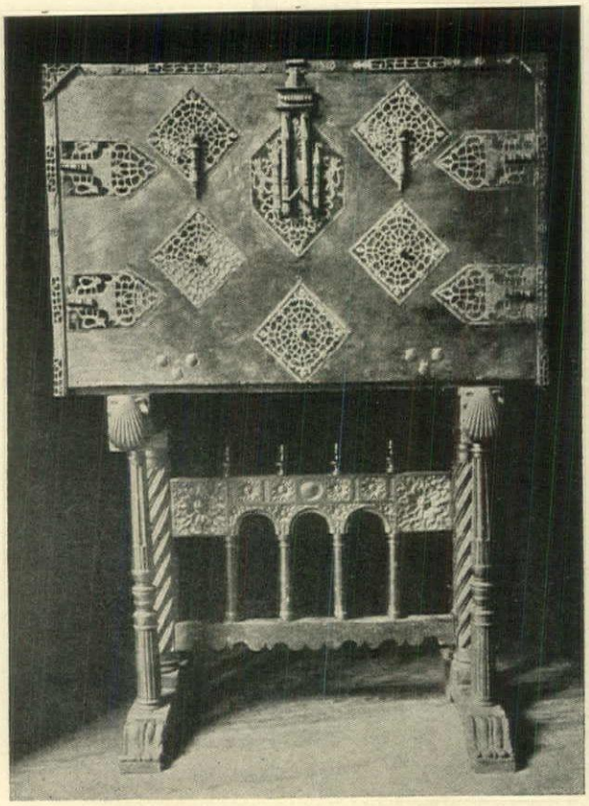
Romanesque Sculpture of the Pilgrimage Roads — Arthur Kingsley Porter
Gothic Architecture in Spain — George Edmund Street
Picturesque Spain — Kurt Hielscher
Spanish Architecture of the XVIth Century — Arthur Byne
Spanish Interiors and Furniture — Arthur Byne
Decorated Wooden Ceilings in Spain — Arthur Byne
The Renaissance Architecture of Central and Northern Spain — Austin Whittlesey

BIELSA, IN THE PYRENEES

(From "Picturesque Spain." By permission of Brentano's)

SEGOVIA

(From "Picturesque Spain." By permission of Brentano's)



A SPANISH CABINET IN A PRIVATE COLLECTION IN MADRID

(From "Spanish Interiors and Furniture." By permission of William Helburn, Inc.)

CYPRESS COURT IN THE GRANADA ALHAMBRA

(From "Picturesque Spain." By permission of Brentano's)

Architecture of Southern Spain	Austin Whittlesey
The Minor Ecclesiastical and Domestic Architecture of Southern Spain	Austin Whittlesey
Spanish Farmhouses, etc.	Winsor Soule
Materiales y Documentos de Arte Español	Mira Leroy
Spain	A. F. Calvert
Southern Spain	A. F. Calvert
The Spanish Series (12 volumes)	A. F. Calvert
The Soul of Spain	Havelock Ellis
Rosinante to the Road Again	John Dos Pasos
Idearium Español	Angel Ganivet
The Tragic Sense in Life	Miguel de Unamuno

Note—The foregoing article concludes Professor Cram's series on The Architecture of Spain.

GRANADA

The EVOLUTION *of* FARM LIFE *in* AMERICA

BY *HUBERT E. REEVES, Architect*

ABOUT twenty-five years ago there existed amongst the average farmers in this country, a deplorable condition of poverty and lack of education. When I say the "average farmer" I refer particularly to the peasant or "dirt farmer," one who tilled his own soil, cared for his own cattle, with the aid possibly of a farm hand or two.

In order properly to attribute the causes of this situation, we must acquaint ourselves with the farmer's home life and education, his social environments and the method and means employed in the performance of his daily tasks.

HOMESTEAD OF A FARMER BEFORE THE PROGRESSIVE MOVEMENT

Approaching a farm along a picturesque country road one arrives at the farmhouse, set back a bit amongst an orchard of neglected trees. Across the road looms a red barn, so arranged that the hay is unloaded at the roadside, the rear of the barn used as a cow shelter and stable. Some minor buildings, such as the piggery, hennery, wagon shed and wood shed complete the farm group and are all scattered about in haphazard fashion.

At first glance, this rural scene possesses a certain degree of charm and quaintness, for although it was typical of the farmer's homestead and its dependencies, each farm painted its own fresh picture to the visitor.

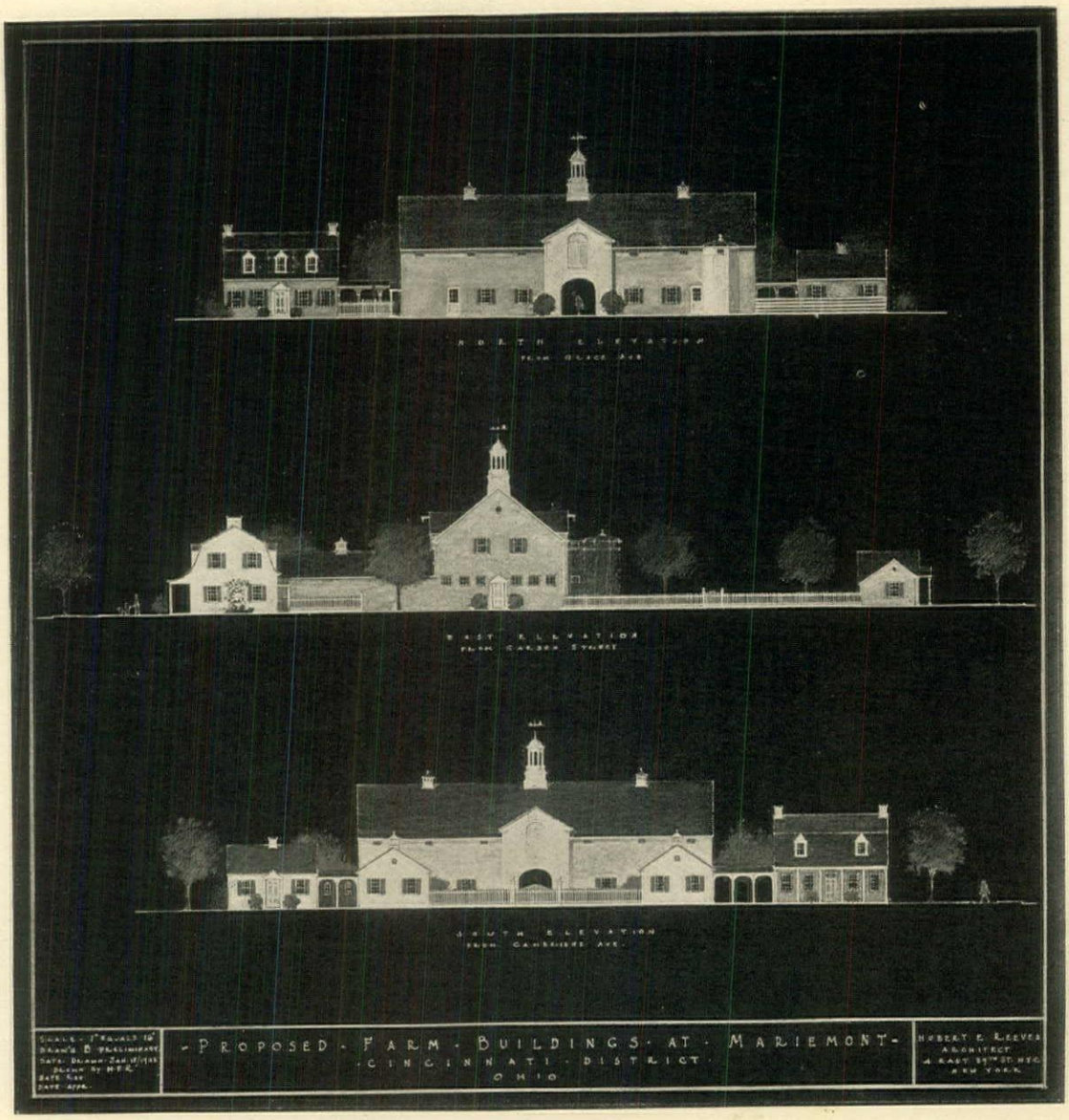
But what of the struggle from within, the attempt to make ends meet, the lack of proper education, of social life and of adequate facilities to compete with his neighbor's products? True, most of the farm was under cultivation and looked promising; but due to the poor crop of a previous season the farmer was compelled to mortgage this year's crop in order to purchase implements, seed, possibly some cattle and the necessary cash required for the farm hands' wages. Whatever interests he had were centered entirely around his farm with the exception of a necessary trip to

AN INTERESTING EXAMPLE OF A MODERN FARM GROUP DESIGNED BY ALFRED HOPKINS, ARCHITECT

the distant village or a chance chat with his neighbor. Winter finds him in the seclusion of his cottage, where, with no news of the outer world, he and his family barely exist until early Spring. His social life consists chiefly of an occasional visit to the meeting house and his church on Sunday, provided either is within reach. Badly kept highways in the countryside, inadequate schools, lack of proper sanitary and other facilities for his home, the constant exodus of dissatisfied farm labor and the worry of providing sufficiently for the needs of his family, bring us face to face with the struggle of the average peasant farmer of twenty-five years ago.

The blame must not rest entirely upon his shoulders. When one considers that any business must be profitable in order to continue in existence, we can readily appreciate the plight of the man who constantly fought against odds and was finally driven to a state where he was satisfied merely to eke out a living from his farm, with no hope of any profit to assist him in the improvement of his buildings, equipment and the proper education of his family.

The farm hand, owing to incommensurate wages and the scantiest of lodgings, was continually on the move, naturally in search of a better livelihood, and always hoping that his wanderings might eventually lead to a spot where employment would be steady, along with proportionate wages and some semblance of comfortable home life. There was no inducement whatsoever for him to remain in the employ of any one farmer for more than the crop season.



HUBERT E. REEVES, ARCHITECT

Then came a period of public improvements—schools, libraries, macadam roads, street lighting, telephones, electric current for the home, and the like. All these utilities tended to make the farm more suburban rather than rural. It not only brought the farmer in closer contact with his town, but it brought him in closer contact with the outer world in general. In a sense, he was really compelled to improve his farm in order to compete with the large commercial farmer who had realized the advantages of modern equipment and attractive surroundings for his family and help, with the result that his crops were more in demand.

The peasant farmer then discovered that although the initial cost of more modern equipment was a financial burden at the start, he was rewarded soon for this effort. His soil was cultivated more rapidly, crops received added attention in less time and the quick hauls over good roads brought him in contact with the merchants more frequently. He was unwittingly educating himself and his help; needless to say his children availed themselves of the facilities conducive to a proper education.

FARM GROUP, BAYVILLE, L. I., N. Y.

The farmer was now in a position to improve his dwelling and farm buildings, to make the help's quarters more attractive and incidentally to offer them a living wage. Distant neighbors of former days now became his friends with the result that a social and educational element developed in the community, which exists to this day.

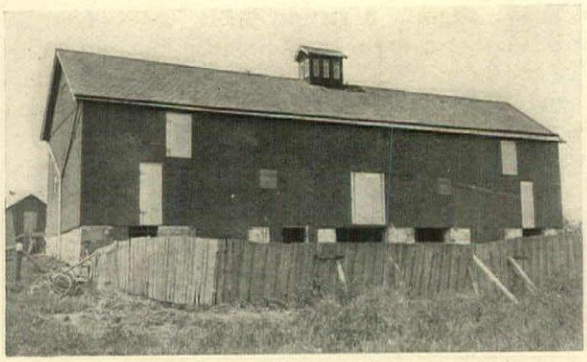
We now come to the farmer of today. His home is modern, comfortable and generally attractive, his buildings no more destroy the landscape, but are tucked away in a more secluded, desirable location and meet every requirement from a practical and sanitary standpoint. He is familiar with market quotations of produce and can transact his business in a more efficient and profitable manner. Safe in the thought that his crops and cattle are being cared for by help who are contented with their surroundings and who find that modern equipment makes their daily task much lighter and less irksome, he is now able to devote more of his time to the care and uplift of his family.

With the farmer who ships his milk to a metropolis or disposes of it locally, he is compelled by State authorities to have sanitary, well lighted and ventilated quarters for his cattle and the herdsmen must likewise keep themselves clean when attending the cattle or handling milk. These men, no doubt, have profited by strict regulations for surely they must realize it has been a step in the betterment of their life and happiness.

About a year ago, the writer was commissioned to make improvements to a farm situated fifty miles from New York City. Owing to the neglected condition of the premises, my client was able to make the purchase for a very nominal sum, but was advised beforehand by some discouraged farmers in the vicinity to the effect that the farm would not pay owing to the poor quality of soil and very doubtful crops. In the face of this outlook, however, he proceeded with the improvements to his buildings and the installation of the equipment essential to his particular product, with the result that at the end of the first year he has been able materially to reduce his initial expenditure and find a ready market for his crop. The supposedly poor qualities of soil merely required more attention and proper fertilization to produce satisfactory results.

FERME DES GROTTEAUX, NEAR TOURS, FRANCE

A PICTURESQUE TYPE OF FARM GROUP IN FRANCE



THE RED BARN, A FAMILIAR SIGHT ON THE COUNTRY ROADSIDE

In many of the suburbs adjacent to the large cities of this country we will find estates with either small or large farm groups, which are not only modern in every respect but architecturally are very attractive. Whether simple or elaborate in design, they both tend to beautify the grounds and become an added feature to a composite picture.

Accompanying this article are a few photographs which give the reader some idea of the progress of farm buildings during the period covered by this story, as well as some foreign photographs. The farms of Europe possess a certain indefinable charm and picturesqueness, leaving one with a strong impression that the toilers must certainly be contented amidst such an atmosphere. Ruskin tells us "Well Building had three conditions: Commodity, Firmness and Delight." With attractive surroundings we all can work to better advantage and realize more fully the fruits of our ambition.

A GATEWAY IN SEMUR-EN-AUXOIS, FRANCE

(From the original sketch by Samuel Chamberlain)

EDITORIAL COMMENT

WITH EACH SUCCEEDING year, the work of the American Academy in Rome becomes exceedingly more useful and fulfills more thoroughly the purposes of its organization. The practical direction of the work carried forward, and the high class of instruction that is now maintained, are the best appeals that can be put forward for support and maintenance of the Academy.

It is necessary that a more general understanding of the aims and advantages of the Academy be spread in the United States, particularly among the student element in architecture and also those who are inclined toward the arts and letters. When better knowledge is had of the rare opportunities afforded, there will be an increased interest in the Academy that will be carried into later professional life, and thus the future of this splendid institution permanently assured.

During 1923, and for the first time in the history of the Academy, a Summer session for advanced students was established and most successfully conducted. Provision was made for the maintenance of a Fellowship in landscape architecture, to be awarded once in three years. This gives permanency to a most desirable course, that in the past has precariously depended on popular subscription.

It is extremely gratifying to learn that the current debt has been eliminated and that the endowment fund substantially increased. In addition to the many contributing factors of support from this country, we are informed that a helpful sign is the substantial encouragement from the Mussolini government in the field of arts and letters in Italy. The preservation of historic monuments is proceeding more vigorously than ever before. All these activities on the part of the Italian government have a stimulating effect on conditions in Rome as affecting student life, and the highest contributory educational influence.

In short, the American Academy in Rome, after passing through many vicissitudes, would seem to be now arrived to a point where its valuable work may be carried forward without the hampering restrictions of the past. And in commenting on these satisfactory conditions, it is proper to make acknowledgment of the great value of the services of that group of earnest and fine spirited men who have seen to it that the Academy did not fail, and to the faculty that at one time and another has shown a most splendidly expressed, self-sacrificing spirit.

* * *

C. F. S. VOYSEY, Master of the Art Workers' Guild in London, in an article on some fundamental relations to art in the last issue of the *Journal of the R. I. B. A.*, asks, "Why should carvers and sculptors be content to ignore color?"

Sculptors, modellers and carvers in this country do not ignore color, if we speak of color in its truest sense. To the eye properly trained to color, form has the widest suggestiveness. The true sculptor does not need to resort to applied color to produce his effects. He suggests it. For many years there was in the Metropolitan Museum of Art a bust of a Nubian, probably the blackest of black men. It was done in *white* marble, but it suggested the Nubian color.

The early Greek sculptors did not always resort to applied color, and our own St. Gaudens and French secure in the block of white marble all the latent possibilities of color without resorting to brush and pigment. The architect in his choice of mouldings and their resultant shadows gets strong suggestion of the color he wants, and the architectural draftsman knows his cast shadowings and feels their color impulse.

"It may be said with truth," writes Mr. Voysey, "that sculpture is not complete until it is colored." We venture to assert that sculptors in this country will not concur in this statement.

In painting and in architecture we have, as it were, our color labeled so that we may know it. In sculpture color is to be found in its subtlest and most aesthetic form, and it is unfortunate that only the trained eye may detect it. But we believe it is true that the untrained eye will always *feel it* if it is properly expressed.

* * *

THE RECENT COURT ruling permitting the erection of towering apartment houses on Fifth Avenue, New York, is already affecting the hitherto exclusive character of that thoroughfare. Vincent Astor's house at Sixty-fifth Street, and the Fish dwelling at Sixty-second Street, for many years prominent landmarks on a street famous for expensive houses, have been sold. On each site apartment houses will be at once erected. Park Avenue, equally well known for its fine houses, has lost its atmosphere of exclusiveness, while Riverside Drive is now given over to apartments.

Soon the country house will replace the great city residences, and the activities of social life in New York, formerly conducted on a scale of magnificence, confined to the less spacious and impressive apartment. Great fortunes have contributed largely to our city architecture. With the passing of the city house we stand to suffer a considerable architectural loss.

NORTH JERSEY COUNTRY CLUB, PATERSON, N. J.

C. C. *WENDEHACK, Architect*

THE new house of the North Jersey Country Club, the fifth oldest golf club in the United States, is situated on a hill far back and out of sight of the main road, in the foothills of the Preakness Mountains, about half way between Paterson and Pompton.

The surrounding country is bold and rugged, which characteristic suggested the stern lines of the club house.

The interiors have been carried out to harmonize with the spirit of the location.

The exterior is constructed mainly of local fieldstone taken from the premises and varies in color from a black colored granite to a golden rust with occasional red sand stone and blue flint rock.

Certain portions of the upper stories and walls are built of frame construction with wire lath and rough cement stucco. A dark local hard burned brick is distributed throughout the stone work to obtain horizontal lines. This treatment is repeated about the windows, door jambs, buttress caps, corbels and window sills.

The chimneys are of fieldstone with brick caps, water tables and shafts. At various portions in the gables one inch slate is used for corbels, imposts, etc.

The roof is of variegated slate, ranging from ten and one-half to four and a half inch exposure with rounded valleys and irregular lines and ranges in color from golden pheasant to grays, greens, reds and black. The timber is of rough hewn cypress finished the color of natural tree bark.

Metal casements are used throughout. All doors are constructed of cypress or oak.

The exterior is very colorful, due to the stone and slate used, being further accentuated by brilliant orange sash with black frames for doors and windows. The cornice moulds and facias are finished in a rich terra cotta red.

The interiors, as indicated in the illustrations, are of a very severe architectural treatment and depend upon the color of the decoration and furnishings to give them warmth. The entrance lobby and loggia are finished in a rough mat plaster tinted in two hues Pogany blue at the base blended to golden yellow in the ceiling. The floors in these portions of the building are of heather brown tile laid on the diagonal with a black slate base.

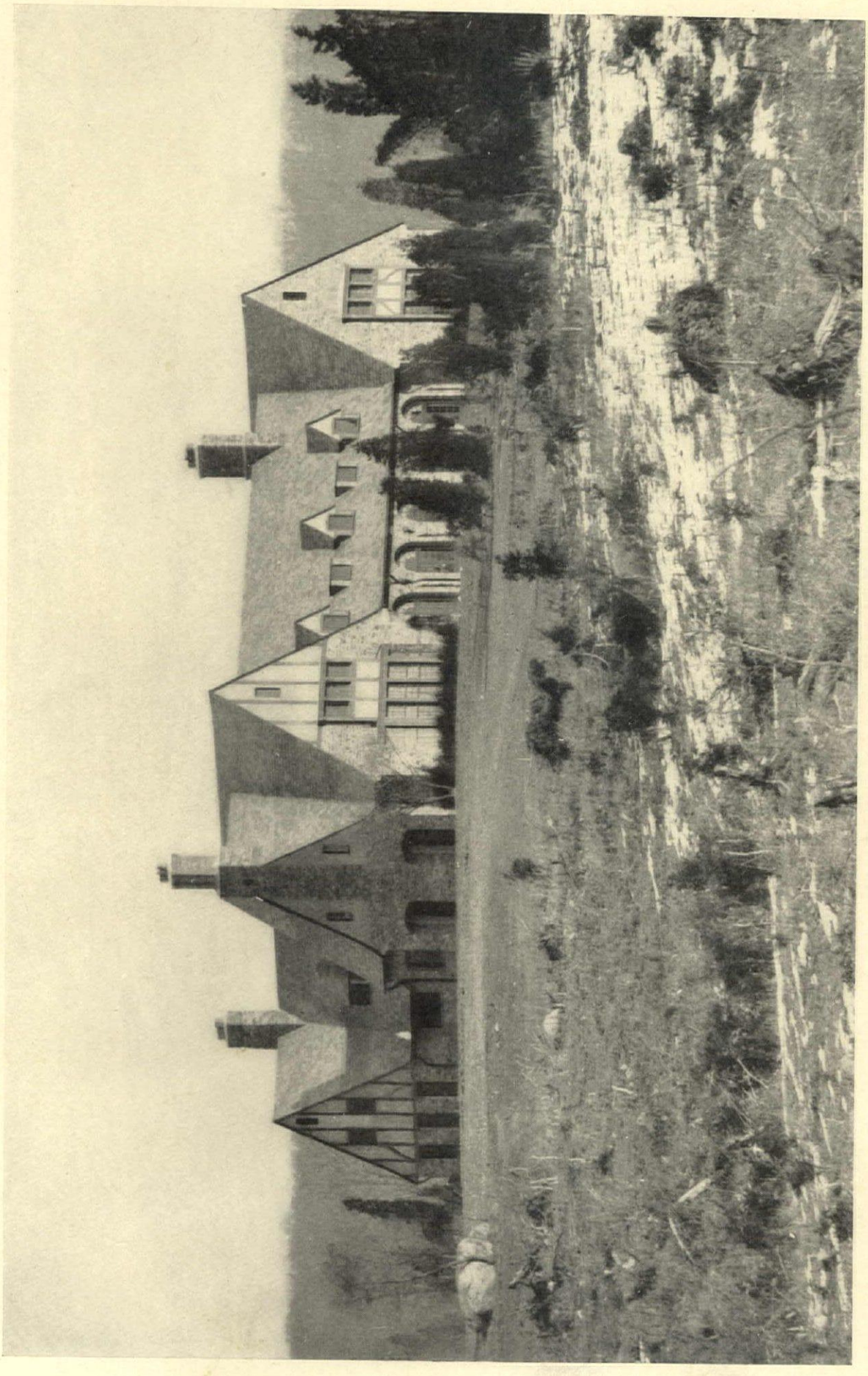
The dining room and living room are finished in sand plaster tinted in various shades of blue, red and yellow with an overglaze of warm gray. A structural beam ceiling, ornamented with low toned stencils, constitutes the only architectural feature in these rooms, with the exception of the fireplaces at each end.

The living room fireplace is built entirely of local stone selected for the color and small horizontal shape and laid in natural cement mortar. Brick is also used here for the arch and jambs. The shelf and frieze are of cast stone.

The point of interest at the other end of the long vista through the living room and dining room is found in the dining room mantel which is treated as a vertical motive. This is built of heavy wood timbers decorated in low tone stencil recalling the color on the ceiling beams. Below the timbers of the fireplace is a beaten bronze firehood supported on segmental brick arches.

The main feature of this room is the group of high casement windows at the West end. Another interesting feature is the screen treatment between the dining room and living room. The two carved antique oak screens are on rollers which permit their being moved back against the wall or removed entirely, making living room and dining room in one long hall at least a hundred feet long, for dancing, musicales or moving pictures.

The grill room is simple and serviceable, finished in rough putty colored plaster with dark brown trim. Brilliant hangings frame the casement doors opening out on the terrace, from which is an unobstructed view of the first tee.



NORTH JERSEY COUNTRY CLUB, PATERSON, N. J.

C. C. WENDEHACK, ARCHITECT

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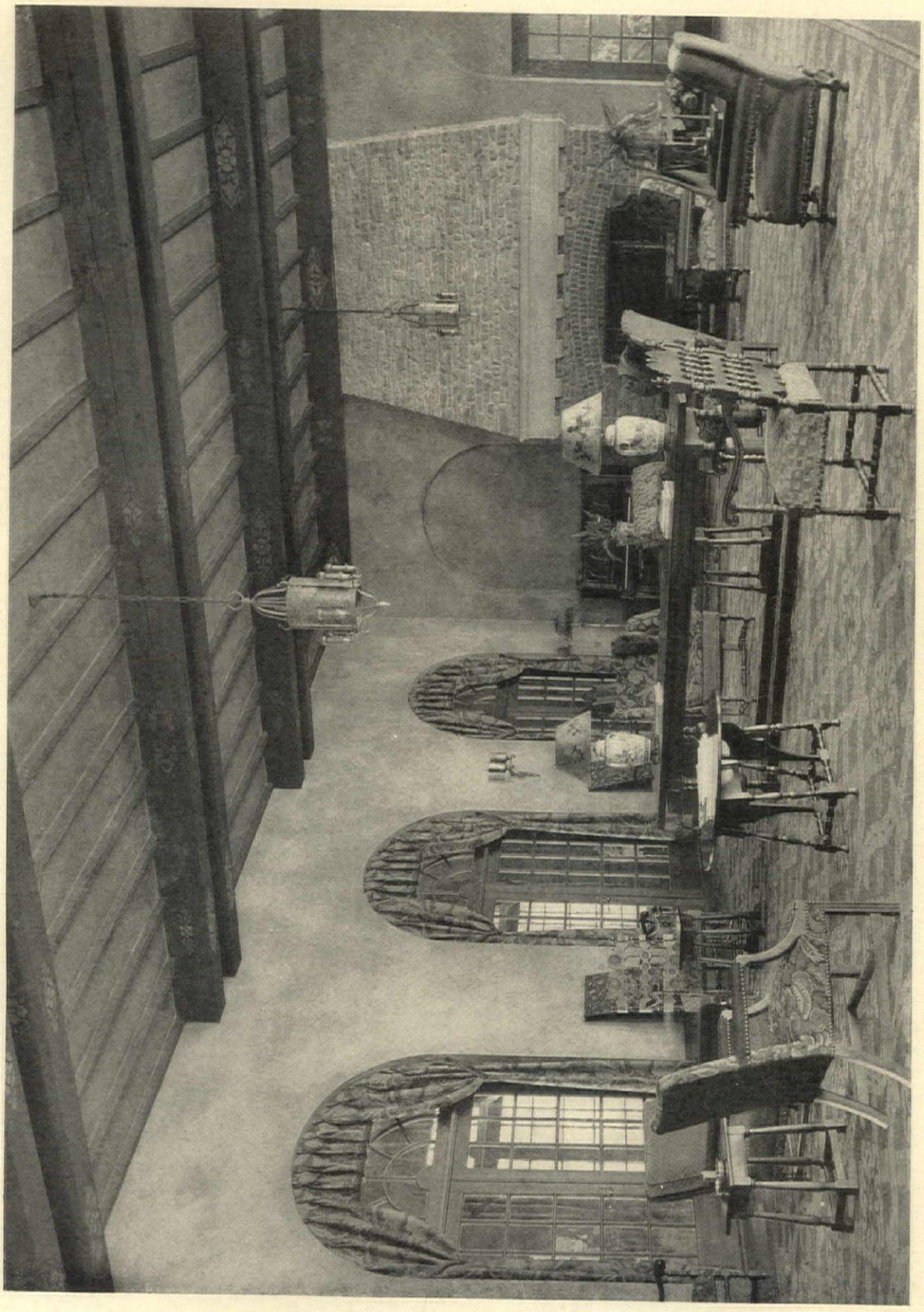
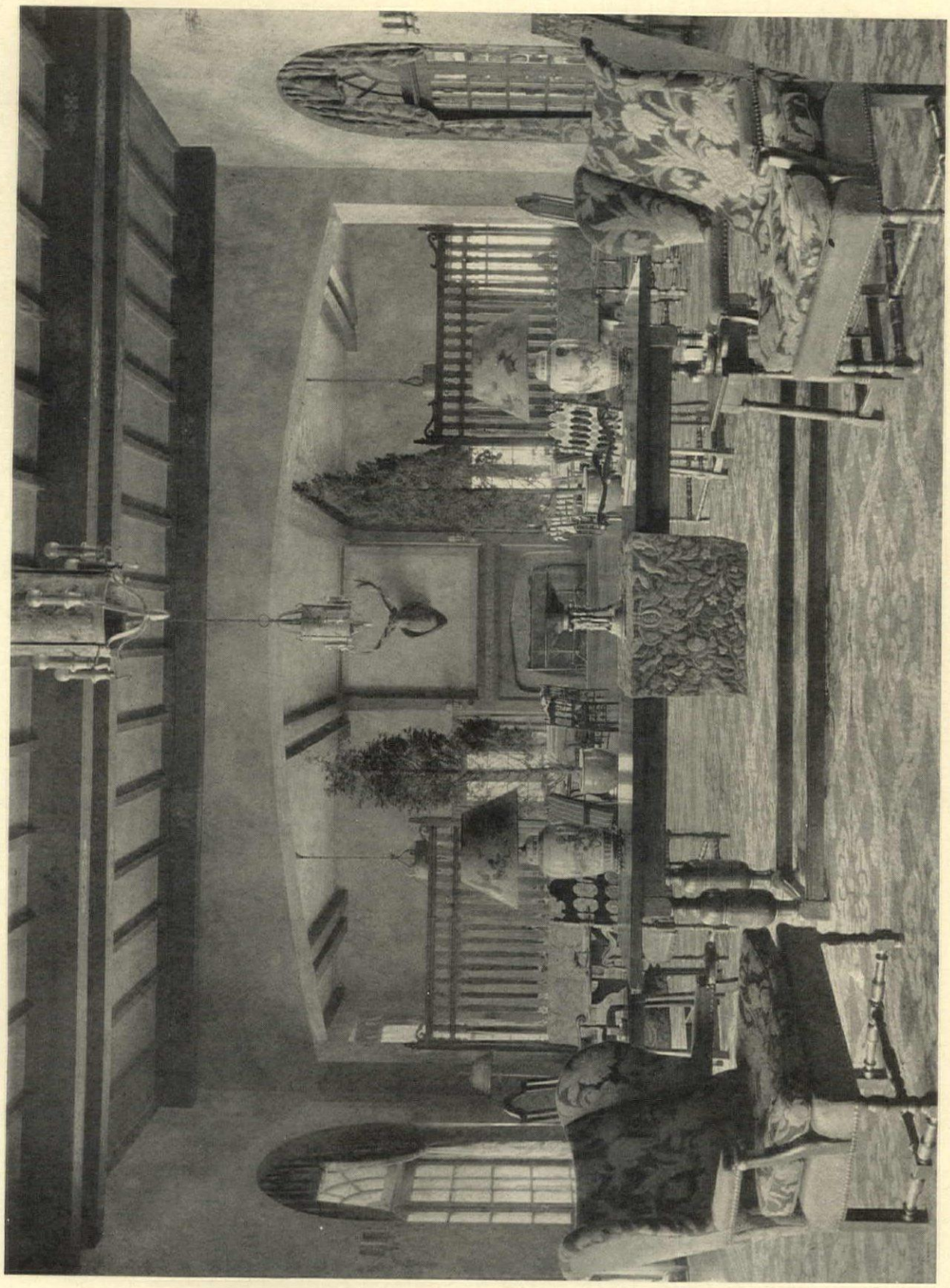
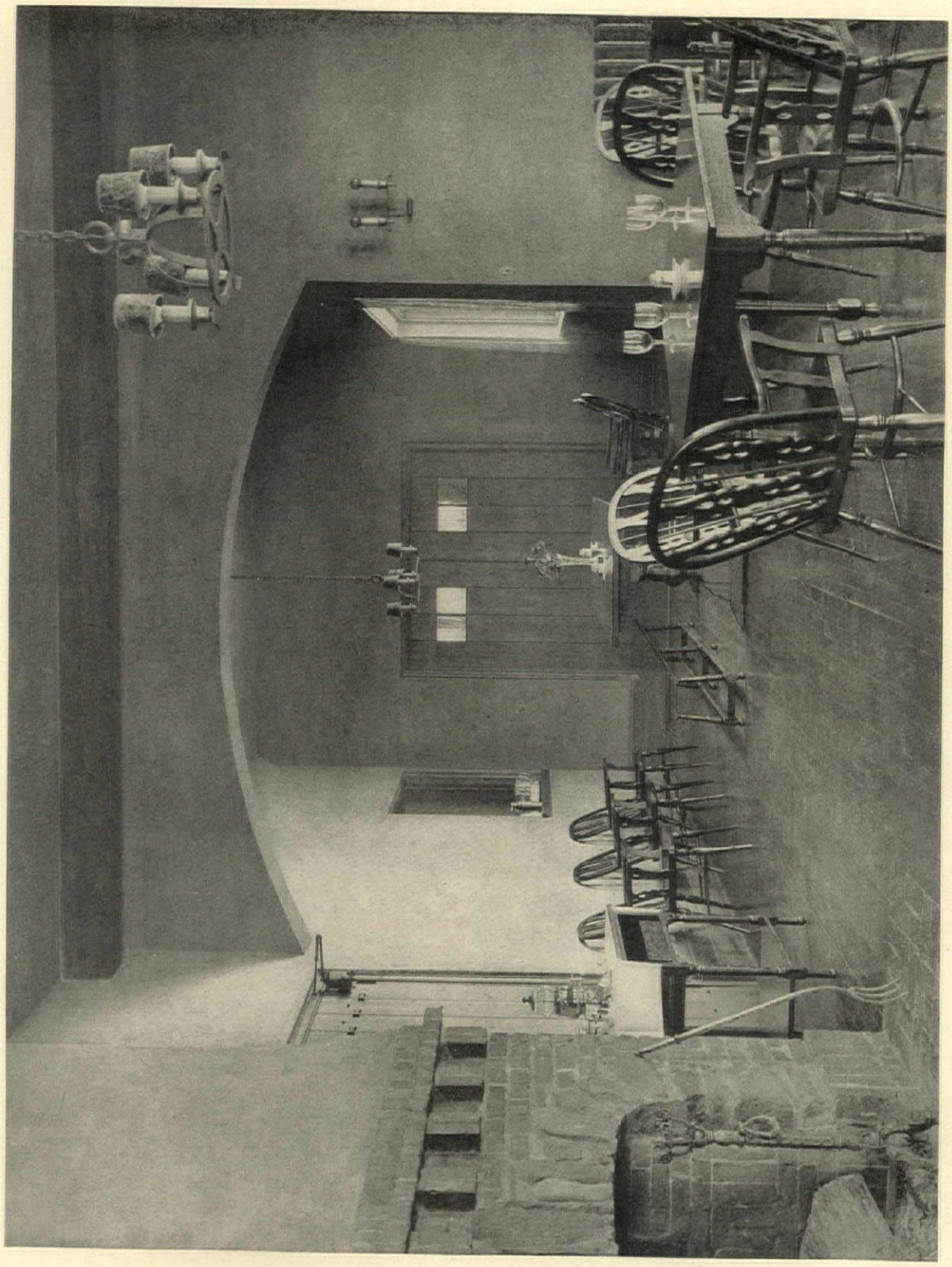


NORTH JERSEY COUNTRY CLUB, PATERSON, N. J.
C. C. WENDEHACK, ARCHITECT



NORTH JERSEY COUNTRY CLUB, PATERSON, N. J.

C. C. WENDEHACK, ARCHITECT



NORTH JERSEY COUNTRY CLUB, PATERSON, N. J.
C. C. WENDEHACK, ARCHITECT

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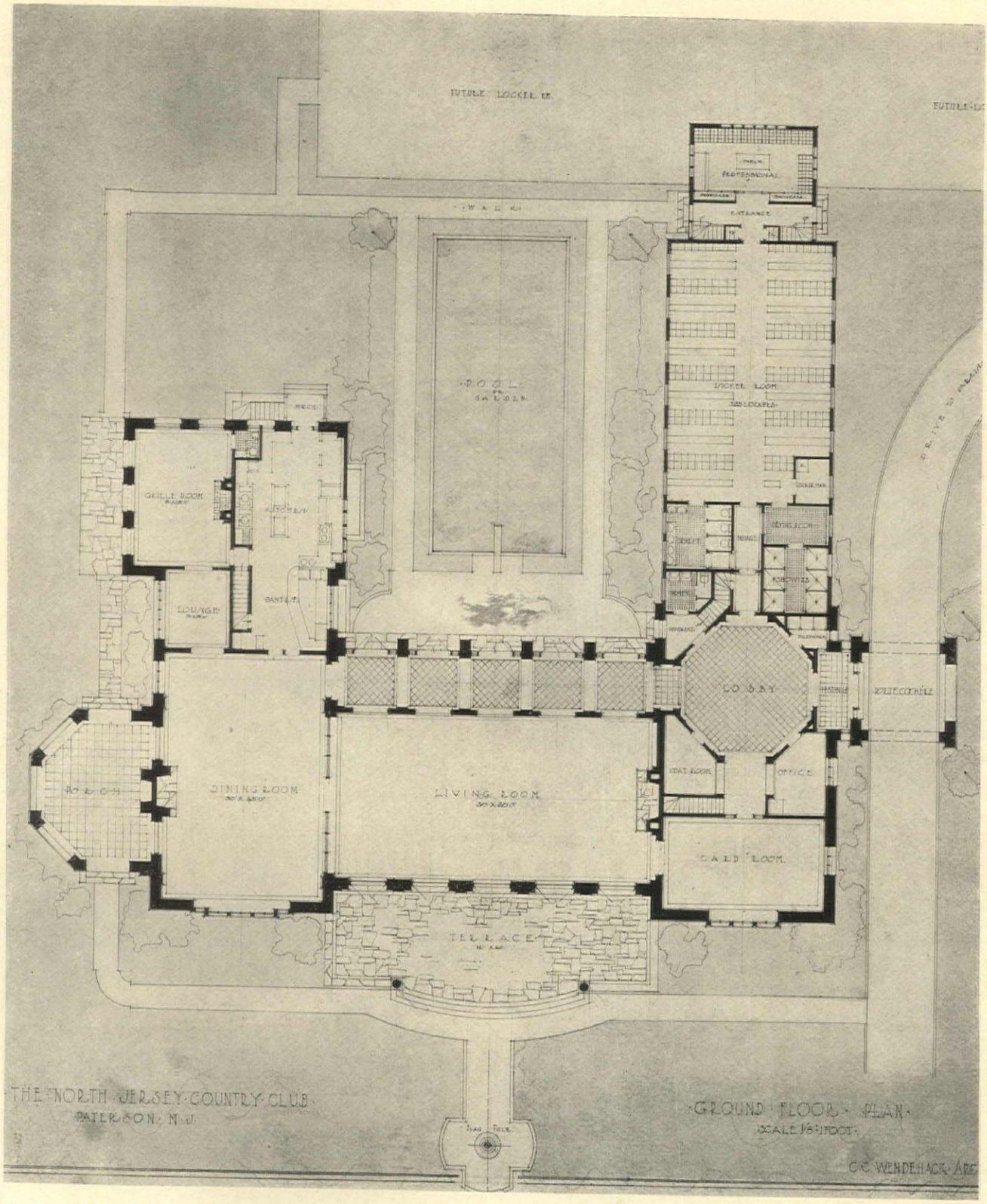


NORTH JERSEY COUNTRY CLUB, PATERSON, N. J.

C. C. WENDEHACK, ARCHITECT

REVIEW *of* RECENT ARCHITECTURAL MAGAZINES

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

IN these vernal days, in these changeable, uncertain days, when most of us are in the throes of decision as to the purchase of Summer clothes or more coal, and when the city's streets are filled with the chattering, not of birds, but of compressed air riveters; in these Spring days the young architect's fancy lightly turns to thoughts of medals, and not only the young architect's but the old architect's as well. Between the realization of the fancies of these two there is this vital difference, the young architect's medals are the hastily scrawled and often undecipherable legends on the corner of his drawing, while the older architect receives a real medal which is hung around his neck with much pomp and ceremony, that is, it is if the medal man has delivered it on time, which he generally does not; in point of fact there have been occasions, we understand, in which the blushing recipient has stammeringly acknowledged his appreciation of a medal actually belonging to some one else which has been borrowed for the occasion, and has received his own six months later. Still, the honor was there and the honor's the thing, and the medal itself is a detail, and really there is not so much actual difference between the realizations of these fancies. If the young architect's medal is not a real medal but only a scribbled word, more often than not the older architect's medal is not a real gold medal, but only a replica in plate. But whether it is a word written in red pencil, or a "from gold" medal or a real gold one, the honor is eagerly sought and the possession cherished, and it is never refused; that is, it seldom is. There have been occasions when pique at its delay, or at its prior award to unworthy recipients or some other reason which seems vital to the one to whom it is offered, but childish to everyone else, there have been occasions when the honor was declined and sometimes it has been spurned. There is a case now in England. The gold medal, a real gold medal in this case, of the Royal Institute of British Architects, has been refused by Professor Lethaby for no particular reasons that appear. It is said that the Professor does not approve of medals, that he is too modest to accept one, that he is out of sympathy with the Institute or with the Government or with something; none of which is probably the real reason. Not knowing the real reason it is difficult to criticize his action, but unless the reason is a very good one indeed and is publicly expressed, the refusal seems an ungracious act, and a reflection not only on the Royal Institute but upon all past recipients. We learn from *The Architects' Journal,* London, March 12, that just fifty years ago the same medal was refused by Ruskin, but, as might be expected, this obstinate old gentleman gave his reasons and gave them with great force. "The first," says the *Journal,* "referred to the neglected condition of the Tomb of Cardinal Brancaccio at Naples; the second to the conversion of the church of San Miniato, Florence, into a cemetery; the third for the destructive restoration of the chapel of Santa Maria della Spina, Pisa; and the fourth —the only English instance cited—the recklessness with which the ruins of Furness Abbey had been approached by the railway engineers. In conversation with Sir Gilbert Scott, who had used his best efforts to get the obdurate old man to accept the medal, Ruskin said he considered that the members of the Institute 'were assuredly answerable' for this state of things, 'at least in England,' and that it was no time for them

From "The Architectural Record"

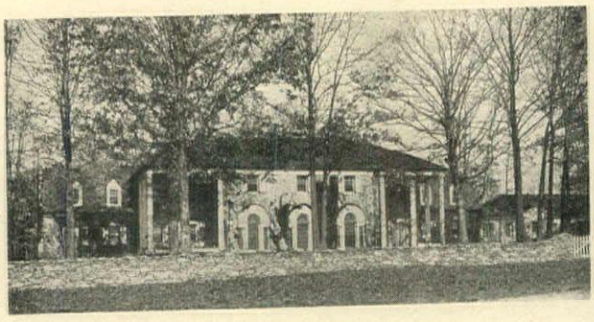
APPROACH FRONT
HOUSE OF MRS. CLYDE CARR, FOREST LAKE, ILL.
H. T. LINDEBERG, ARCHITECT

to play at adjudging medals to each other."

Now, it may be that following Ruskinian precedent Professor Lethaby does not approve of Ramsay MacDonald or of the war, or of the Daugherty investigation, for all of which the Royal Institute was as much to blame as it was for the hideous betrayals of trust fifty years ago.

We also learn from the same journal that the Royal Institute of British Architects has, at a late meeting, rescinded its resolution to adopt an academic dress in spite of the pathetic appeals of those members who had already purchased their costumes and despite an impassioned plea by a member who reminded the meeting "it" (the academic dress) "is worn by the Tonic Sol-Fa Society and other bodies." While we do not remember exactly what the academic dress was, we are inclined to regret this hasty action. It may be that the designs chosen were too somber and in a pageant or parade would be eclipsed by the Oriental gorgeousness of the Tonic Sol-Fa Society

From "The Architectural Forum"

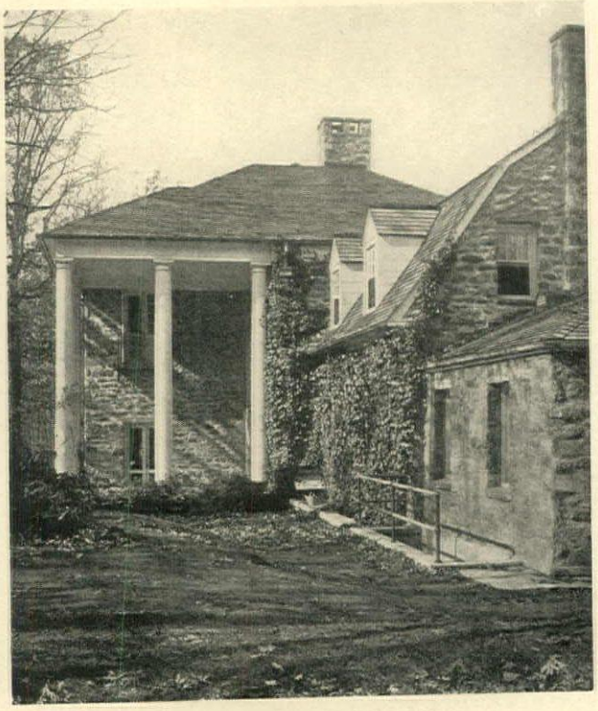


"GOODESTONE," HOUSE AT MIDDLEBURG, VA.
GOODWIN, BULLARD & WOOLSEY, ARCHITECTS

and by the dazzling display of numerous organizations which are rather contemptuously lumped above by *The Architects' Journal* as "other bodies," but surely architects, if they are designers at all should be able easily to outdo their lay competitors. They might hold a competition for it. We also regret this decision because of the depressing effect it may have on those now in control of The American Institute of Architects, who with their well known zeal for things modern have no doubt accepted designs for some brilliant and inexpensive costume which would lend a welcome touch of color to the next convention. The delegates from the different chapters would undoubtedly have costumes appropriate to their LOCALITY and HUMILITY; for the New York Chapter we might suggest flowing white robes and a stuffed dove portraying Innocence, the delegation led by a distinguished figure who may be induced to return to the fold. We welcome suggestions from other chapters.

In all the English papers, but particularly in the *Journal of the Royal Institute of British Architects,* March 8, there are very full accounts of a paper read at the Manchester University by A. E. Richardson, Professor of Architecture in the University of London, on the Modern Movement in Architecture. This paper is printed in full in the *Journal* and digests of it are given in other papers, and we have read them all carefully because we were anxious to know just what this movement was, but frankly the more we read the less we knew about it. There are a great many words in it and it seems well enough expressed but we must confess that for intelligibility it ranks with some speeches we have heard in the Senate. We are told that this movement is *not* Bolshevic; so far so good, but there are many

From "The Architectural Forum"



"GOODESTONE," HOUSE AT MIDDLEBURG, VA.
GOODWIN, BULLARD & WOOLSEY, ARCHITECTS

now in Russia who say the same of their Government. We are told repeatedly that "the plan is structure and the structure plan." This sounds well but what does it mean? We admit that when we look at the plan of a Greek temple, of a Roman bath or of a Gothic cathedral, we can form some conception of the structure, but he who looks at a modern steel layout in plan can by no stretch of the imagination form any conception of the ultimate structure, of its height or shape; and the paper, we understand from the title, refers to modern architecture. We fully agree with Professor Richardson that in the history of architecture the plan of a great building always, or

nearly always, did express its structure, but that was in the good old days of masonry construction. Then the design and the construction were one; they had to be or the building could not be built. Nowadays with the aid of steel and reinforced concrete anything can be built, and the architecture that encloses the steel frame is only a veneer. The modernists say, and we suppose Professor Richardson would say, this condition is wrong; it is just what we are struggling against, etc., etc. We, too, think it is wrong, but what are you going to do about it? Modern construction has come to stay until something better is discovered, and we must either attempt to produce beautiful buildings, using forms which are in their origin generally the result of structural masonry conditions or we must give up the beauty of architecture and devote ourselves entirely to the utilitarian.

There has been a good deal written and a good many loose statements made, chiefly by laymen, of the possibilities of steel and reinforced concrete, or ferro concrete which sounds a little more mysterious to the uninformed, but what architecturally satisfying structure has been built of these materials frankly expressed? It may be done, anything is possible nowadays, but certainly it never has been, and in our poor opinion the odds are about one million to one against it. And, speaking of plan, even in the old days of masonry it is surprising to find that the plan of the Treasury Building in Washington is almost identical with the plan of the State War and Navy Building which balances it, and yet look at the structures.

We cannot leave the English magazines without mention of Fiske Kimball's article in *The Architectural Review,* London, for March, entitled Wren: Some of His Sources, in which Professor Kimball shows by the deadly parallel of photographic examples that there is a strong probability that Wren took much of his inspiration from abroad, chiefly from Italy. There is nothing absolutely new in all this, but it is expressed here in a simple and readable and authoritative manner with excellent illustrations. In his foreword Professor Kimball says, "For the sake of those who condemn all criticism of Wren's genius, it should be said here that the following article is in no sense a depreciation of Wren, but seeks to place him as a link in the evolutionary chain rather than as the unique phenomenon which he is often made out to be. Wren's greatness relies on no one attribute, but equally with his originality on his large sense of scale and form."

There will be many doubtless who will violently disagree with the article, but the application of a little common-sense will easily show the probability of it. Wren did not take up architecture in his youth; he tried his hand at other things first, and he drifted into it as many others did, as an amateur would. He had visited the Continent, and what is more natural than his adoption of the Baroque style he found the vogue there, and what is more natural than that for his larger and more monumental work he would adapt motives that he found there? All design is adaptation to a great extent; sometimes deliberate, sometimes unconscious. It is not copying; it is the occasional use of motives the idea for which someone else has taken from the work of some previous designer. No architect, except in a story book, has ever with a vacant mind and a clean sheet of paper evolved from his own inner consciousness a perfectly original building.

But we find we are wrong here. We have just read in *The Architects' Journal,* London, March 5, an article on the life and work of a Central European architect who has headed a new movement similar to that longed for by Professor Richardson. We quote from the *Journal* as follows:

"Grigori Ptuch (pronounced Hoich) is one of the few architects of the present day whose name will be remembered by posterity. Though he has built little, his theoretical work, especially in his lecture before the Mongothtrian Arkitetturklub on The Ecstatic Ego in Architecture, commands respect from all who have at heart the welfare of the 'Mother of all the Arts.'

"Ptuch was born in 1871, in the remote hamlet of Plink on the banks of the Plonk, in the Government of Plunk, which is the largest (and only) division of the Mongothtrian Empire.

"His ancestry, which is said to extend back as far as Adam, though many intermediate links are missing, is unremarkable. His grandfather was a dumb charcoal-burner, who drank, and his grandmother, who was deaf, was the youngest daughter of a dwarf at the Imperial court. His father, who was both deaf and dumb, was a well known breeder of marmuks in his humble way.

"There can be no doubt that the little Grigori was greatly humored and indulged by his doting parents, for at the early age of seven he distinguished himself by hurling a small but powerful bomb, which wiped out a passing district Samovar and his official bodyguard of three Nubian Droshkys. For this wanton act he was sentenced to three years in the Cascara Mines of the Sagrada Valley, during which time he spent his evenings in the study of classic architecture from books which his old nurse, Glinka, bought for him out of her scanty earnings as a dancer at the Municipal Ballet. On the eve of his release he kicked to death a warder who disagreed with him over the method of lighting Greek temples, and was sentenced to be hung. Happily for architecture, the rope broke three times, and his sentence was reduced to seven years' study of Byzantine needlework. He was released after ten years, but, thanks to his iron constitution, he escaped with no worse disability than a chronic stiff neck. Since then he has never looked behind.

"Four days after his release he arrived at Fittelborg, the capital city of Mongothtria, to take up the position of Arkitettur-Doktor at the Imperial Gymnastik-Teknik, which had been procured for him through the influence of the faithful Glinka. Success came to him quickly, for within the year he won the Imperial competition for 'A Small Lobby to a Sentry Box.' His design was an eminently architectonic essay which thoroughly satisfied that delight in ardent plasticity, which is one of the most pleasing traits of Mongothtrian character, and, had it been erected, would have proved conclusively that 'hundreds and thousands' relieved by quicklime painted to imitate congealed blood, are the building materials of the future.

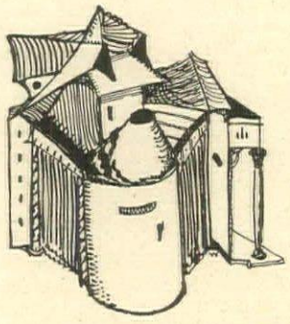
"Since that first memorable success he has designed up-

wards of three buildings, including a combined Backgammon Room and Halma Hall and a Perambulator Garage with potting shed over for the Imperial Palace of Sans Souci; unhappily, none of these has been erected, for various reasons which, to avoid prolixity, we need not discuss.

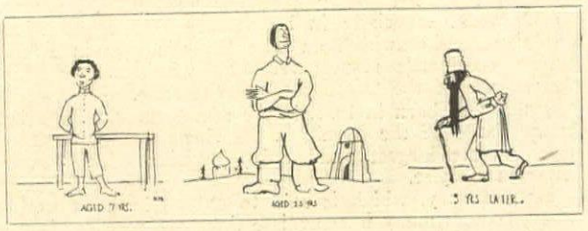
"Ptuch has no truck with traditional architecture. Ungarnished with the 'accretif triepmassen' (his own term) of thirty centuries of historic ornament, his designs stand forth chaste, cosmic, and compelling as an elephant on an iceberg. He goes direct to Nature for his inspiration.

"In conclusion I will quote from the Emperor's speech upon the occasion of the opening of a new ropewalk at his secret naval base; he said: 'Those who doubt the greatness of Grigori Ptuch are those whose architectonic ego has been stunted by the continued practice of architecture, for it is only the true cognoscenti, the men who have never attempted to paint, draw, write, sing, dance or speak, who are sufficiently receptive to understand the elemental virility, the cosmic universality, and the truth-from-out-the-slough-groping forcefulness of our Grigori Ptuch."—FELIX.

From "The Architects' Journal," London



STUDY FOR A NATIONAL THEATRE BY GRIGORI PTUCH



GRIGORI PTUCH—THE MAN AND HIS WORK

We would also like to print entire an article by Karshish, but we will save it for another time when we need five hundred words or so to fill out our review, and will turn to the American magazines.

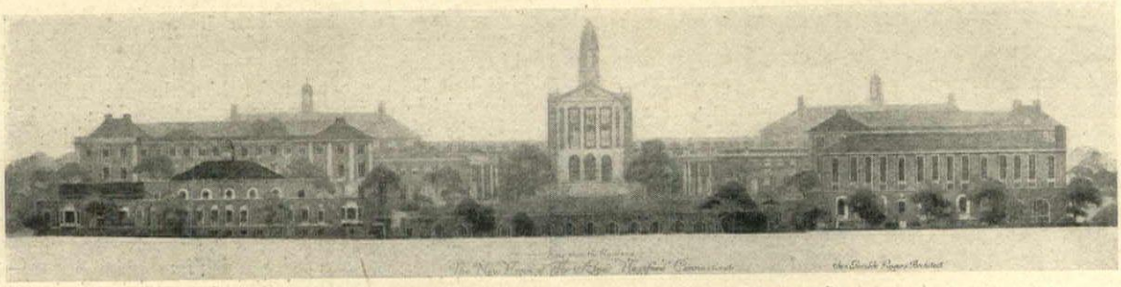
Architecture, for April, has some good photographs of the Shelton Club Hotel, Arthur Loomis Harmon, architect. The exterior of the Shelton is extremely good, very simple, economically treated and of interesting detail and texture. It masses well even from the rear. Mr. Harmon is to be congratulated. *The Architectural Forum* for March shows the Union Station at Toronto by Ross and MacDonald and Hugh G. Jones, architects, John M. Lyle, associate architect. With such an array of talent the station should be good, and it is. There is always bound to be a conflict when a large order is contrasted with a plain wall face punched with windows, but the Toronto station will compare favorably with any of the great stations in this country.

Also, in this issue is a house at Middleburg, Va., "Goodestone," by Goodwin, Bullard and Woolsey, architects, which is remarkably well done, and which should have been awarded the medal at the recent exhibition of the Architectural League. There have been medals awarded several times in the last few years to domestic work not nearly as good as this, and this firm or members of it have done much other work that has charm and distinction.

The Architectural Record for April features the domestic work of Harrie T. Lindeberg. Mr. Lindeberg's work is so well known and so widely admired that comment here is unnecessary. We have always regretted that he has not done more monumental work, for his peculiar ability in handling the picturesque would undoubtedly enable him to give a freedom and charm to monumental work which it generally lacks.

The Architect for April shows a very elaborate and good presentation of a group of buildings for the Aetna Life Insurance Co. in Hartford by James Gamble Rogers. This is one of the most encouraging commercial developments that has taken place in recent years, encouraging because it shows that a great corporation can recognize the commercial value of good architecture, and can see the futility of building a twenty story building in a city like Hartford. Mr. Rogers' layout is good and when built cannot help being a great architectural success. In fact all the April numbers of our own magazines are so good that it is difficult not to mention all their contents in detail. Let us hope they will be widely reproduced abroad.

From "The Architect," New York



THE NEW HOME OF THE AETNA, HARTFORD, CONN.
JAMES GAMBLE ROGERS, ARCHITECT

BEAUX-ARTS INSTITUTE *of* DESIGN

ACTING DIRECTOR OF THE INSTITUTE—WHITNEY WARREN
ARCHITECTURE—RAYMOND M. HOOD, DIRECTOR
SCULPTURE—EDWARD FIELD SANFORD, JR., DIRECTOR INTERIOR DECORATION—FRANCIS H. LENYGON, DIRECTOR
MURAL PAINTING—ERNEST C. PEIXOTTO, DIRECTOR

JUDGMENT OF FEBRUARY 19, 1924

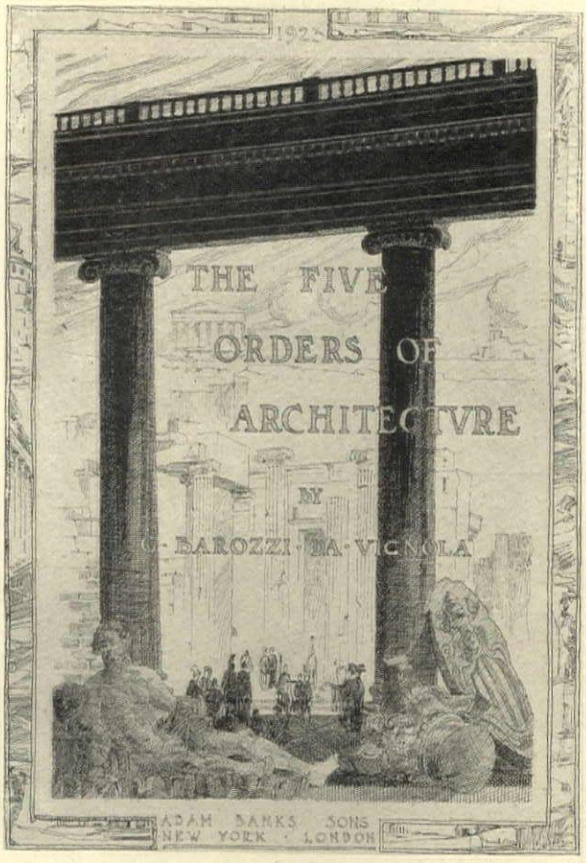
CLASS "A"—III PROJET

"A SHOPPING CENTER"

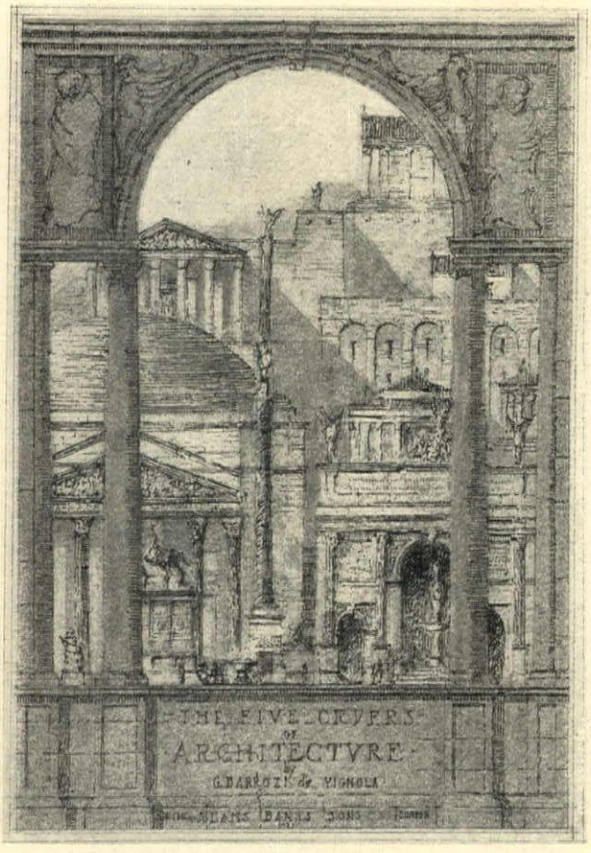
On a city block 200 feet by 300 feet with the more important streets on the narrow sides, a syndicate proposes to erect a building for the accommodation of a great many stores and shops of varied size and importance. In order to provide the necessary display space on all floors there are to be one or more great arcades the height of the building and passing through from street to street. These arcades are to be 50 feet wide, with galleries on each side on the upper floors projecting 10 feet into them, from which access will be had to the various stores. The arcades should be covered with roofs of glass and may be open entirely or in part to the streets to provide air and ventilation.

It is important to the success of the enterprise that adequate access to the various galleries be provided by stairs and elevators and that the stores themselves should be able to attract customers from the main floor of the arcade.

There will be besides the ground floor, which is 20 feet high, 6 other floors, all 17 feet high (to allow for mezzanines), all measured from floor to floor. The roof, pent houses and so forth, may project above this limit.



J. E. JACKSON "T" SQUARE CLUB, PHILA.
FIRST MENTION



S. C. HAIGHT YALE UNIV.
FIRST MENTION

CLASS "B"—III ESQUISSE-ESQUISSE—A FRONTISPIECE FOR A BOOK ON ARCHITECTURE
STUDENT WORK, BEAUX-ARTS INSTITUTE OF DESIGN

CLASS "A"—III ESQUISSE-ESQUISSE

"A MONUMENTAL FOUNTAIN"

A reservoir is located in a city park and against its wall it is proposed to erect a monumental fountain. Before the fountain will be an open plaza, whence the play of the fountain's waters may be seen to advantage. Balustrades, seats and statues adorn the plaza. The height of the reservoir wall is 50′-0″ and the greatest width of the fountain proper shall not exceed 50′-0″.

CLASS "B"—III ESQUISSE-ESQUISSE

"A FRONTISPIECE FOR A BOOK ON ARCHITECTURE"

Early editions of Vignola had frontispieces very beautifully designed and engraved. An American publisher who is preparing a fine modern edition will reproduce his title page in photogravure. It will have the following lettering on it:

"The Five Orders of Architecture by G. Barozzi da Vignola. Adam Banks Sons, New York, London, 1923."

That the sheet should be beautifully composed is essential. The drawing should be designed for reproduction at the same scale.

CLASS "A" AND "B" ARCHAEOLOGY—III PROJET

"THE PORCH OF A ROMANESQUE CHURCH"

At the time when Burgundy was at the height of its power, there grew up in the middle and Eastern parts of France a number of great monasteries which became very rich and powerful. These monasteries were of the Cluniac order. At each one, a great monastic church was built and while almost all of these monasteries have disappeared in the course of time, several of the massive churches remain to show the power and splendor of their builders.

At this time, the chief characteristic of building was one of massiveness, combined with occasional isolated spots of great richness. Carving was concentrated in the capitals of the columns, and in the wall arches and tympana of the doorways. Foliage, animals, human beings and rich rinceaux were used, although sparingly, and concentrated at the doorways and capitals.

The porch called for in this problem consists of three bays. It forms a sort of narthex to the church, where the population of the neighborhood gather before being admitted to the services. It faces a large open space surrounded by the principal buildings of the small village in which it stands. The elevation called for requires only one story, consisting of the three bays above mentioned, 75'-0" in length over all, and 35'-0" high. Each of the openings or bays may be treated with engaged columns or piers. It is to be remembered that the porch forms the ground floor of the great square tower attached to the façade of the church, but it is not required to show more than the first or ground floor colonnade of this tower.

Porches of this type on various scales are to be found at Autun, St. Benoit sur Loire, Vezelay, and The Collegiate Church at Loches.

JURY OF AWARDS:—H. O. Milliken, J. H. Freedlander, E. S. Hewitt, W. E. Shepherd, Jr., W. Warren F. A. Godley, W. D. Blair, F. C. Farley, and C. Grapin.

NUMBER OF DRAWINGS SUBMITTED:—11.

AWARDS:—

SECOND MEDAL:—A. Marshall and G. F. Trapp, Columbia University, N. Y. C.; R. C. Danis, Catholic University, Wash., D. C.; F. J. Schlosser, John Huntington Poly. Inst., Cleveland; V. L. Annis, University of Pennsylvania, Phila.

MENTION:—D. D. Streeter, Columbia University, N. Y. C.; L. A. Balicki, John Huntington Poly. Inst., Cleveland; W. G. Nicola, Ohio State University, Columbus; K. A. Marvin, Syracuse University, Syracuse; G. A. Anderson, University of Minnesota, Minneapolis.

MEASURED DRAWINGS

JURY OF AWARDS:—H. O. Milliken, J. H. Freedlander, E. S. Hewitt, W. E. Shepherd, Jr., W. Warren F. A. Godley, W. D. Blair, F. C. Farley, and C. Grapin.

NUMBER OF DRAWINGS SUBMITTED:—3.

SUBJECT:—The Mappa House, Trenton, N. J.

AWARD:—SECOND MEDAL:—H. O. Williams, Yale University, New Haven.

SUBJECT:—The Josiah Bronson House, Onondaga Hill, N. Y.

AWARD:—MENTION:—K. A. Marvin, Syracuse University, Syracuse.

BOOK NOTES

PLUMBING QUESTIONS AND ANSWERS

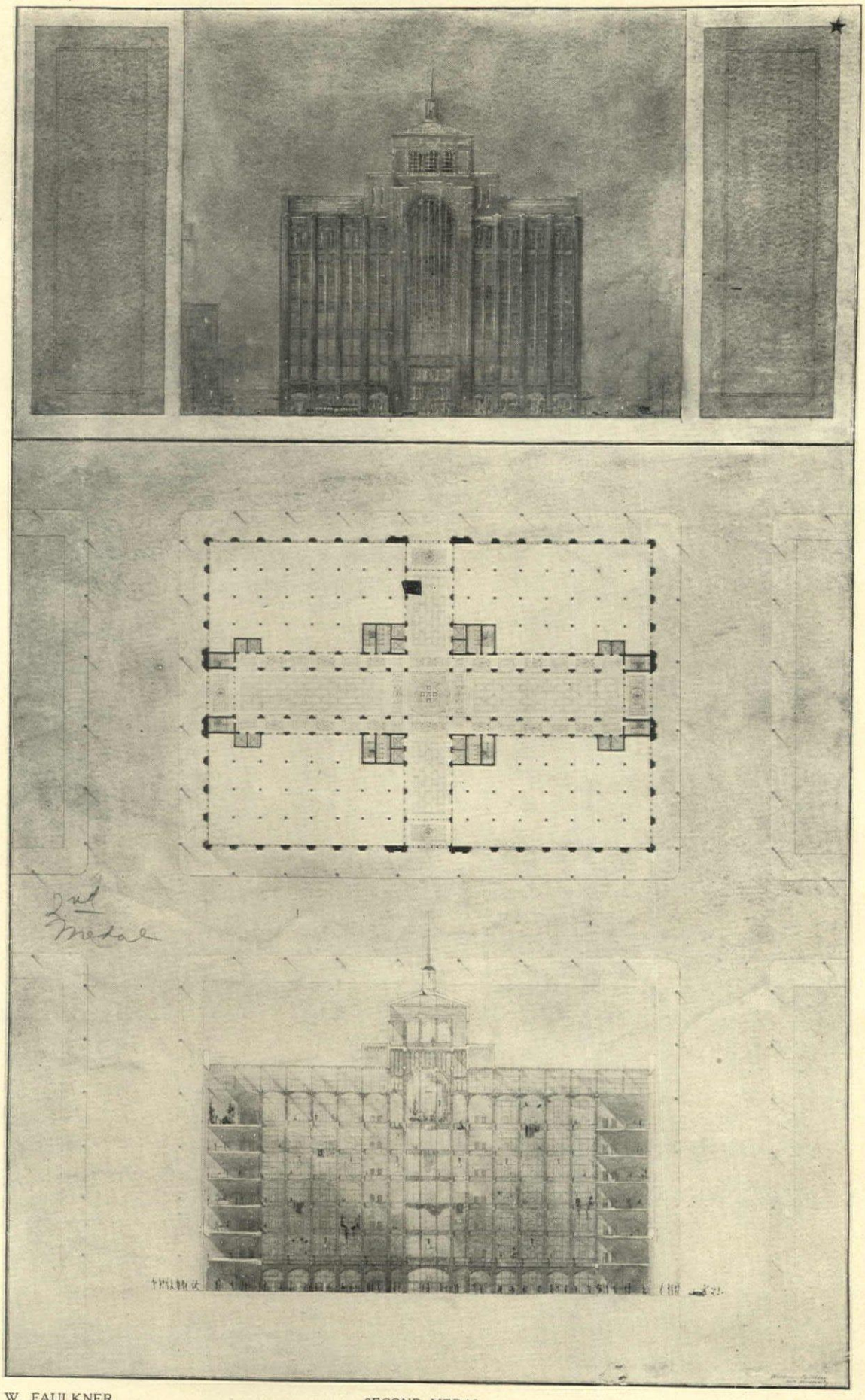
THIS is a second edition of this valuable book written in the form of questions and answers. A very complete index makes any particular phase of plumbing installations quickly available. It is written in an eminently practical style and is illustrated in such a manner that the installation of plumbing equipment in all its details is easily understood. Data pertaining to the correct proportioning of the various service pipes is given. The information given is of value to plumbers and craftsmen and also to architects, superintendents and draftsmen.

Plumbing Questions and Answers, by Joseph E. Taggert, S.E. 104 pages, illustrated, 5 x 7 inches, cloth. U.P.C. Book Co., 239 West Thirty-ninth Street, New York City. Price $1.50.

HOUSE PAINTING

PAINTING is a very important element in building construction and a broad, general knowledge of it is most desirable. In this book (third edition) Dr. Sabin has discussed every phase of the subject that is applicable to house painting. After describing the nature of paints, the different vehicles and pigments, the tools for its application for various purposes are described. Exterior and interior painting, varnishing, floor finishing, glazing and papering, are subjects very thoroughly covered. The book concludes with the subject of whitewashing, kalsomining and cold water paints. An appendix with formulae for mixing paints for various purposes and for making a large number of tints is included. It is a valuable and usable book.

House Painting, by Alvah Horton Sabin. Third edition, revised and enlarged, xv+160 pages, 5 x 7¼ inches, cloth. John Wiley & Sons, Inc., 432 Fourth Avenue, New York City. Price $1.50 *net.*



W. FAULKNER SECOND MEDAL YALE UNIV.

CLASS "A"–III PROJET—A SHOPPING CENTER

STUDENT WORK, BEAUX-ARTS INSTITUTE OF DESIGN

V. L. ANNIS SECOND MEDAL UNIV. OF PENN.

CLASS "A" AND "B" ARCHAEOLOGY–III PROJET—THE PORCH OF A ROMANESQUE CHURCH

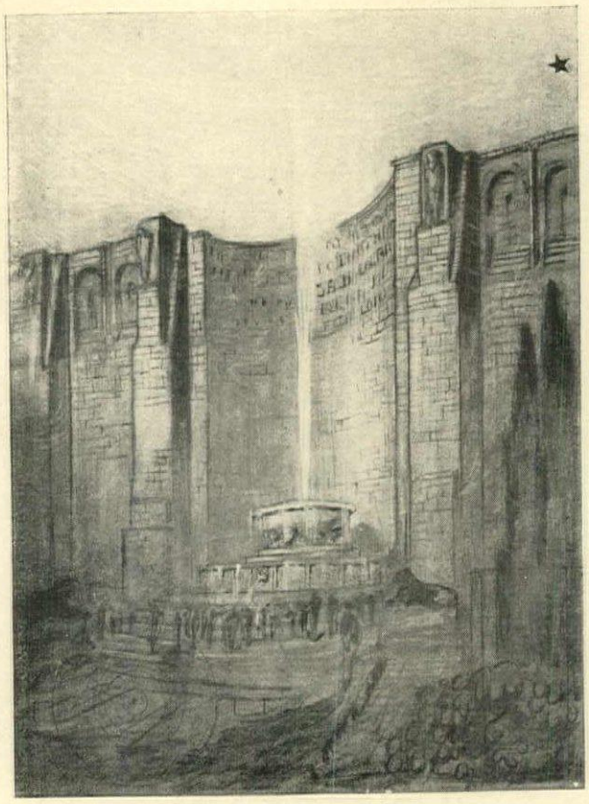
STUDENT WORK, BEAUX-ARTS INSTITUTE OF DESIGN

F. J. SCHLOSSER — SECOND MEDAL — JOHN HUNTINGTON POLY. INST.

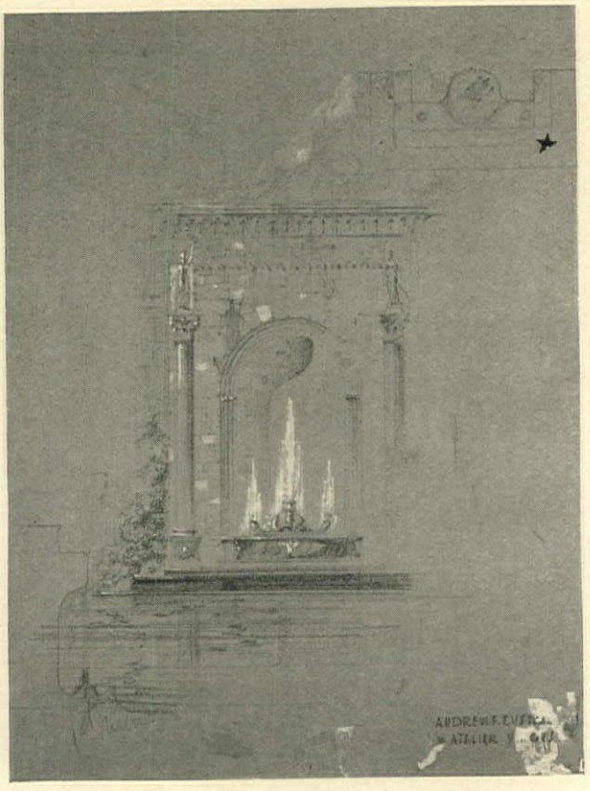
CLASS "A" AND "B" ARCHAEOLOGY–III PROJET—THE PORCH OF A ROMANESQUE CHURCH

STUDENT WORK, BEAUX-ARTS INSTITUTE OF DESIGN

G. F. TRAPP — SECOND MEDAL — COLUMBIA UNIV.



W. FERRARI — YALE UNIV.
FIRST MENTION



A. F. EUSTON — ATELIER HIRONS
FIRST MENTION

H. K. BIEG — ARMOUR INST. OF TECH.
FIRST MENTION

CLASS "A"-III

ESQUISSE-ESQUISSE—A MONUMENTAL FOUNTAIN

STUDENT WORK,

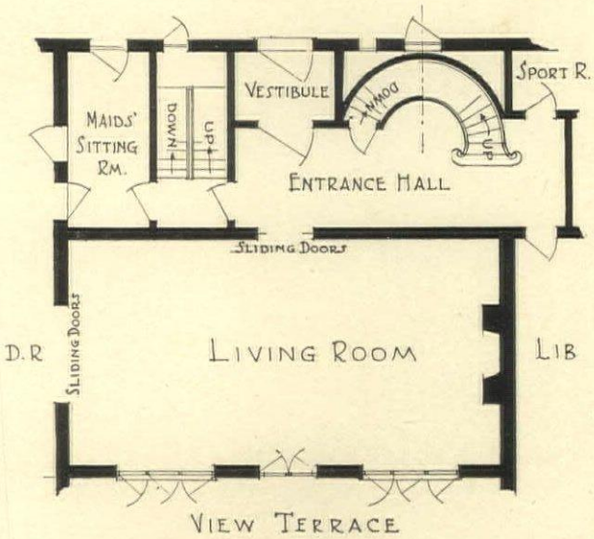
BEAUX-ARTS INSTITUTE OF DESIGN

INTERIOR ARCHITECTURE

Designing *and* Furnishing *the* Entrance Hall

WHILE in no way intending to diminish the importance of the living room and its right to a considerable part of the floor space of the first floor plan, from an entirely different angle it may be said that the entrance hall is of even greater importance. With the living room, it is wholly a practical matter, one based on square feet, while with the hall, it is purely a problem in psychology. It is here that one forms those lasting first impressions by which the whole house is to be gauged. The entrance hall is the keynote on which the whole composition of the house plan is based. It must be planned and designed, therefore, to convey, in that first impression, the elements of either formality or informality, simplicity or elaboration, brightness or mellowness, according to the decorative scheme carried out in the other rooms of the house.

There are several distinct stages in the course of its development which must be studied and worked out with this idea always in mind. The first

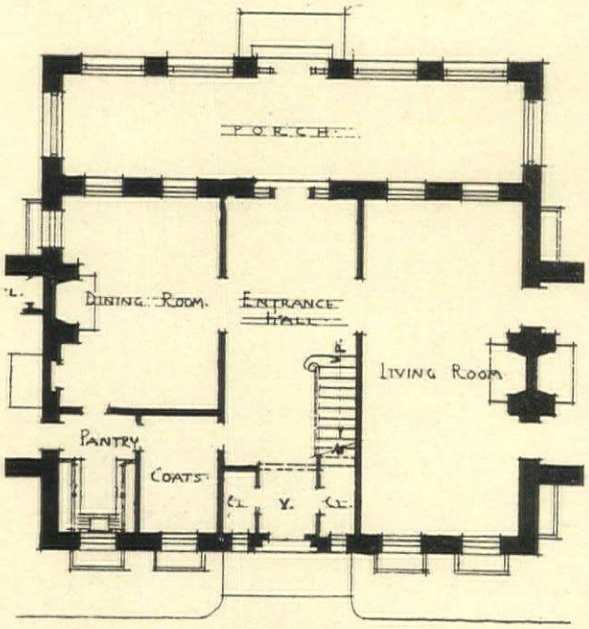


PLAN OF HOUSE FOR M. C. TREADWAY, BRISTOL, CONN.

R. H. DANA, JR., ARCHITECT

The effect on entering is one of spaciousness, for it is not until one is well in the house that the stairs are seen to be in the same hall. Immediately inside the front door, a most inviting view of the living room is visible, and yet all the proportions of the plan are of moderate dimensions

of these is its floor plan. A bare floor plan alone can express elements of formality or informality, just as much as the decorations that are applied to the walls, although it may not be so generally accepted. For instance, square shaped rooms are much more conducive to cordiality than the long narrow room, while plans with many small door openings are more suggestive of formality than those with fewer large openings. The average house plan of the present day should express more than anything else the feeling of simple informality, and it is this type of house that is here to be considered. The square hall, therefore, seems best suited to it, and, besides, as will soon be seen, it lends itself better to decorations and furnishings to portray these desired qualities. It is



PLAN OF HOUSE AT RYDAL, PA.

OSWALD C. HERING AND DOUGLASS FITCH, ARCHITECTS

The entrance hall is given a generous proportion of the first floor, and the stairs allowed to be placed well away from the door. Notice that a view of the living room fireplace is obtained immediately on entering the house

not a matter of size, as in the living room, but strictly a problem in proportion. A small, square hall, say, ten by ten, is so far superior to one six by sixteen (one of similar area) that it is difficult to understand how the long, narrow type, so common fifteen or twenty years ago, ever gained its popularity, except as a means to express some element of formality or severity which the other rooms possessed. Now, its openings. Far and away the most important of these is a door or opening leading to the living room, through which a view of a part of that room will be obtained immediately after entering the front door. Nothing more than this gives that feeling of cordiality and hospitality so desirable, especially if the view

of the living room is more than ordinarily inviting. This takes the place of the "Welcome" on the door mat. Sometimes this opening may be to the right of the entrance door, sometimes to the left, or perhaps directly opposite. This is not a consideration so far as its effect is concerned.

Another vital part of the hall plan is the placing of the stairs. If possible, keep the stairs out of the entrance hall, or make some arrangement so that the effect of being so is obtained. An arch may be placed between the entrance hall and the stair hall, where space does not allow of a distinct separation to carry out this idea. At any rate, keep the stairs well away from the entrance door. An entrance door is not intended to lead the one entering immediately upstairs; in fact, seldom, if ever, does anyone at once proceed upstairs after coming into the hall from the front door. Plan the hall, therefore, to conduct the one entering into the living room or library, perhaps, but avoid a direct invitation to the stairs. This does not mean that stairs cannot be placed facing the front door, for conditions frequently demand this. The idea of the staircase being in another room, the illusion which the archway suggests better than any other way, when space is at a premium, puts the stairs at once in the background.

ENTRANCE HALL IN HOUSE AT RIVERDALE-ON-HUDSON, N. Y.
DWIGHT JAMES BAUM, ARCHITECT

While the stairs actually start from the entrance hall, a break in the floor plan, by a step down, gives the effect of the stairs being in another room. Note the square proportions to the entrance hall

With these facts in mind, the general floor plan of the hall is completed, and the next step in its development is the placing of the furniture. There are several pieces of furniture which convention seems to place in every hallway. It has become so much a matter of form to put a console table with mirror over in a hall, that no hall now seems complete without them. To be sure, these pieces cannot be classed with the general run of conventional furnishings, for there is no doubt of the practical value of both in every hall. The console allows a place for not only small articles of wearing apparel, but also permits of a pair of candlesticks or other decorative accessories, which add a note of interest and further carry out the cordial atmosphere of the room. As to the mirror, there can be no denying its practical value, nor, if well selected and hung, its decorative value, too. For the very reason, however, that these two pieces are so often used in hall schemes, it is well to consider some other furniture which would be appropriate for halls. As suggested in one of the accompanying illustrations, a bench may be used in place of the console, with a mirror over. This is very interesting and even more practical than the table, especially for a small hall, for, after all, a seat of some kind is more necessary than a table, if you cannot have both. The old time hat-rack which used to be such a familiar feature of every hall, large or small, has left a vacant spot which must be furnished, and, in solving this new problem, let us not replace one discarded convention with another.

In choosing the style of decoration for a hall, the next step in its development, it is again most important to bear in mind the role which the hall plays as the keynote of the entire house. The impression which the hall establishes must prepare one for what the other rooms contain. This, of course, may be interpreted in various ways. An Elizabethan hall does not necessarily mean that the living room opening from it must also be Elizabethan; in fact, it is best not so. However, a hall of such pronounced characteristics as are evidenced in an Elizabethan design, does expect that the living room will be in some English period. Similarly, a decided Louis XVI hall would seem to indicate a French living room. And herein lie the beauty and the practicability of the so-called Colonial hall. As has been so often and so insistently mentioned in these articles, the various styles which go to make up Colonial designs are so numerous that a Colonial hall with its simple lines and proportions prepares one to expect most anything in the adjoining living room. In spite of that fact, if not on account of it, a word of praise must be given to the Colonial style hall, especially for the medium sized house of moderate cost. Its proportions are expressive of informality and cordiality, its lines are simple and dignified, its colorings are unlimited, and its furnishings further carry out all the desired elements.

HALL IN HOUSE OF HERMAN YOUNKER, ELMSFORD, N. Y.

BUCHMAN & KAHN, ARCHITECTS

By turning the first few steps, the direct passage from the entrance door to the stairs, which are very near, is avoided, and the one entering is more naturally led into the living room. This is the view from the front door

Then there is the Italian hall, with its rough plaster walls and trimless openings. The impression of such a hall is, too, somewhat expectant, and extremely hospitable.

The principal element in a hall design is interest. Good impressions are made only by those things which interest the observer. A good impression made on one immediately when entering the house, solicits further investigation; in other words, it effects hospitality. A hall designed along accurate period lines may interest some. It may disturb others. Therefore, it could not be considered a successful hall. For this very reason simple designs are best, for they interest more and disturb fewer, although the interest may be less pronounced. The problem, then, is to make the simple more interesting, without detracting from its simplicity. Nothing will do this so quickly and decisively as added color. Use color freely though simply, in the decoration. Then it is only a matter of keeping enough variety to the color scheme to please all tastes. What if the Italians, centuries ago, always left their rough plaster walls in stone color, or if the Louis XVI architects painted both walls and woodwork in soft grays? You are not reproducing an Italian *villa* or a French *palais*, so put your own interpretation on the designs which they may have inspired.

In making up a color scheme for a hall, con-

sideration must be given the colors used in the rooms directly adjoining it, or opening into it. Just as the style of the design must prepare one for the style of the living room (admitting that the living room opens from it), so must the color scheme of the hall prepare one for the living room

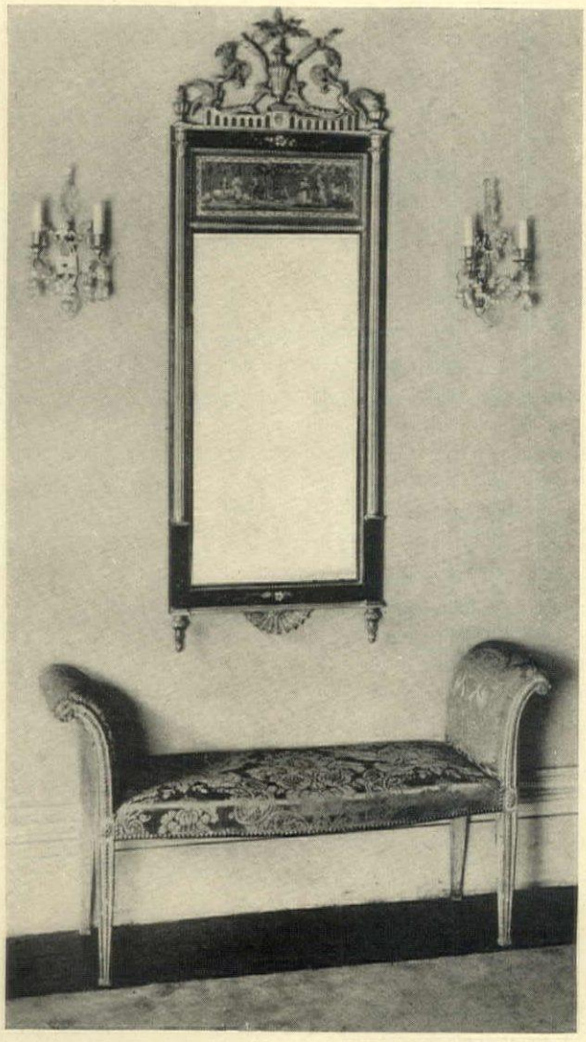
HALL IN HOUSE AT FIELDSTON, N. Y.

DWIGHT JAMES BAUM, ARCHITECT

Although the stairs actually commence in the entrance hall, and quite near to the front door, the archway which forms the dividing line between the two halls seems much more pronounced than it is in reality. The effect is a separate entrance hall

colors. This does not mean similarity in color, but strict harmony between them. For instance, a green hall would not prepare one for a red living room, nor would a red hall prepare one for a blue living room. But a green living room would naturally open from a blue hall, or an orange hall would perhaps suggest a red living room. In other words, harmony must reign and contrast must not be too pronounced. The definition of harmonious and contrasting colors, given in an earlier article in this department, is very adaptable here. (Page 467, issue of November 21, 1923.) Do not understand that this contradicts in any way what has already been said concerning the free use of color in a hall. A room spoken of as a red or green room does not mean that there

is not plenty of other color in it. The red or green refers to the dominating color of the scheme, and, in order that a scheme may have sufficient contrast to be of interest, there should always be a dominating color. This brings you right back to the interest which the hall must arouse. What colors are apt to arouse the interest of the greatest number of people? That seems to be the problem in the selection of the color scheme of the hall. A monotonous use of any one color will never create as much interest as a scheme of several colors, built around an interesting dominating color. Shades of yellow are generally considered pleasing to a greater number of tastes than any other color. Also, yellow offers a better background for applying decoration in contrasting colors, and, for these reasons, halls are frequently seen with yellow as the dominating color of the scheme. Old Colonial wall papers of verdure or landscape patterns carry out the yellow idea, although softened considerably by the combined grays. Rough plaster walls tinted in a shade of dull yellow form an interesting background, while allowing a fine opportunity for the use of other or secondary colors in the decoration and furnishings. The deeper tints, as orange and tans, are often more suitable on account of the colors of the adjoining rooms, or as being more in keeping with the style of the design, but the result would still be known as a yellow hall.



Getting away from the conventional console and mirror, a manufacturer in his showroom suggests an attractive bench with mirror over, flanked on each side by wall brackets, as a group for the hall

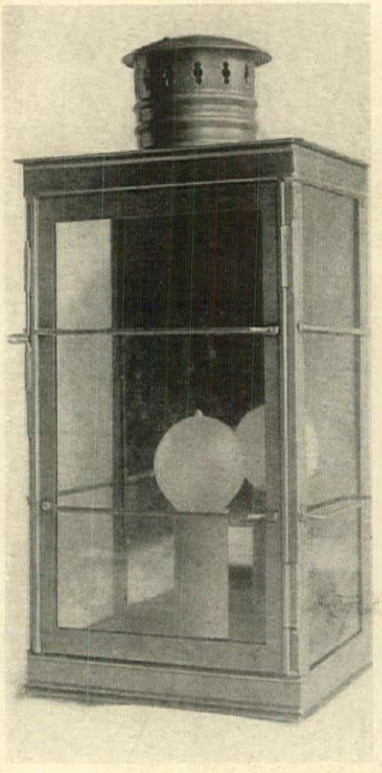
While the general impression of the color scheme of the hall must prepare one for what to expect in the adjoining room, the portieres at the opening between the two rooms, if they are used, must act as the real connecting link. Looking into the living room, the portieres frame a picture of that room, and it is necessary that the frame does not interfere with the effect of the picture. Thus, plain or two-tone materials are best.

Speaking of portieres, the question naturally arises, is it advisable to use portieres at the opening between the hall and the living room? The decision depends a great deal upon the plan of the hall. If the hall is very small and the opening to the living room, as a consequence, very near the entrance door, portieres are really needed to preserve the privacy which the living room deserves. The effect of the hanging curtains, while not cutting off at all the view of the living room, fills just this want. An instance where portieres are not necessary is when the opening to the living room is treated by a decorative surround. In that case, the trim and overdoor serve as the frame instead of the portieres.

The floor of the hall offers an opportunity for unusual treatment. In the first place, it is not possible for the owner of the average house, the type of house which is here being considered, to afford an Oriental rug in the hall. Any other kind of carpeting is put to too strenuous use to be practical. Even the finish of the hardwood will not long stand this hard usage and will require constant refinishing. From a practical standpoint, therefore, some material other than these must be found. The market offers today several products suitable for this purpose, durable and pleasing in design as well. Composition tiles in various patterns to harmonize with any style of decoration give a decided note of interest to the floor treatment in both line and color, and possess strong qualities of durability besides.

Then comes up the problem of lighting the hall.

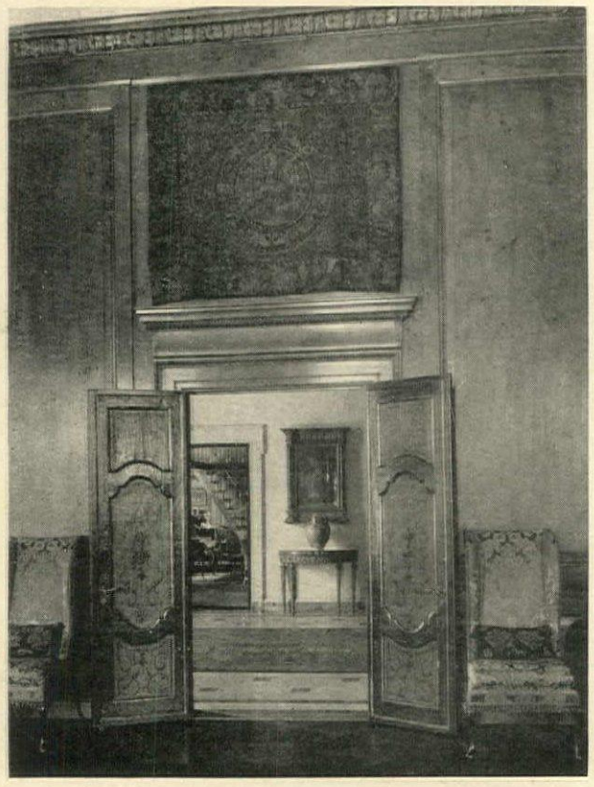
This is one room where intensified light is not required in any part of the room. Sufficient light is needed perhaps by the mirror to allow of its practical use, but, beyond that, bright light is not necessary. In such a case, a ceiling chandelier seems to fill the bill, perhaps aided by a bracket on either side of the mirror. A new problem arises in certain halls where the entrance hall and stair hall are one to locate the proper place for hanging the chandelier. On account of the stair well, it is difficult to locate any center. This is only another point in favor of a dividing beam or arch, which readily establishes a center outlet for the entrance hall and permits of two brackets above a console to light the stairs. (See illustration on page 398.) Lantern effects are sometimes interesting for hall fixtures in that they pave the way more gradually for the transition from exterior to interior details.



REPRODUCTION OF AN OLD COLONIAL LANTERN ARRANGED WITH MODERN LIGHTING FACILITIES, APPROPRIATE FOR A HALL

Summing up, then, it might be said that simple lines and a not too decided color scheme are the outstanding elements in the design and decoration of a hall. The choice of wainscots, wall paper, rough plaster, etc., are all determined by the style of the decoration, which, in turn, is materially governed by the style of the adjoining rooms. Wall paper in halls as in any other room adds interest in design and color at the same time, with the least effort and expense. No mention has as yet been made of window hangings, for it is seldom that windows appear in the hall of the average house. In case they do, however, it is best to keep the hangings in a plain color, for one window of a figured material would look spotty, and there would be no other place to repeat the fabric. Curtains at side lights and transoms of the entrance door should invariably be of a neutral tone. The reason is that when entering the hall, the decorative scheme should act on the one entering to make him want to stay in the house. Colored figured curtains at the door would tend to turn him around again after entering, to face the door and turn his back on the rest of the house. Portieres need not be of the same material as window hangings, for portieres act somewhat in the same way to the living room, which, in their case, is desirable. One window or even two in a hall should generally be treated in the same neutral material as the door lights. Pongee or casement cloths are appropriate for this purpose.

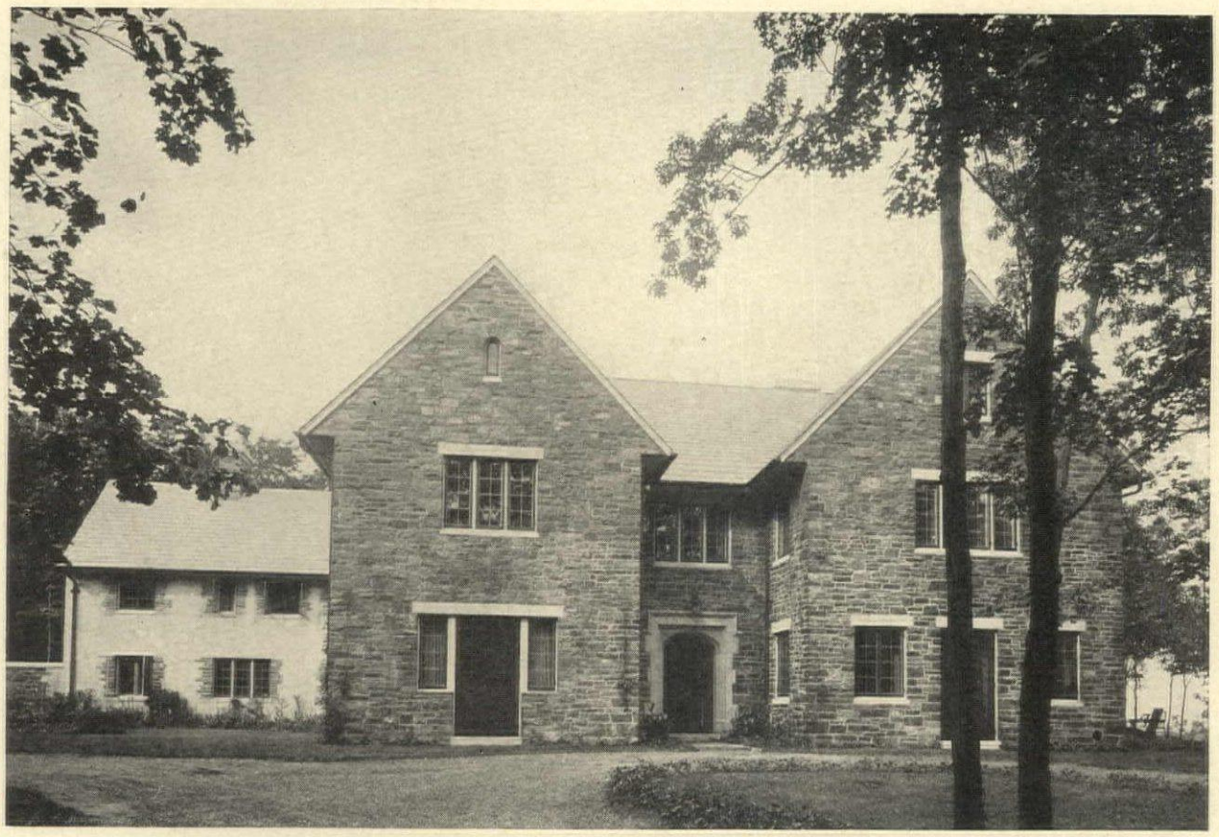
Furniture covering cannot take the important part in a scheme of a hall as it does in other rooms, for the fact that there is so little of it. Odd materials of decided pattern or color used in very small proportion in any scheme give a spotty effect. In large rooms with much furniture, certain pieces are covered with materials which are purposely of pronounced pattern and color. But in this case they are used to create contrast and break monotony. In halls, with little furniture, there is no monotony made by one material and contrast is more easily brought about.



INTERIOR, HOUSE ON PARK AVENUE, NEW YORK
DELANO & ALDRICH, ARCHITECTS

Reversely, looking from the living room into the hall, the furniture should make the picture

Acknowledgment is made to the following firms for their courtesy in supplying illustrative material: Cooper-Williams, Inc., Glasner Brothers.



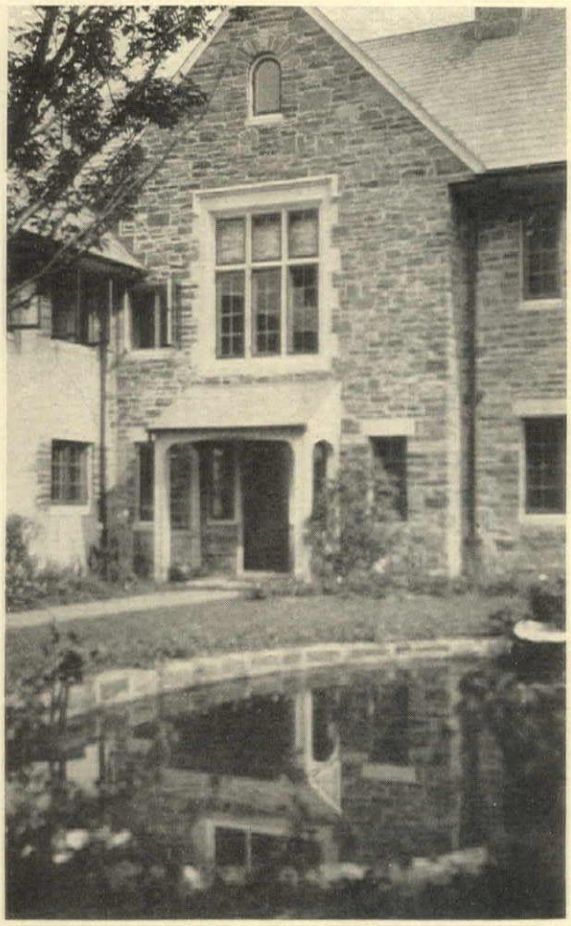
HOUSE AT BAYVILLE, L. I., N. Y.

HUBERT E. REEVES, ARCHITECT

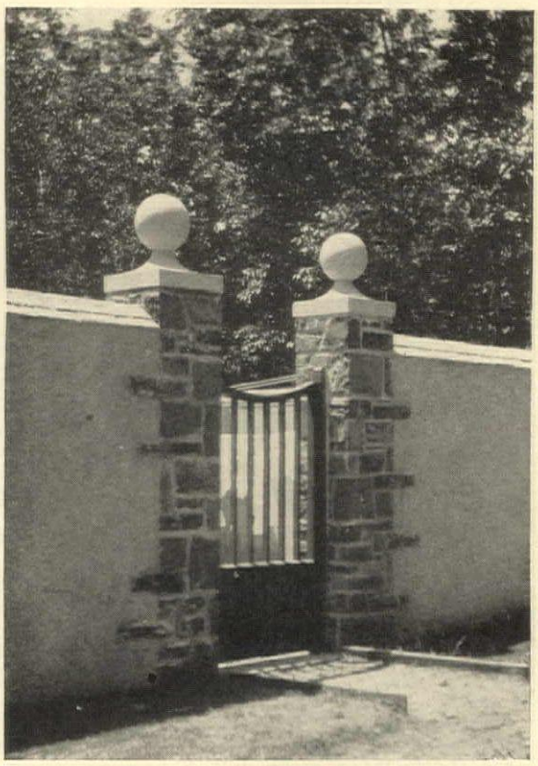
Walls of main portion are of stone from the Princeton University Quarries. Service wing walls of rough cast stucco. Roofs slated. Sash painted a dark green. An attempt has been made to preserve the traditions of the English manor house

DETAILS OF A HOUSE AT BAYVILLE, L. I., N. Y.

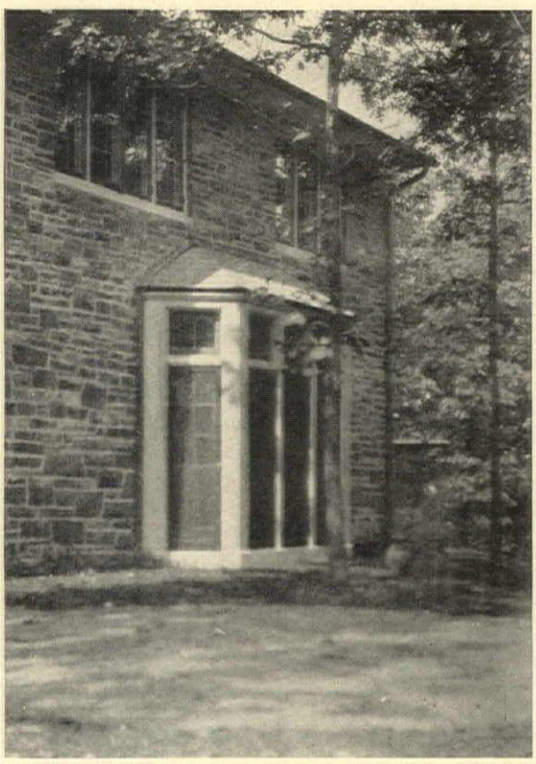
HUBERT E. REEVES, ARCHITECT



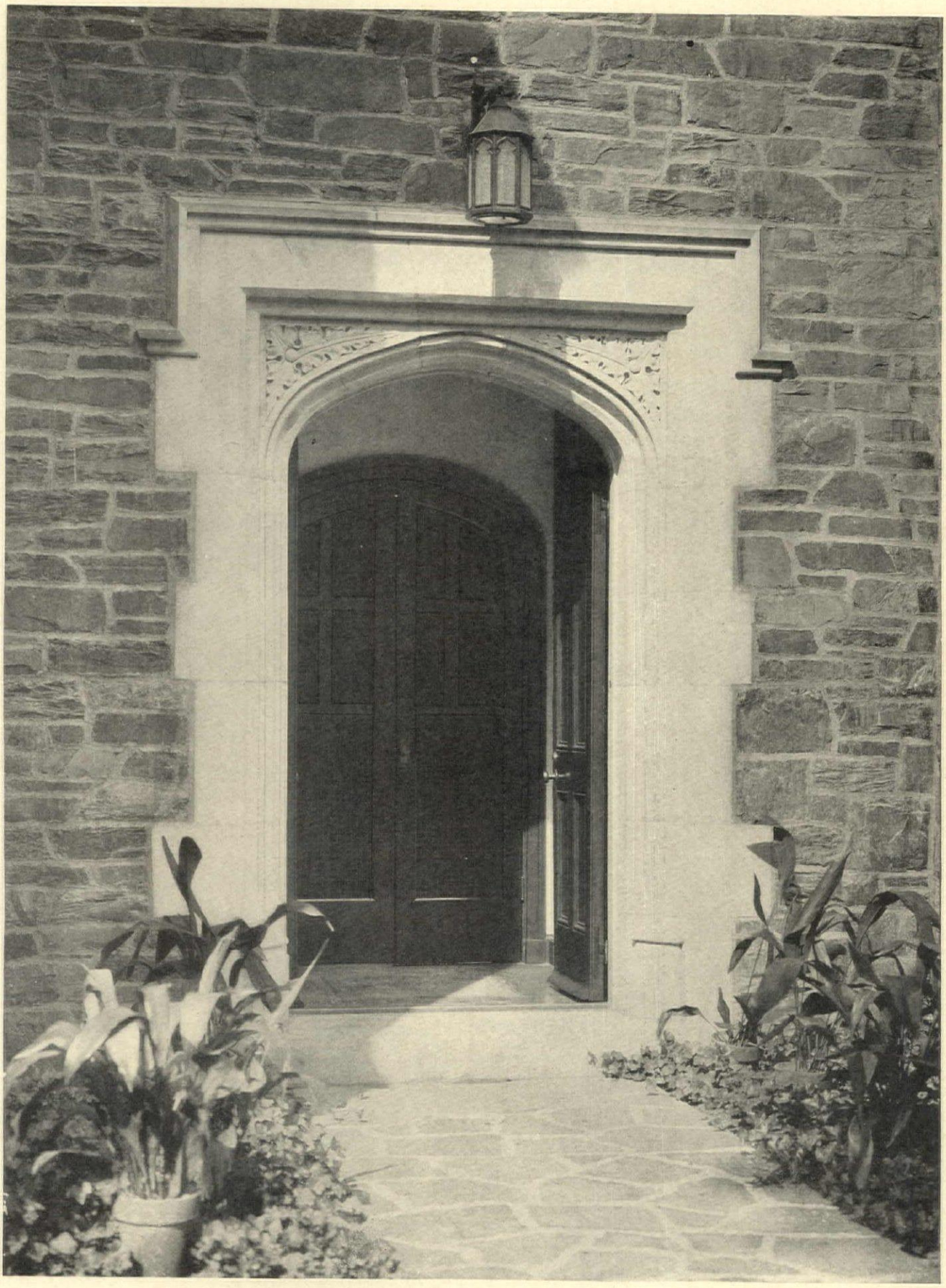
THE STAIR GABLE, OVERLOOKING THE GARDEN POOL



A COMBINATION OF MATERIALS WHICH BLEND HARMONIOUSLY



THE DINING ROOM BAY FACES EAST FROM WHICH IS AN UNOBSTRUCTED VIEW OF LONG ISLAND SOUND



MAIN ENTRANCE

HOUSE AT BAYVILLE, L. I., N. Y.

HUBERT E. REEVES, ARCHITECT

The cast stone forms a sharp contrast to the soft tones of the wall, and was carefully tooled to give an impression of cut stone

LIBRARY FROM ENTRANCE HALL

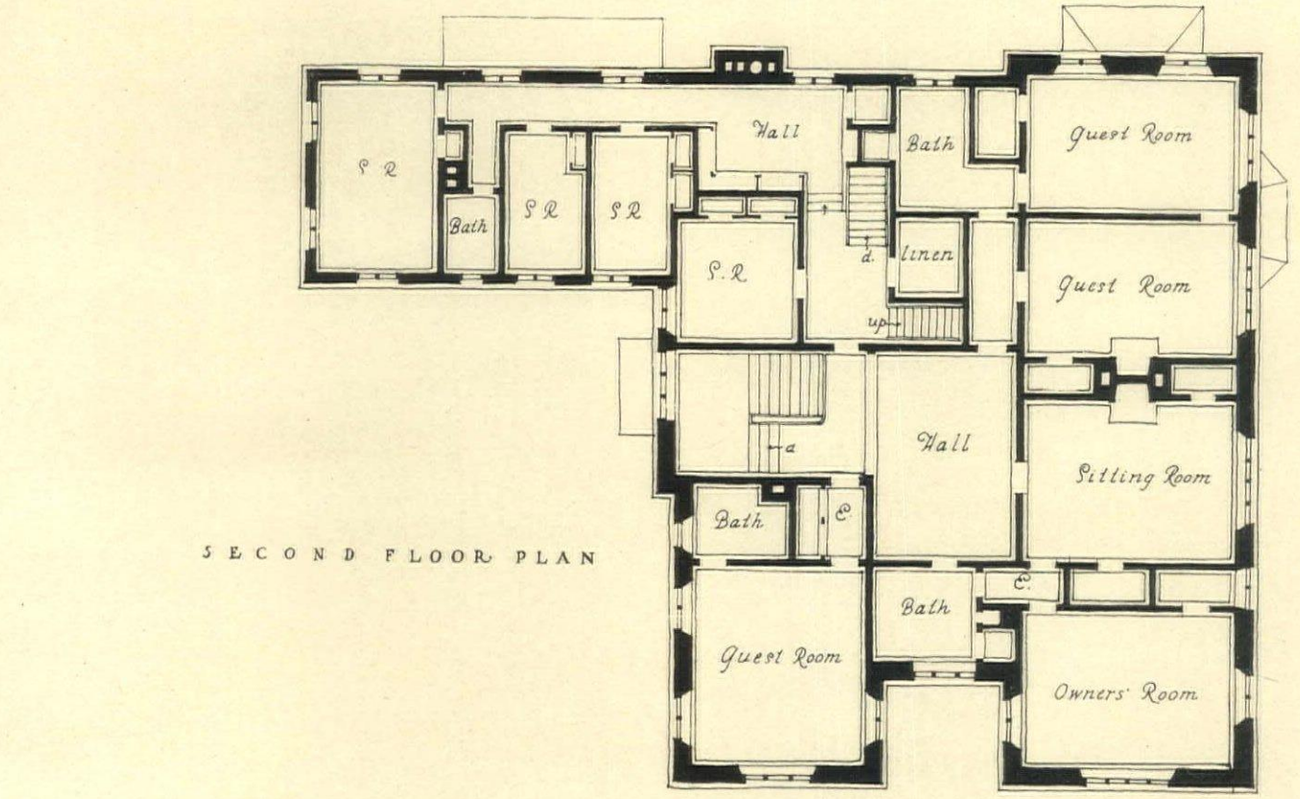
FIREPLACE END OF DINING ROOM

HOUSE AT BAYVILLE, L. I., N. Y.

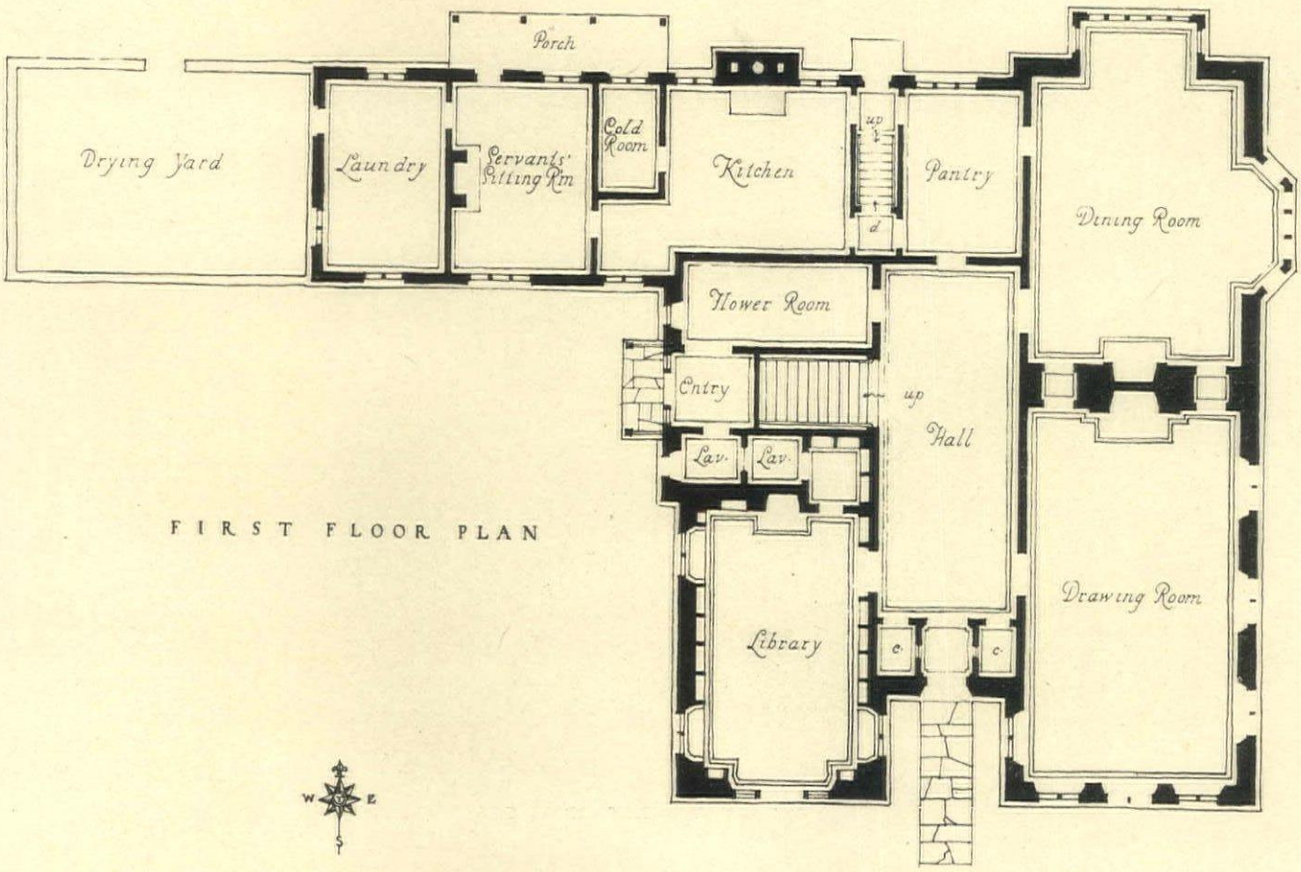
HUBERT E. REEVES, ARCHITECT

Walls and woodwork of dining room toned in soft shades of apple green, with certain mouldings striped in old gold. Base of polished slate. The floor is paved with soapstone. Mantel wood, facing and hearth of limestone

Library panelled with veneered oak. Ceiling is a replica of one in Wilderhope Castle. Floor quartered oak, bordered with mahogany



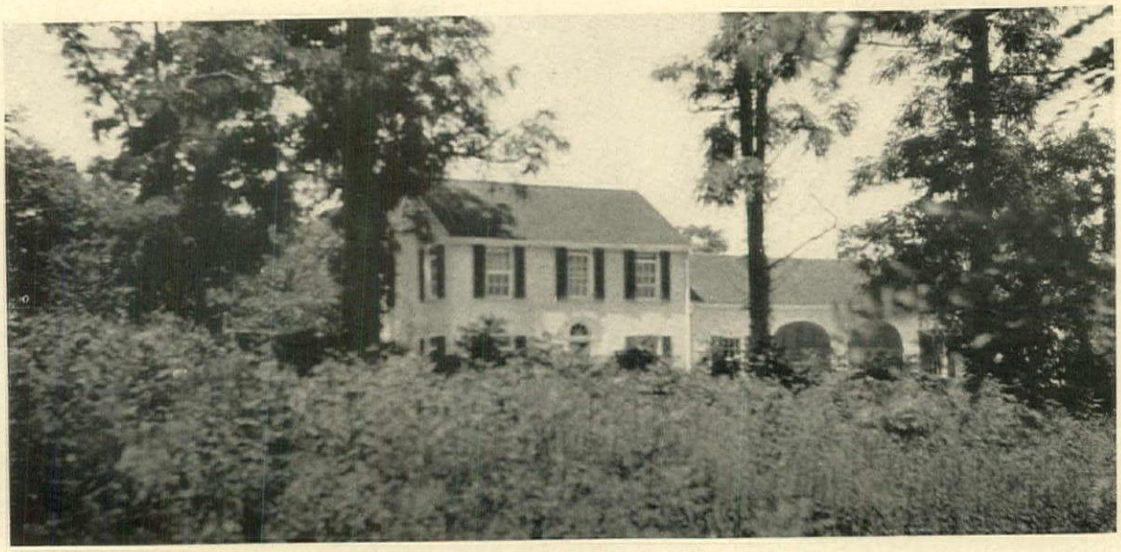
SECOND FLOOR PLAN



FIRST FLOOR PLAN

HOUSE AT BAYVILLE, L. I., N. Y.

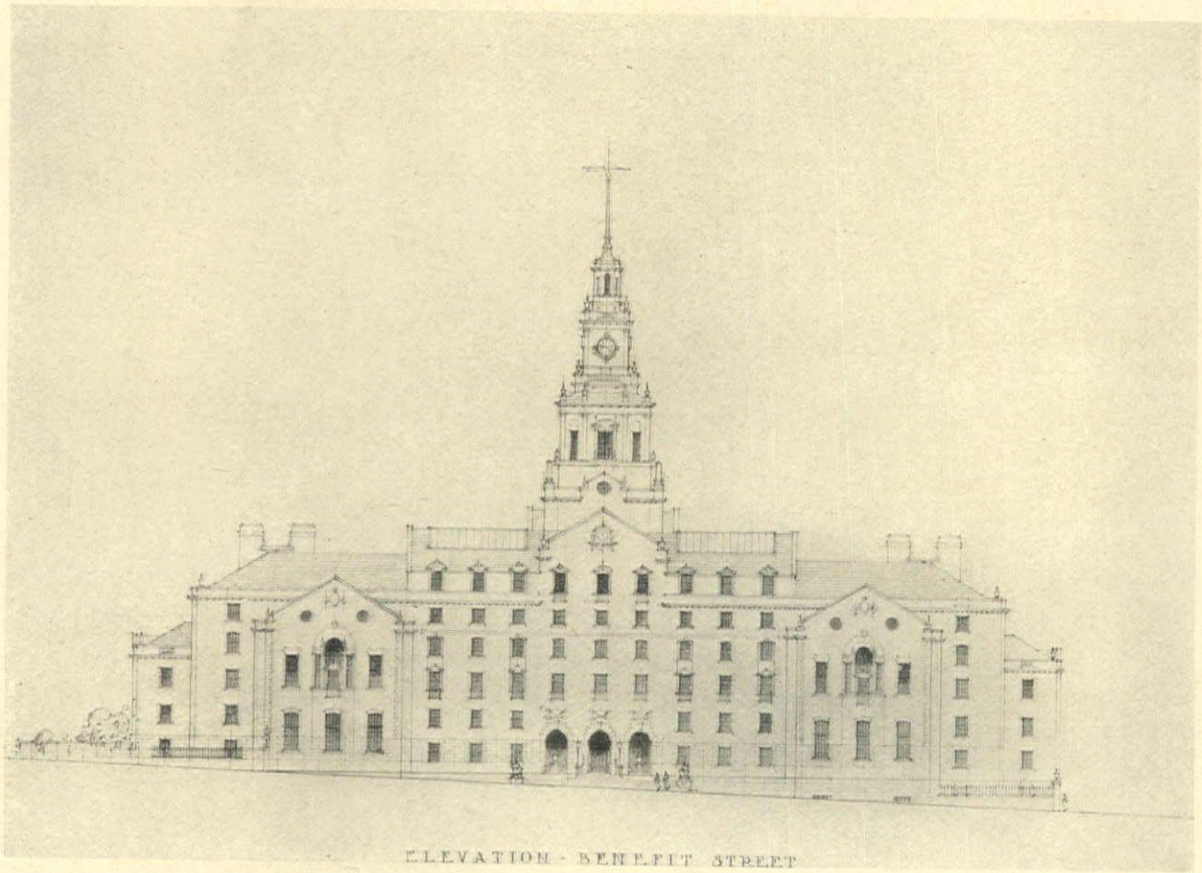
HUBERT E. REEVES, ARCHITECT



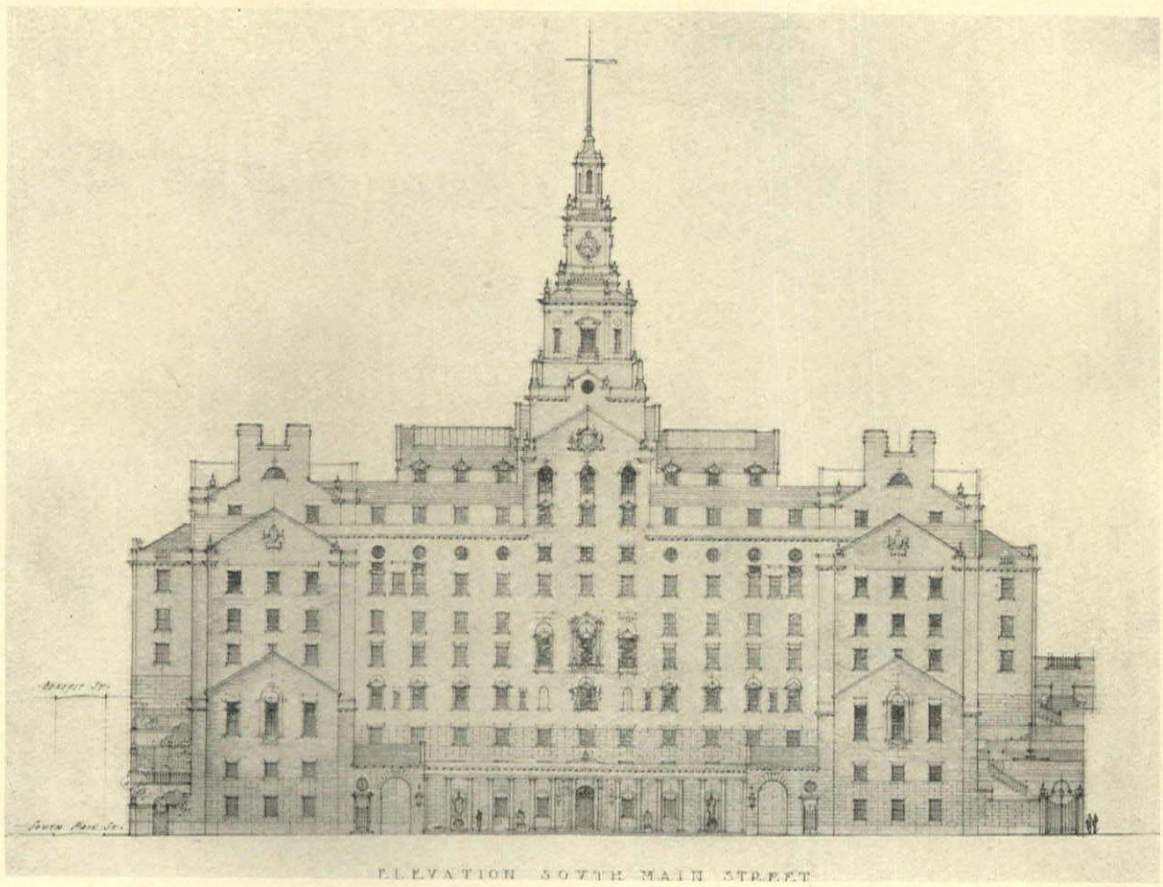
The home of the farmer today is modern, comfortable and generally attractive. No more do his buildings destroy the landscape. They meet every requirement from a practical and sanitary standpoint, and the one time "down at heel" aspect is seldom to be seen

TWO VIEWS OF A FARM GROUP AT BAYVILLE, L. I., N. Y.

HUBERT E. REEVES, ARCHITECT



ELEVATION - BENEFIT STREET

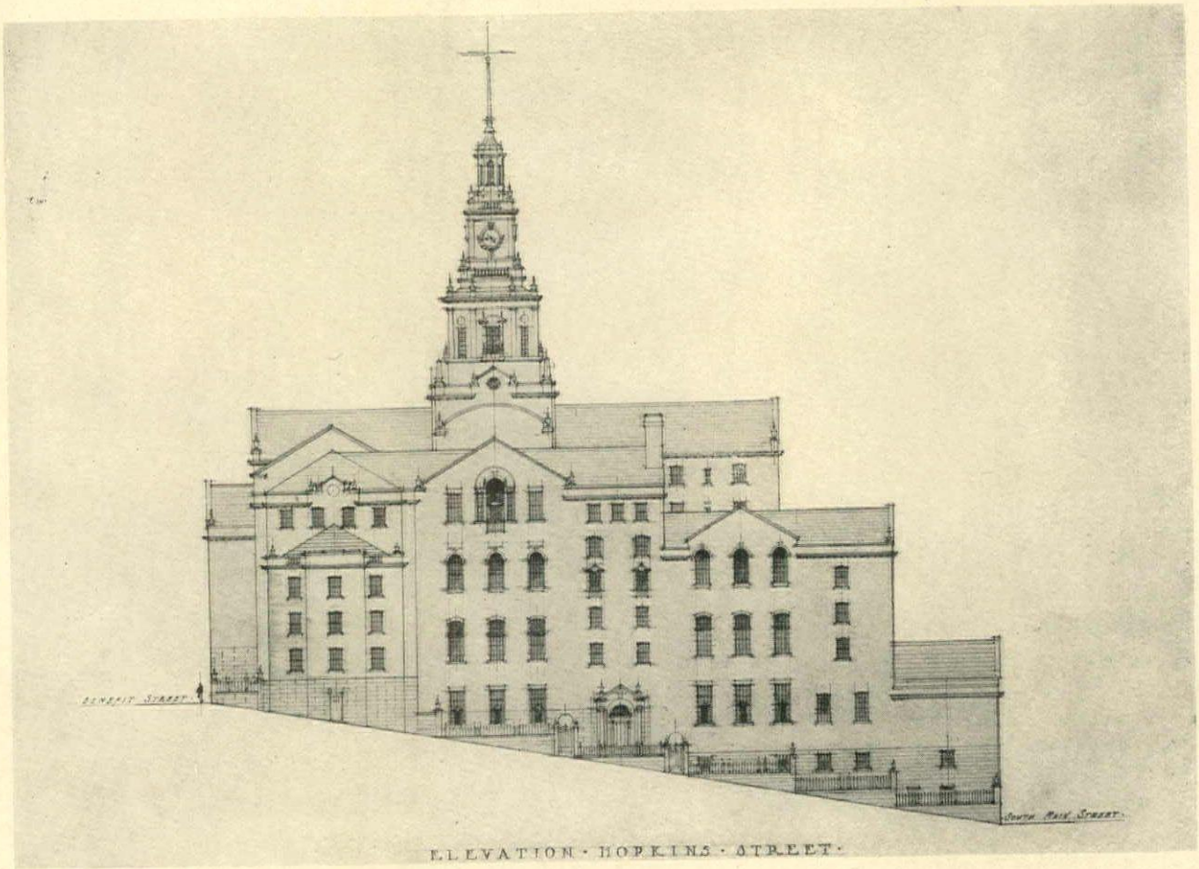


ELEVATION SOUTH MAIN STREET

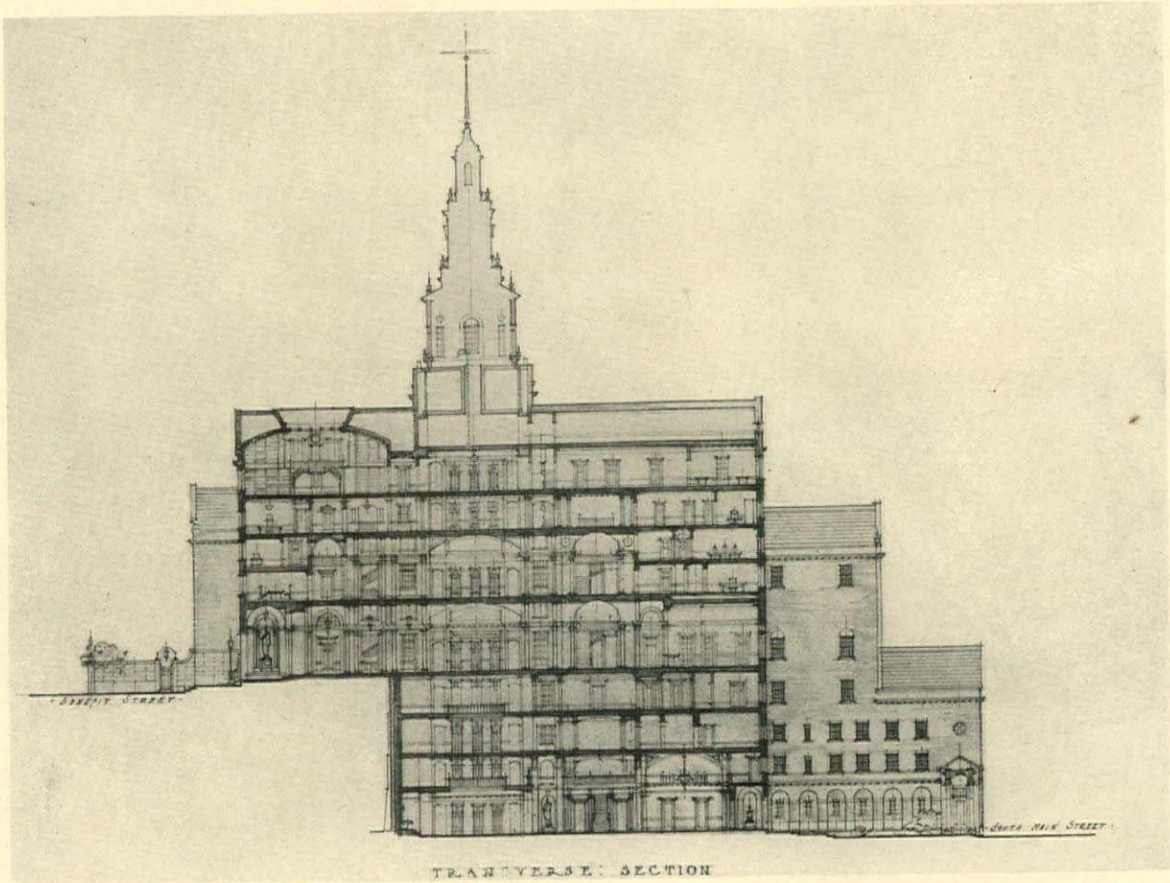
DESIGN PLACED FIRST—JACKSON, ROBERTSON & ADAMS, ARCHITECTS

COMPETITION FOR COURT HOUSE, PROVIDENCE, R. I.

Drawings of the third prize design having been received too late for presentation in this issue, will appear in the issue of May 7



ELEVATION · HOPKINS · STREET ·

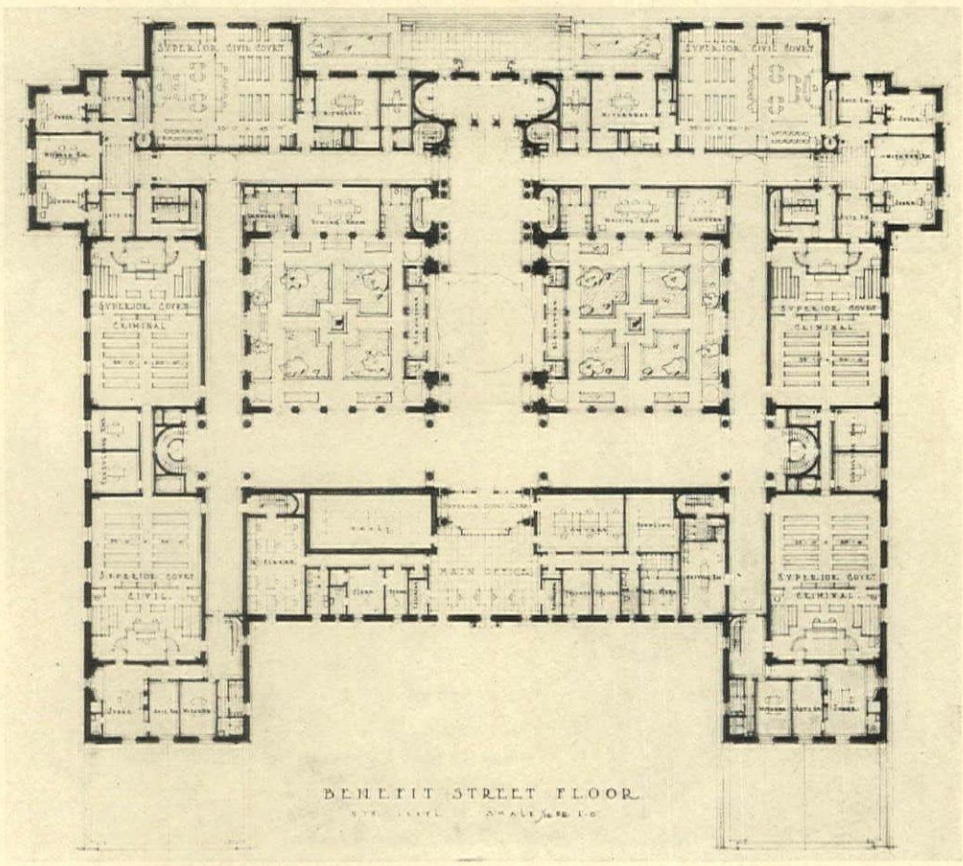


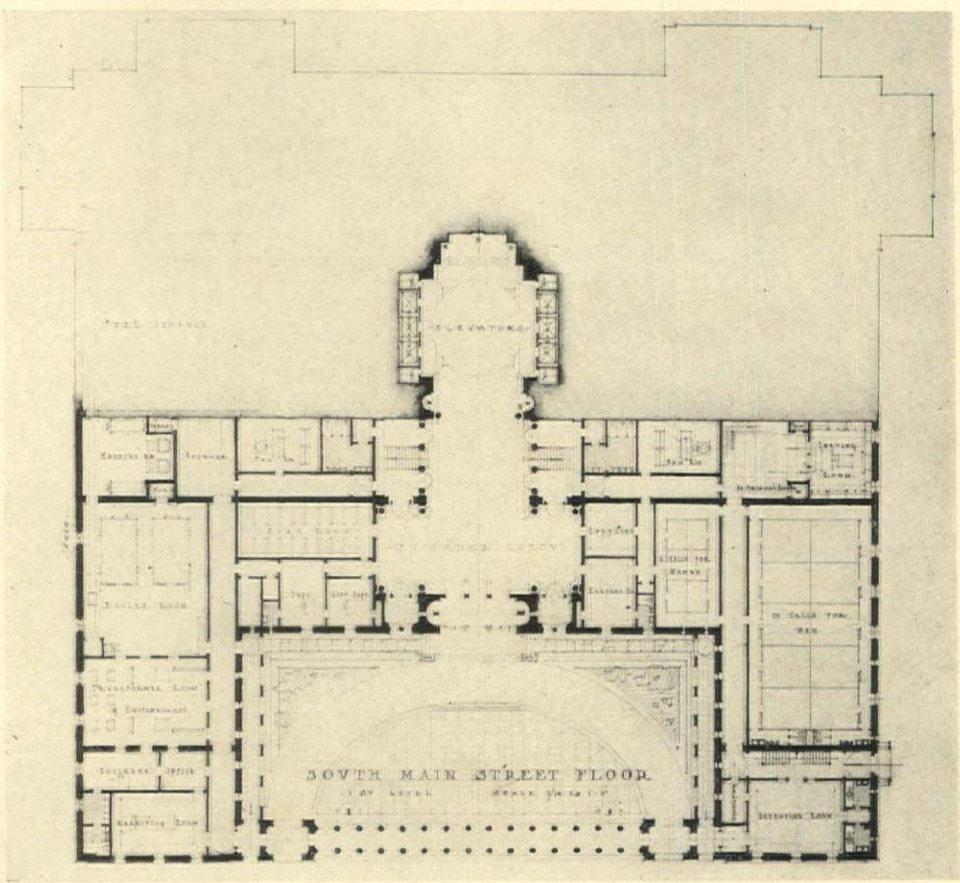
TRANSVERSE SECTION

DESIGN PLACED FIRST

COMPETITION FOR COURT HOUSE, PROVIDENCE, R. I.

JACKSON, ROBERTSON & ADAMS, ARCHITECTS

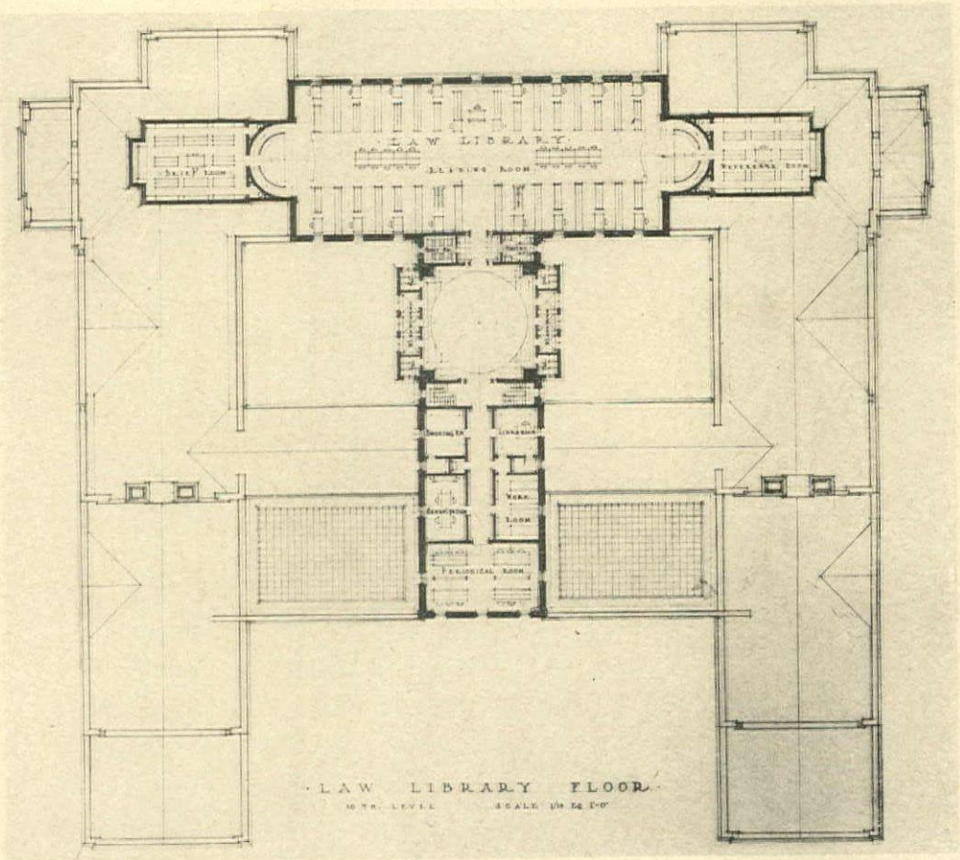


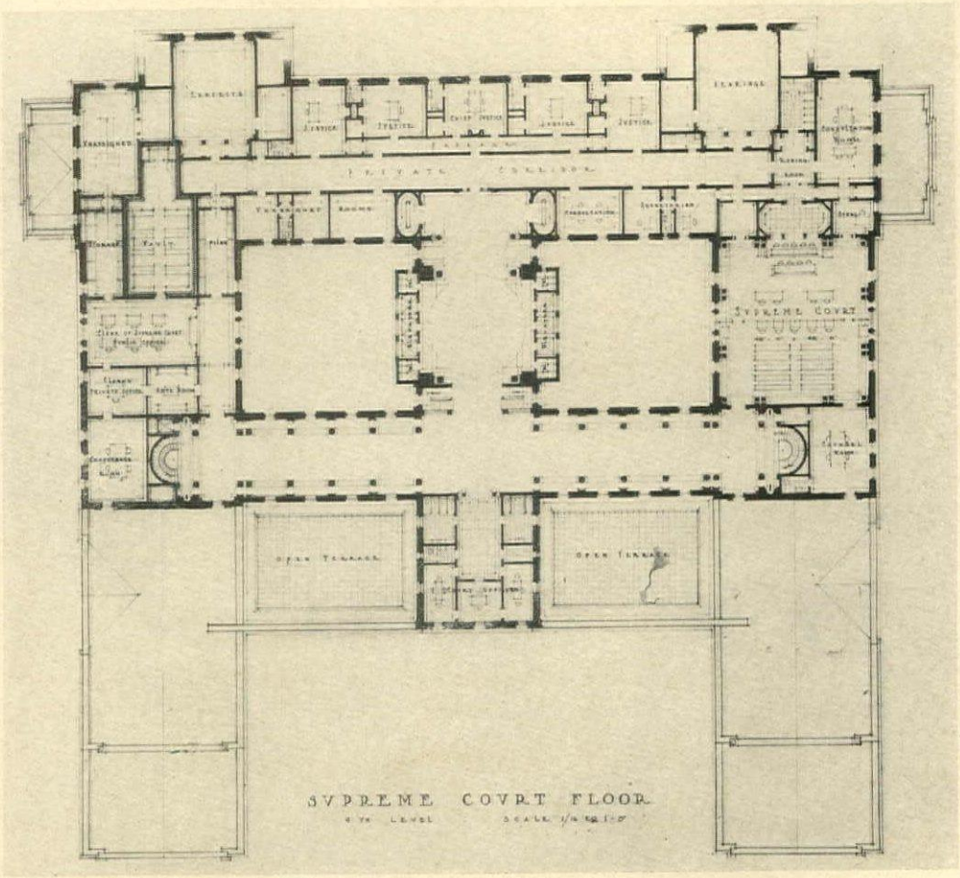


DESIGN PLACED FIRST

COMPETITION FOR COURT HOUSE, PROVIDENCE, R. I.

JACKSON, ROBERTSON & ADAMS, ARCHITECTS

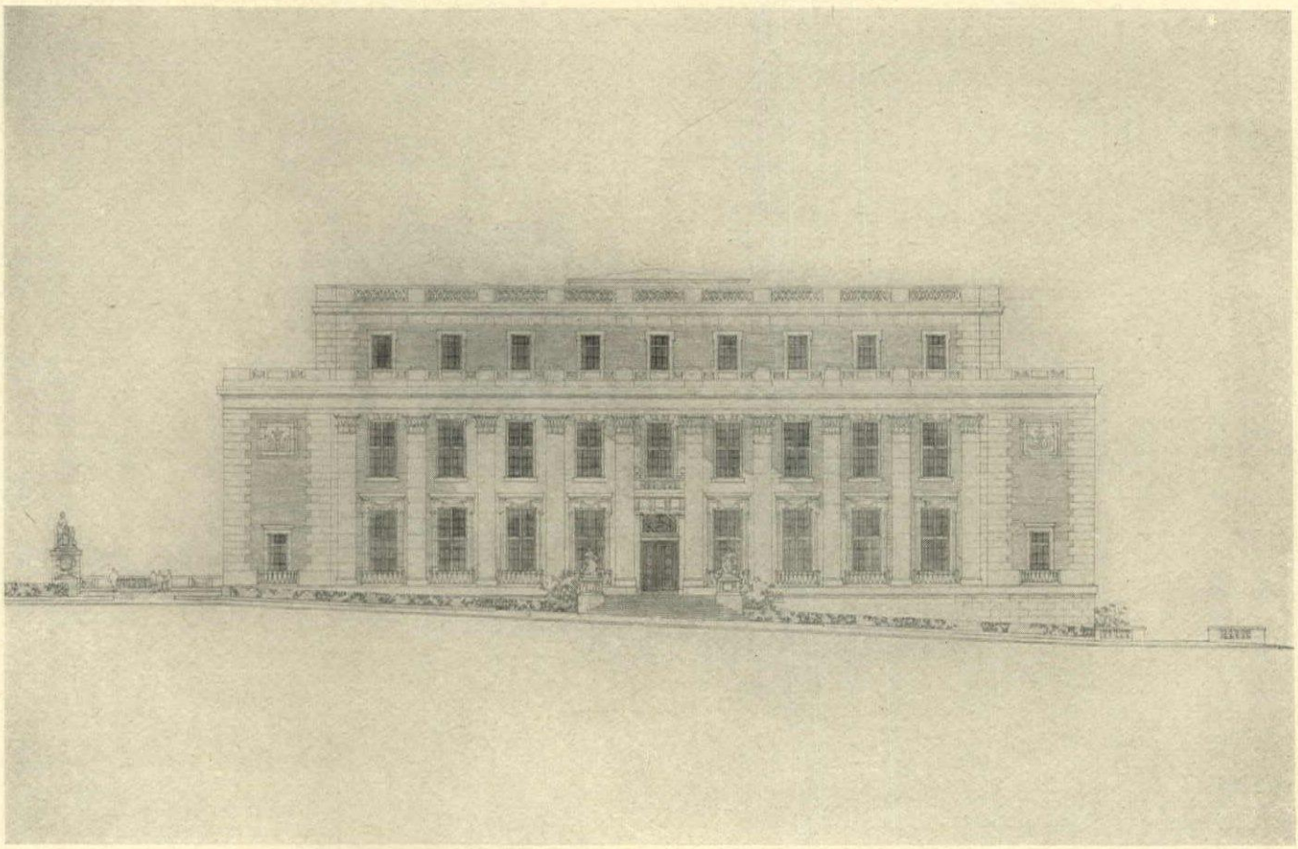




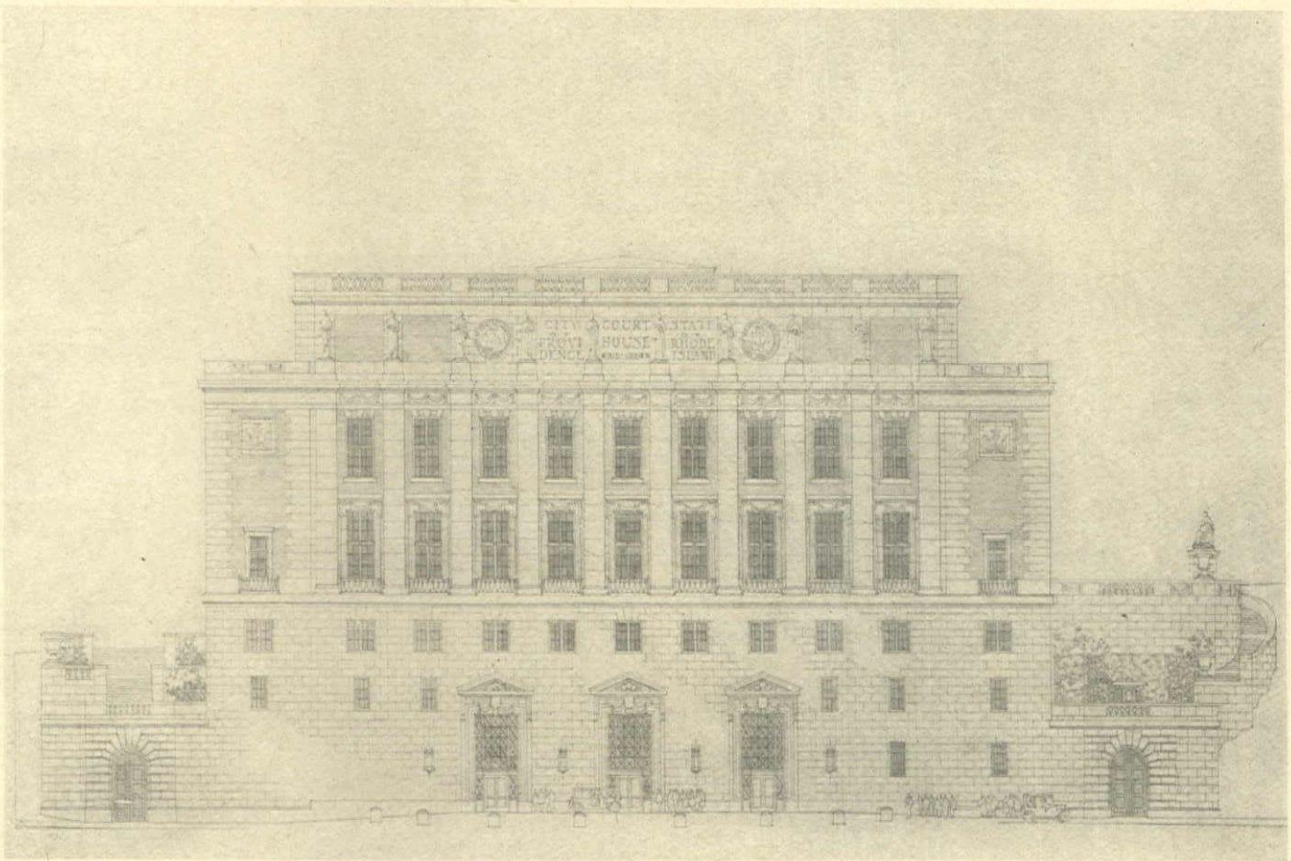
DESIGN PLACED FIRST

COMPETITION FOR COURT HOUSE, PROVIDENCE, R. I.

JACKSON, ROBERTSON & ADAMS, ARCHITECTS



BENEFIT STREET ELEVATION

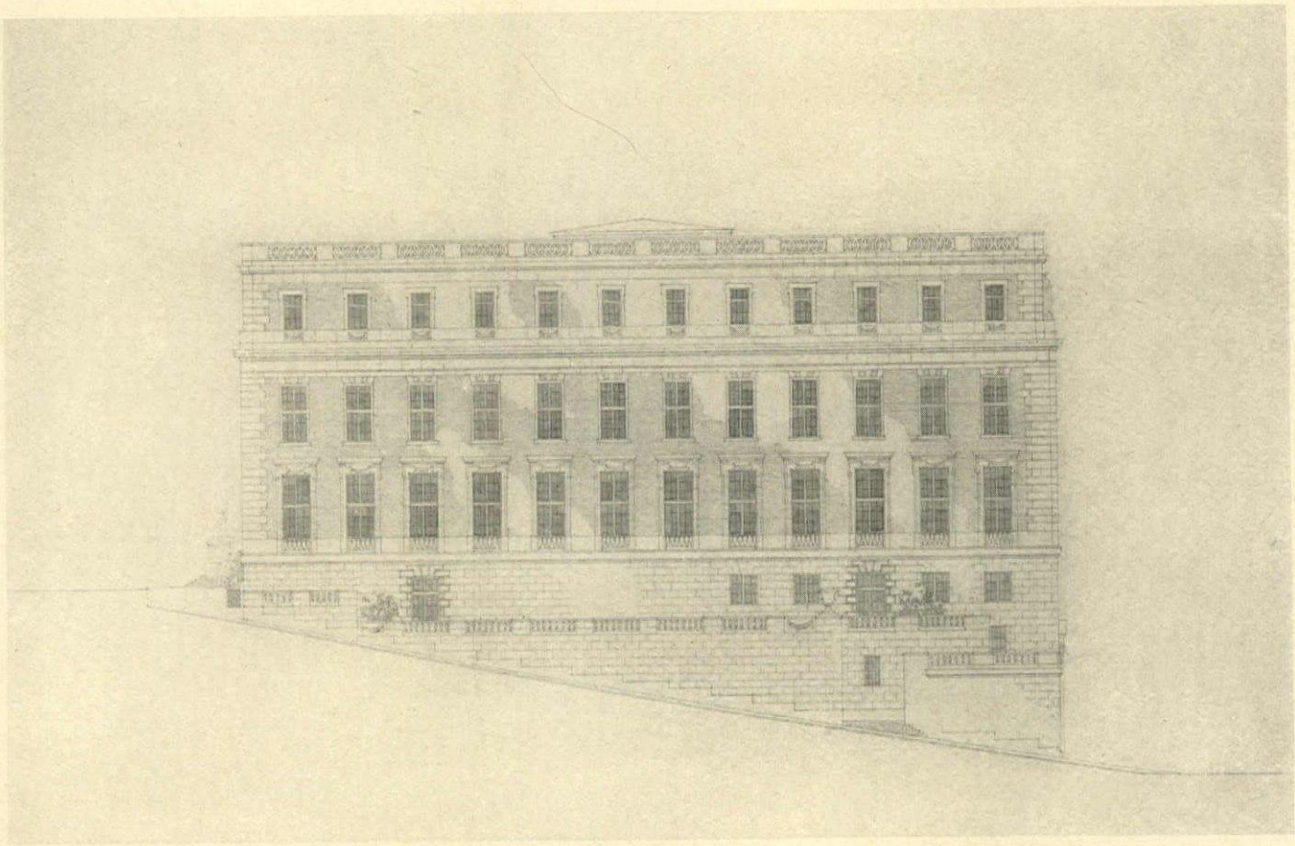


SOUTH MAIN STREET ELEVATION

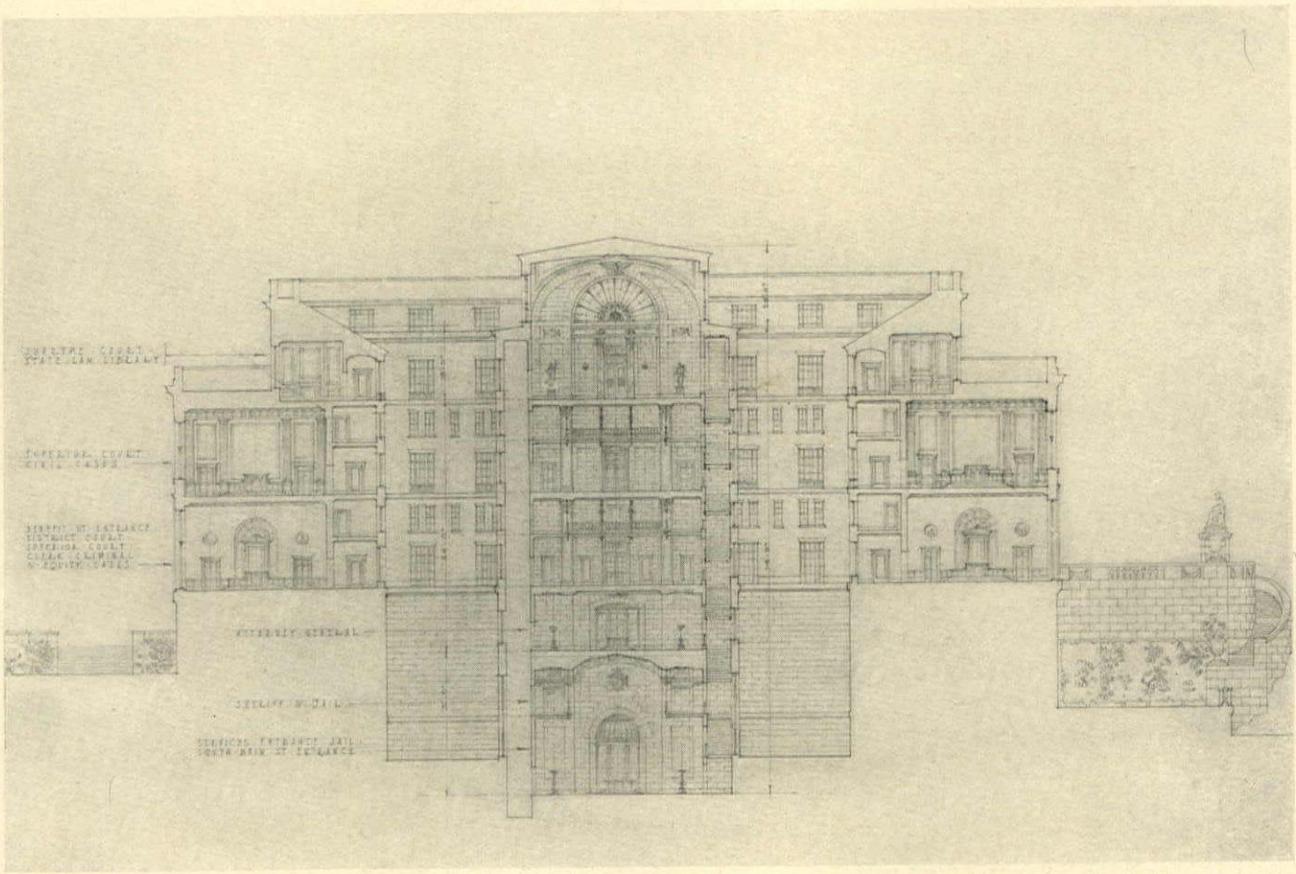
DESIGN PLACED SECOND

COMPETITION FOR COURT HOUSE, PROVIDENCE, R. I.

JOHN MEAD HOWELLS—RAYMOND M. HOOD, ASSOCIATED ARCHITECTS



HOPKINS STREET ELEVATION

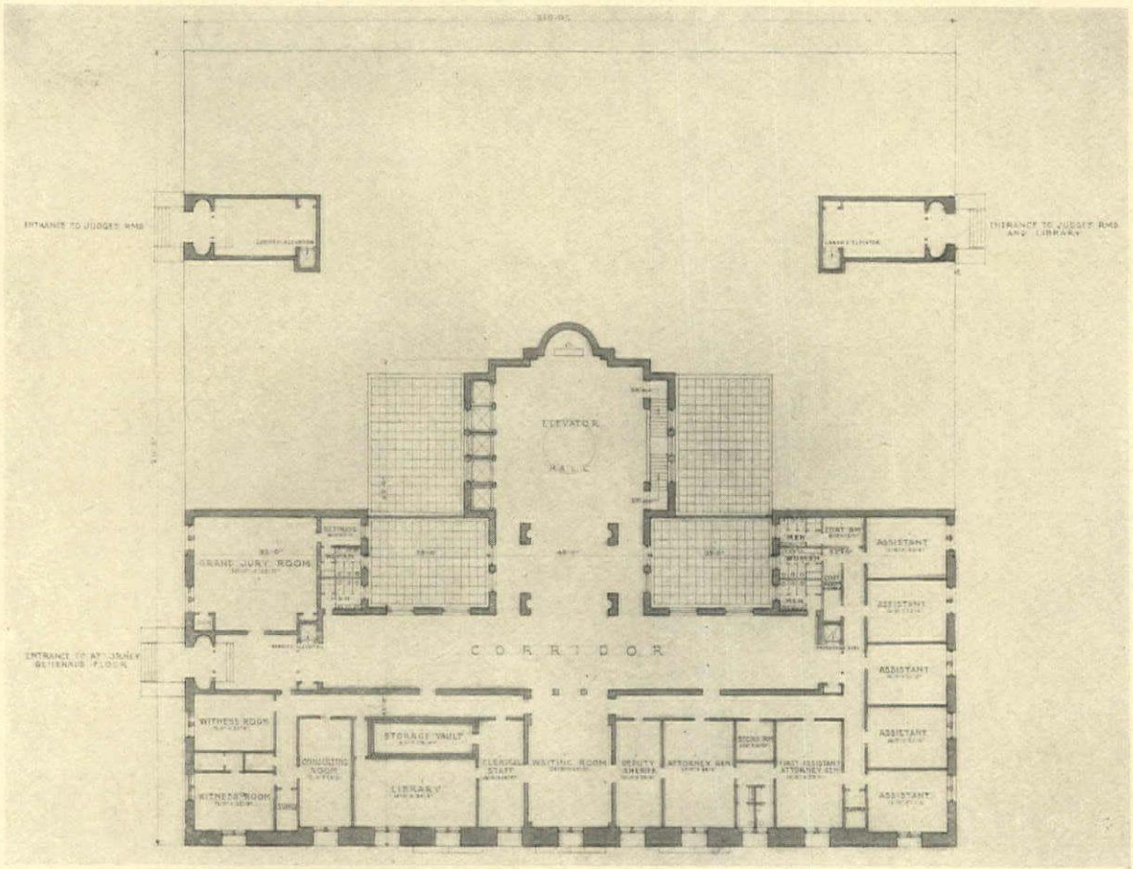


TRANSVERSE SECTION

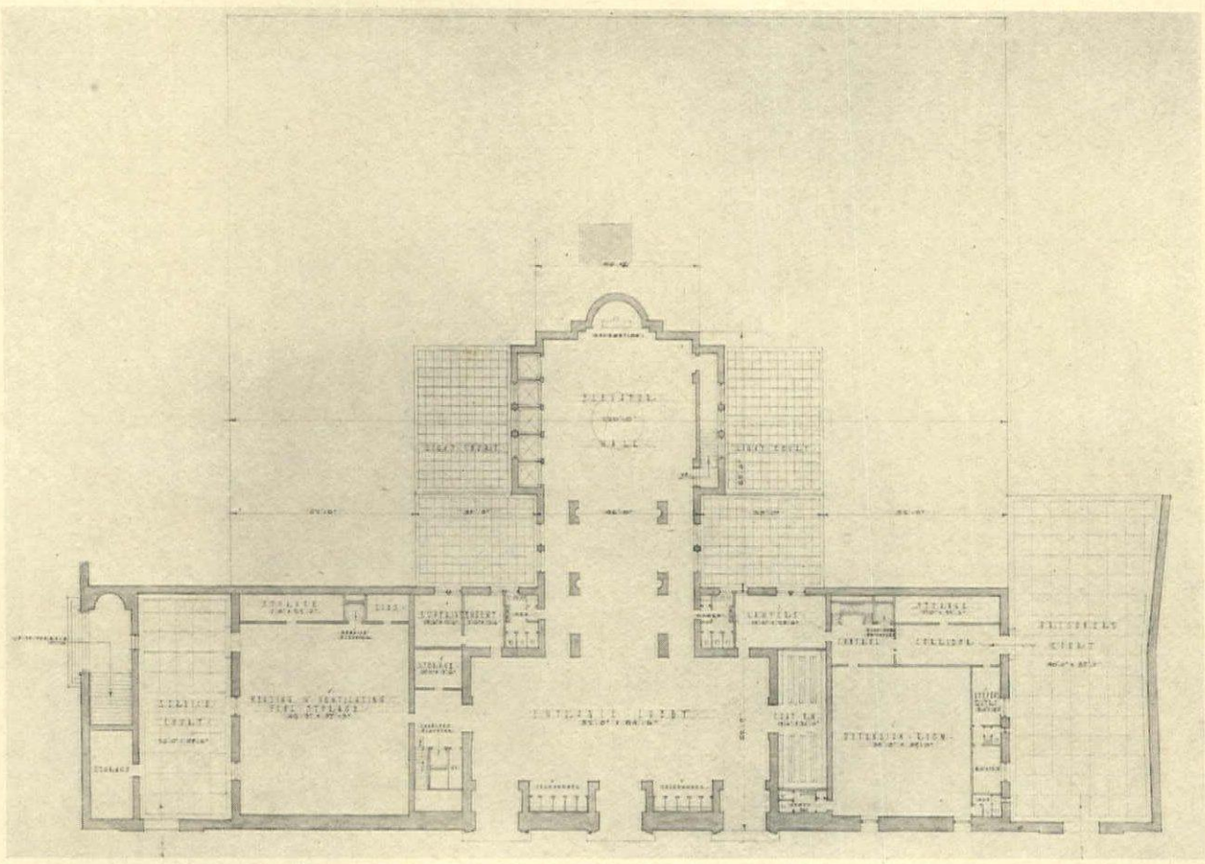
DESIGN PLACED SECOND

COMPETITION FOR COURT HOUSE, PROVIDENCE, R. I.

JOHN MEAD HOWELLS—RAYMOND M. HOOD, ASSOCIATED ARCHITECTS



FIRST FLOOR PLAN

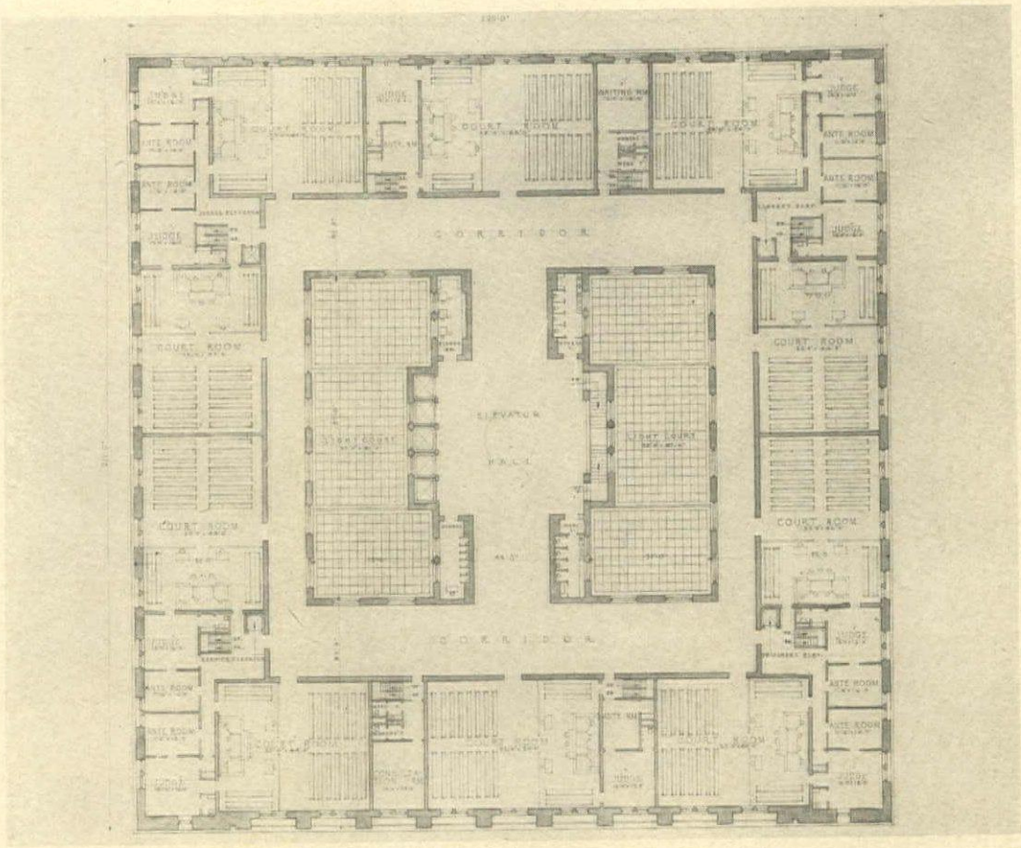


GROUND FLOOR PLAN

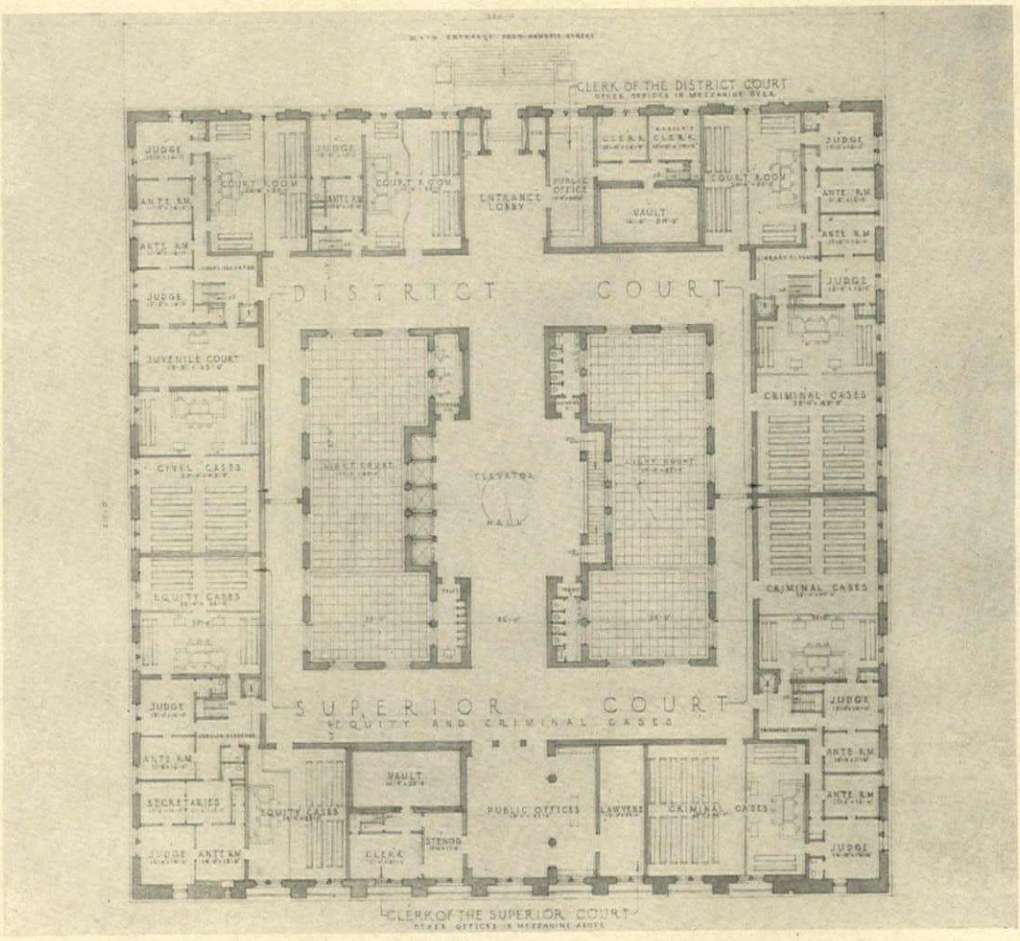
DESIGN PLACED SECOND

COMPETITION FOR COURT HOUSE, PROVIDENCE, R. I.

JOHN MEAD HOWELLS—RAYMOND M. HOOD, ASSOCIATED ARCHITECTS



THIRD FLOOR PLAN



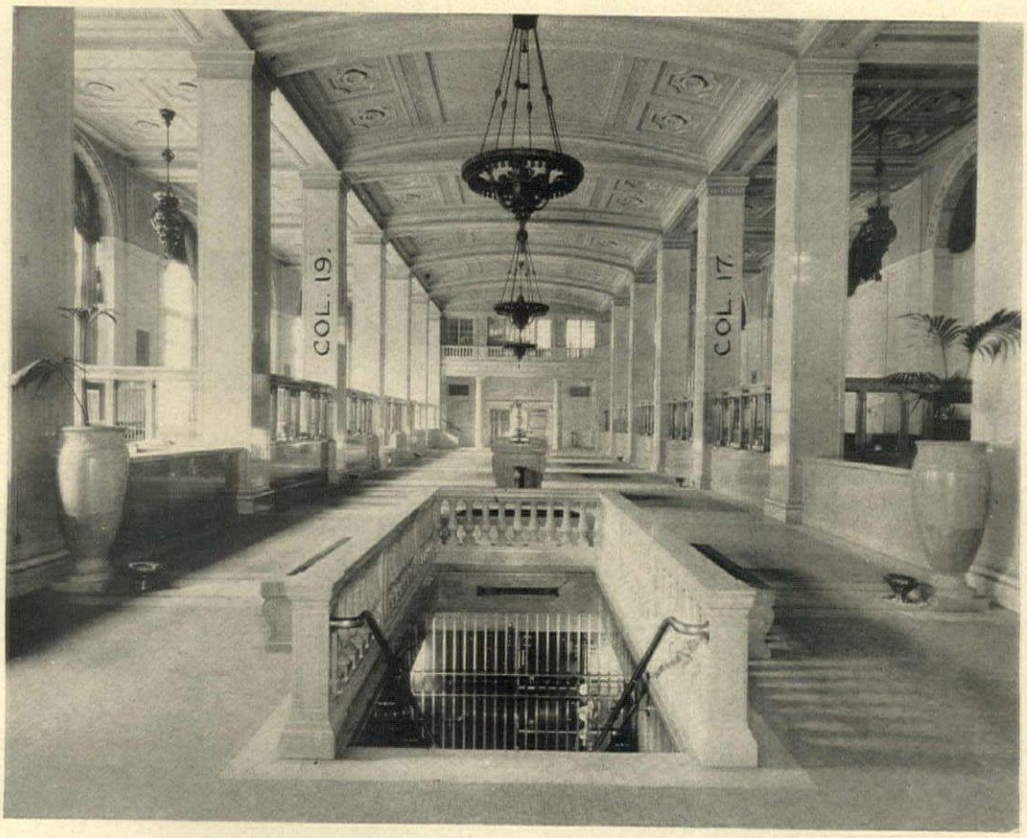
SECOND FLOOR PLAN

DESIGN PLACED SECOND

COMPETITION FOR COURT HOUSE, PROVIDENCE, R. I.

JOHN MEAD HOWELLS—RAYMOND M. HOOD, ASSOCIATED ARCHITECTS

ARCHITECTURAL ENGINEERING



INTERIOR OF THE EXCHANGE NATIONAL BANK OF TULSA, OKLA., AFTER ALTERATIONS AND ADDITIONS WERE COMPLETED. THE NEW COLUMNS 17 AND 19 ARE NOTED

METHODS USED *in* SHORING *and* REMOVING HEAVILY LOADED COLUMNS

Exchange National Bank *of* Tulsa Building, Tulsa, Okla.

BY KENNY JOHNSON, *Member W. S. E.*

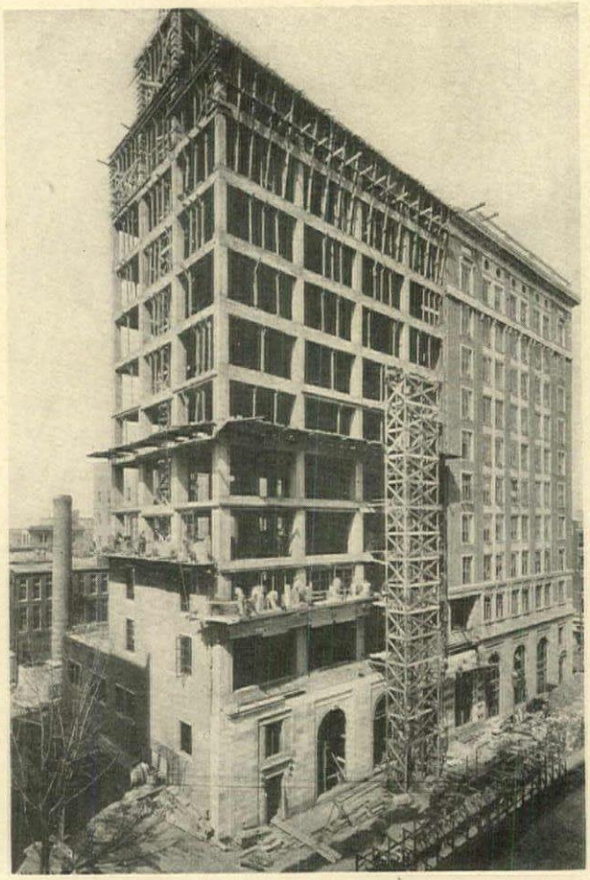
AT the time that the twelve story building for the Exchange National Bank of Tulsa, Okla., was erected (1916) it was thought that sufficient provision had been made for the future expansion of the owner's business. However, in 1922 it became apparent that the provisions made for expansion were entirely inadequate and that an addition to the building would have to be erected on the rear, or South end, for which an area of 75 x 89 feet was available.

The banking room arrangement as shown by the plan indicates in outline the original building, in dotted lines the portions of the original building which obstructed the extension of the banking lobby, and the removal of which was necessary. The addition is shown in the poché. Particular mention is made of the absence of columns in the banking lobby. One of the owner's requirements was that this 32 foot wide lobby be extended through the addition, providing a space free from columns.

The original building was of the reinforced concrete skeleton type with the exception of a row of steel columns on each side of the banking lobby. These columns supported girders in the third floor which in turn supported reinforced concrete columns which extended through the upper stories. At the South (rear) end the wall columns were

located at regular intervals and they were obstacles in making the extension of the banking lobby as desired. On examination of the plan it is seen that columns 17, 18 and 19 were not so located as to permit a symmetrical treatment of the banking room. They were also of greater size than the finished marble columns in the original banking room space. If column 18 had remained in place, it would have stood in the lobby by itself and of course would have been quite objectionable.

These columns were of the usual spirally reinforced concrete type, having cores 32″ in diameter. It was necessary to shift the centers of and reduce the size of columns 17 and 19 and to remove column 18 from the first story entirely.

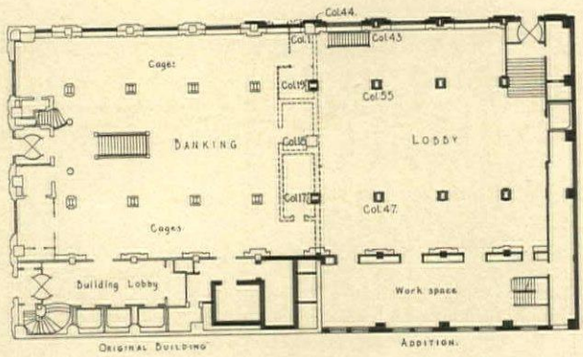


EXTERIOR OF THE EXCHANGE NATIONAL BANK OF TULSA, OKLA., UNDER CONSTRUCTION

The bank officials looked upon this proposition with some misgivings, both from the standpoint of stability of the structure and expense, but they finally decided to invest a certain sum if the work could be successfully done as suggested by the architects. It may be stated that the project was completed at approximately 60 per cent of the estimated cost.

This change made it necessary that three of the four columns in the old South wall should be shored up and cut off. To support the heavy loads without settlement, foundations would be required equal to the existing foundations. Caissons were built adjacent to columns 17 and 19 to support the temporary shoring columns and to resist the eccentricity resulting from the shifting of columns 17 and 19. The new caissons were bound to the old caissons with reinforced concrete collars built near the top.

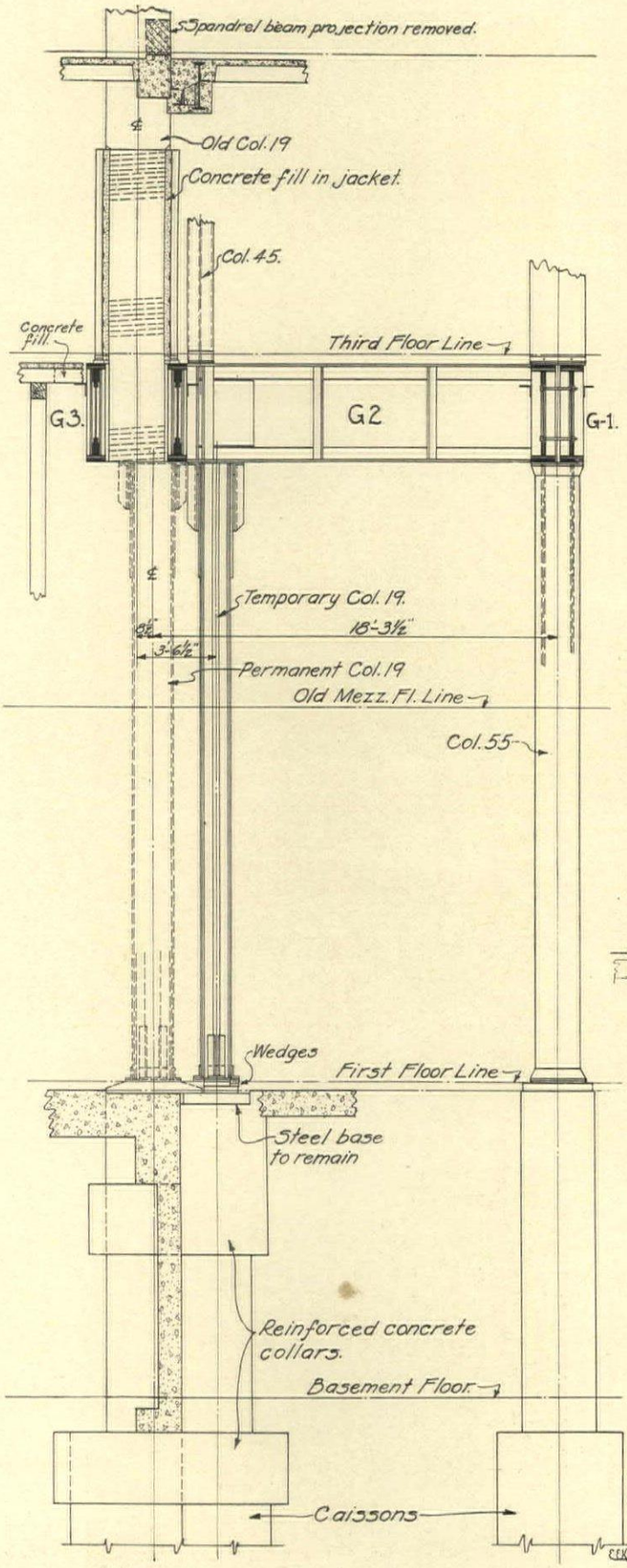
The rearrangement of the girders and columns is shown in the detailed drawings. The tempo-

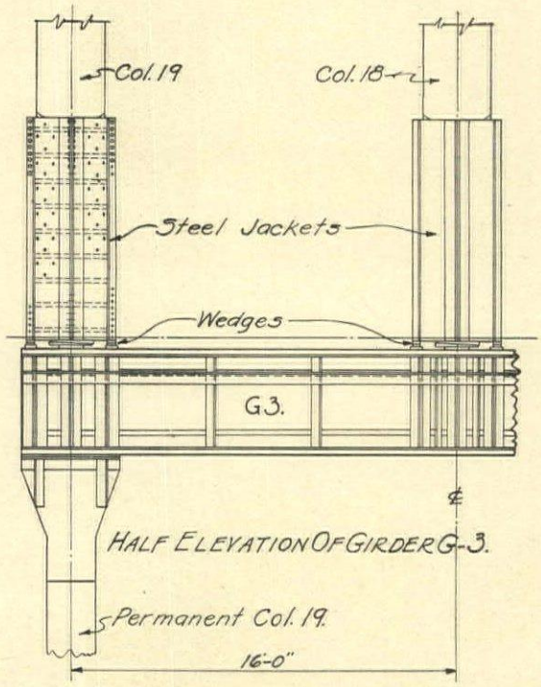


FIRST FLOOR PLAN, SHOWING THE ORIGINAL WORK, THE WORK REMOVED AND THE NEW ADDITION

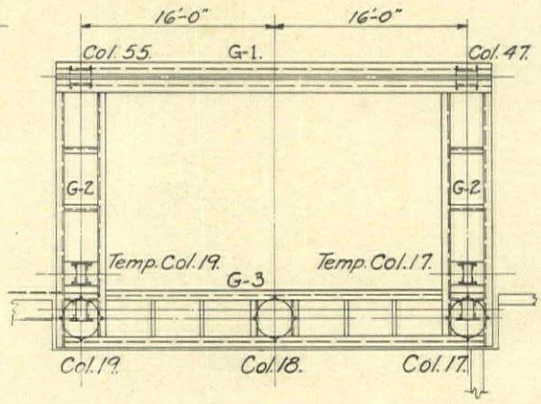
rary columns 17 and 19 were placed on cast steel plates and wedges for the purpose of adjustment and removal. It is evident that a series of temporary shoring girders would be required to support the concrete columns above the third floor, until some kind of permanent supports was provided. It was finally decided to build in permanently the shoring construction and allow it to remain in place. The most important problem was to make sure that the concrete columns would transmit their loads to the shoring girders. To accomplish this it was decided to strip the concrete columns of their fireproofing in the third story, exposing the spirals, and then to encase the columns in steel jackets; the space between the jackets and the old columns to be filled with concrete proportioned of one part of cement, one part of sand and two parts of gravel crushed to pass a ½″ ring. These old concrete columns were allowed to carry their own loads until all of the structural steelwork was in place, the steel jackets placed in position and filled with concrete which was then allowed to age for ninety days before the lower portion of them in the first story was removed.

These steel jackets form the basis of the design. Their inside diameter was 36 inches and they were 9′-0″ high. The bond stress was calculated on the inside of the jackets at about 40 pounds per square inch, and at 45 pounds per square inch on the concrete columns. The jackets were composed of four sections of ½ inch bent steel plates, with vertical angle iron stiffeners for connecting the flanges and bearing lugs. The vertical stiffeners





HALF ELEVATION OF GIRDER G-3.

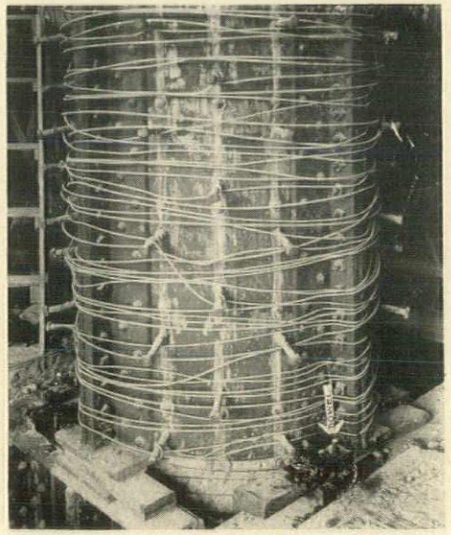


PLAN OF GIRDERS AT THIRD FLOOR.

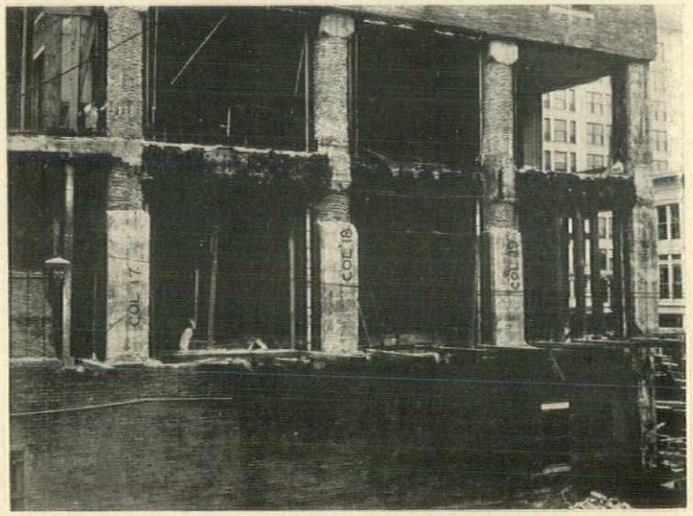
Details of the foundations, the new permanent and temporary steelwork and the method of supporting the old reinforced concrete columns

EXCHANGE NATIONAL BANK OF TULSA BUILDING, TULSA, OKLA.

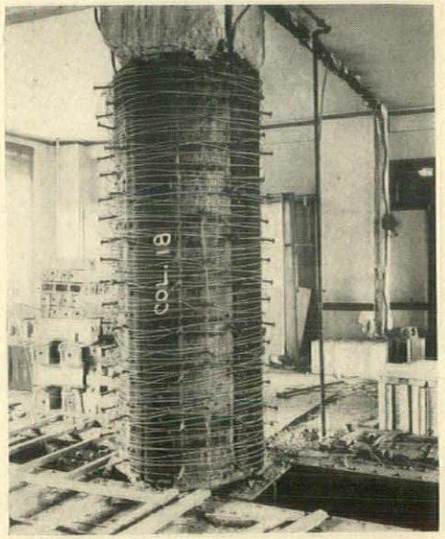
THE WEARY & ALFORD COMPANY, ARCHITECTS AND ENGINEERS



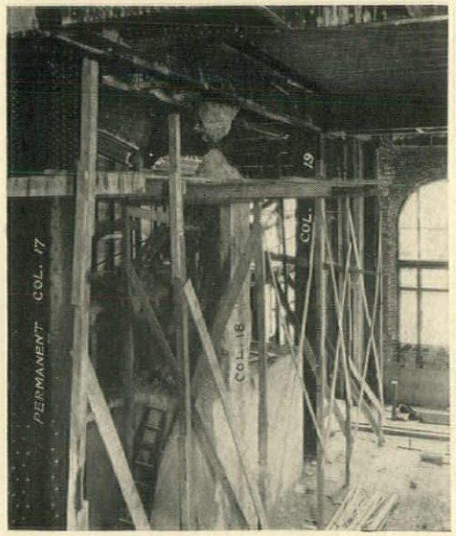
The steel jacket around column 18 has been wedged down to G3 to produce deflection, and wedges pinned in place



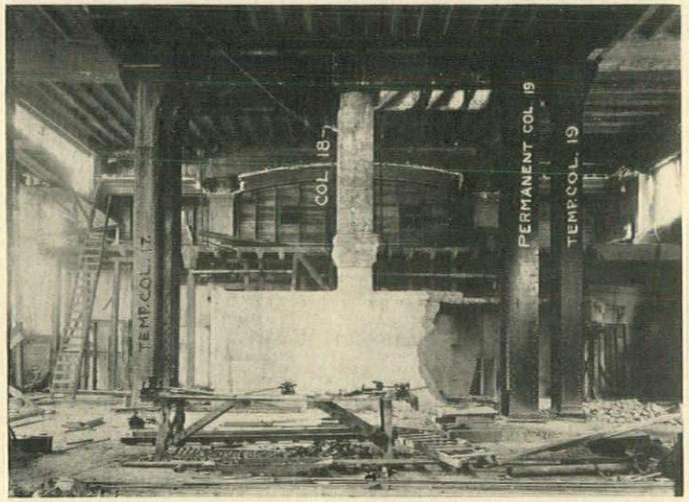
Concrete columns 17, 18 and 19 stripped to permit installation of new steel jackets and girders



The steel jacket around column 18 has been filled with concrete but not wedged to G3



Temporary columns 17 and 19 are removed and the permanent columns are supporting the load. Concrete column has been cut free at top



General view of assembled steelwork seen from new building. Permanent column 17 has been placed, permanent column 19 not in position. Column 18 not removed

Ready to place permanent column 17, the temporary column supporting the load. Note bottom of cut-off concrete column

EXCHANGE NATIONAL BANK OF TULSA BUILDING, TULSA, OKLA.

THE WEARY & ALFORD COMPANY, ARCHITECTS AND ENGINEERS

were bolted together with ¾″ diameter turned bolts inserted in reamed holes. Horizontal bands of 2″ x ½″ steel bars were riveted on the inside of the jacket at intervals of one foot. The rivets through the bands were designed to have a resistance to shearing equal in value to the total load on the column. The jackets were punched with 13/16″ diameter holes 12 inches on centers horizontally and 6 inches on centers vertically. The purpose of these holes was to ventilate the fluid concrete, thus avoiding air pockets in the concrete fill, to observe the pouring and to increase the bond resistance. When the concrete was observed at each horizontal row of holes, ¾″ bolts were pushed through the holes to close them and also to serve as a bond to the jackets between the inside fill and the subsequent fireproofing.

The double girders G2, straddling concrete columns 17 and 19, were cantilevers bearing on temporary columns 17 and 19 and were restrained at girder G1 which was supported on columns 47 and 55. In order to secure the stability of this cantilever it was necessary to build the addition up to or beyond the ninth floor, dead load alone being considered. Girders G2 were designed for the maximum condition of being supported by the temporary columns 17 and 19 until the permanent columns were in place. These girders were then more than capable of carrying the eccentrically located original concrete columns 17 and 19 and also their proportion of the load from column 18.

The double girders G3, straddling column 18, had their bearing at the ends of the girders G2. The connection of the girders G3 to G2 was made strongest at the inside of girder G2, which would receive the load first. The outside connection was made equal to one-half of the reaction plus the loads from columns 17 or 19. This approximated a condition of fixed ends.

When all of the steelwork was erected and the temporary columns wedged up tight, steel wedges were driven between the ends of the jacket stiffeners and the tops of the girders and diaphragms under the columns 17 and 19. The girders G2 and the temporary columns received their initial stress. The concrete columns 17 and 19 were then cut out one at a time and replaced by the permanent columns.

The calculated deflection of the girders G3 due to the load transmitted by column 18 was 3/16 inches. The girders were therefore wedged down as far as possible, which, however, only amounted to ⅛ inch, and the wedges were locked. The wedging operation also tended to produce stress in the concrete fill in the jacket and thus afforded a test of the sufficiency of the bond. Column 18 was then cut away beneath the girders G3 and also part way up between the girders and then six short, heavy-weight 9 inch I-beams, supported on the bottom flanges were installed under the column. No deflection occurred after the removal of column 18. The space between the column ends and the girders was then filled with concrete and the steel jackets were fireproofed.

Numerous other minor operations were necessary to join the two structures together permanently at other column connections and at each floor level. A definite sequence of operations was planned and adhered to throughout the construction. The fact that the architectural sketches were approved in August, 1922, and the upper stories occupied by tenants in July, 1923, gives evidence of the close adherence to the program. The structural frame of the addition was actually completed before the columns were cut out and the brick curtain walls of the old South building line removed.

One difficulty encountered was the concrete spandrel beams which projected above the floor lines in the old South wall. These projections would have to be cut off to provide uninterrupted floor levels between the old building and the addition. Additional columns 44, 45 and 46 adjacent to old columns 1, 19 and 17 were provided to carry the ends of the beams in the addition. Column 44 started at the first floor line and terminated at the roof. Columns 45 and 46 started from the diaphragms between girders G2 and also terminated at the roof. Before the projection of the old concrete spandrels was cut off a line of steel beams was installed at each floor between columns 44, 45 and 46; these new steel beams had shelf angles which engaged with the shelf angles on the old beams. The space between the old and new beams was filled solidly with concrete as shown in the detail. In this way the new steel beams carried the new slab and a portion of the load on the old beam, thus, with the removal of the wall load, compensating for the loss of the section.

The Weary and Alford Company, of Chicago, were the architects and engineers, with Gardner C. Coughlen acting as supervising architect, and the writer and S. E. Berkenblit as engineers. Hans Von Unwerth of Kansas City, Mo., acted as consulting engineer for the owner and credit must be given him for much helpful criticism of proposed methods and design. The construction work was done by W. H. Horster, contractor, Tulsa.

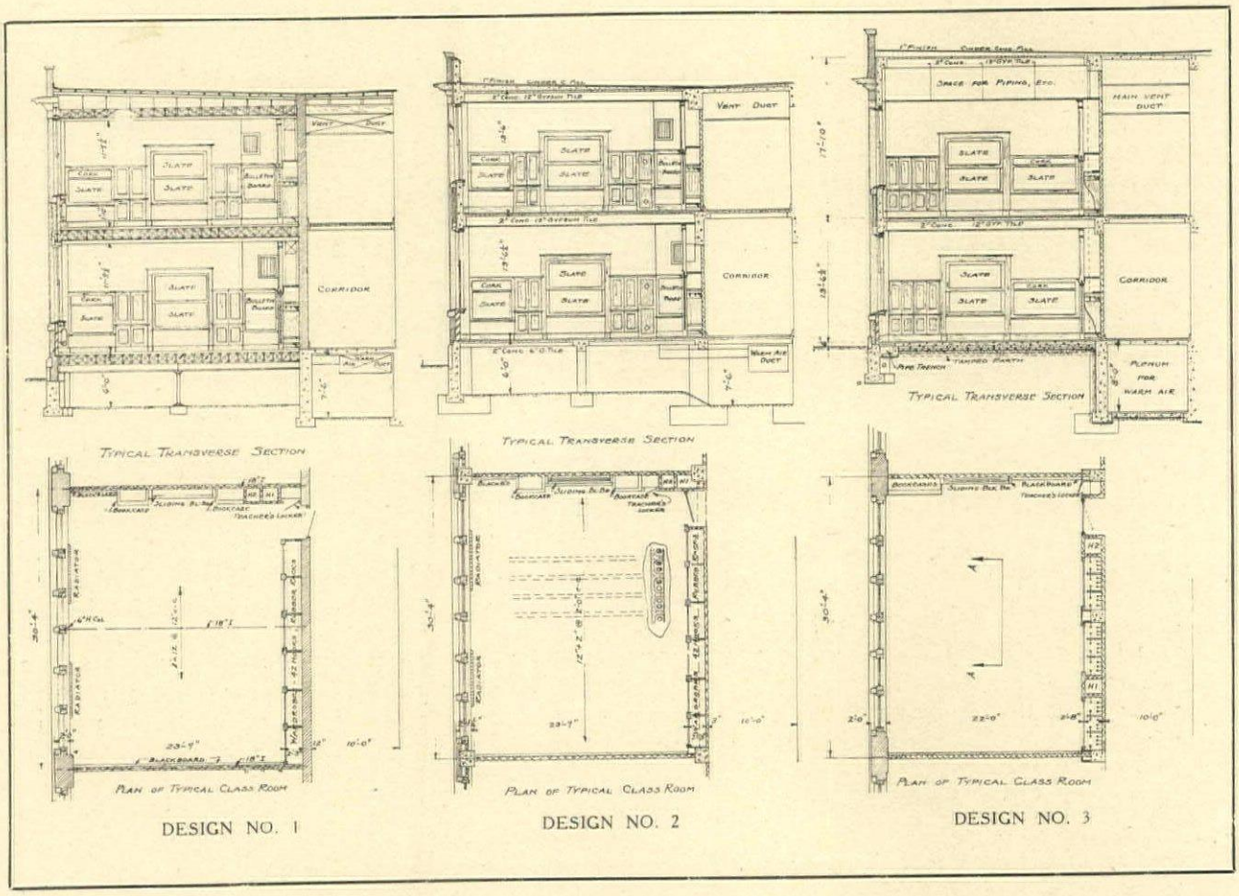
A COMPARISON *of* THREE TYPES *of* SCHOOLHOUSE CONSTRUCTION

BY A. R. REILLY, C. E.*

WITH the increased need for more schoolhouses has come an increased cost of construction. This condition has naturally led to investigations to determine what can be done to secure a maximum accommodation with a minimum of cost consistent with good planning and construction. It is a necessary and interesting problem for architects interested in schoolhouse construction.

Official bids received in June, 1923, by the Board of Education of Rochester, N. Y., furnish valuable information and indicate among other things that a fireproof building of reinforced concrete skeleton can be built for less than six per cent more than one of the ordinary, fire-resisting type. Three sets of drawings were made for three distinct types of construction. Each of the buildings was planned to accommodate the same number of pupils and the plans were practically alike. The kind of construction was different in each design, namely:

Design No. 1 is of the ordinary type with wood joists and floors in the classrooms and with fireproof construction in all corridors, stair halls and toilet rooms. Steel beams support the wood joists of the floors and roof, spanning the classrooms transversely and resting on exterior and interior brick bearing walls. The partitions between classrooms and around flues are built of hollow gypsum tile. Light, No. 24 gauge, tin-pan concrete slabs form the corridor and toilet room floors while the roof system over classrooms and corridors is of wood construction. An excavation of approximately 5′-0″ under the entire first floor provides space for steam and hot air pipes which keep the floor warm and dry in Winter. The assembly hall is of structural steel and brick construction.

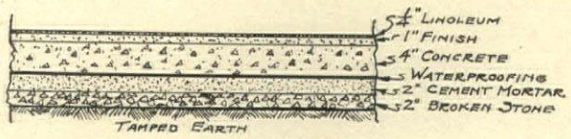


DESIGN NO. 1 DESIGN NO. 2 DESIGN NO. 3

*Structural Engineer, Board of Education, Rochester, N. Y.

Design No. 2 is of the fireproof type. The frame is a skeleton of reinforced concrete supporting exterior walls of hollow clay tile veneered with face brick and interior partitions of hollow gypsum tile except in stair towers which are of solid gypsum tile. The floors and roof are of the one-way type, using 6″ and 12″ gypsum tile. The assembly hall is of structural steel frame with fireproofing of brick and gypsum tile. The excavation under the first floor is similar to that of design 1.

Design No. 3 is an embodiment of the ideas of a consulting architect employed by the City of Rochester to suggest means by which the cost of school buildings might be reduced. It has brick bearing exterior walls with a reinforced concrete skeleton supporting the interior. The assembly hall is similar to design 2. An intermediate column is inserted in the corridor side of each classroom. The first floor is laid directly on the ground, necessitating an attic which provides space for piping. A pipe trench around the exterior walls contains the system of return pipes to the boiler. A drainage system is also provided to prevent moisture under the first floor. Concrete plenum chambers are built below the first floor corridors from which fresh warm air is supplied for ventilation.



Section A-A - First Floor

DESIGN NO. 3

The summations given below are the totals of the low bids received separately for each branch of the work, all contractors having equal rights on the premises. Designs 2 and 3 called for alternate figures for a twelve room addition. Design 2 as drawn, without the addition, provided for more of the completed job than did design 3, which is one reason for the non-conformity of differences in summations. The official bids were tabulated as follows:

	Without Addition		With Addition	
	Cubage	Total Amount of Low Bids	Cubage	Total Amount of Low Bids
Design No. 1	1,056,556	$411,577.50		$.....
Design No. 2	1,056,556	435,252.01	1,245,917	513,016.41
Design No. 3	1,089,774	444,187.70	1,396,265	581,334.15

Many alternate figures were received. The fireproofing of steel beams and columns above the basement in design 1, as required by the city code, would cost an additional $6,000.00 as bid. To complete the sprinkler system in design 1, an additional $2,500.00 is necessary.

In design 2, wood floors in the classrooms, on wood sleepers in cinder concrete fill, would cost $2,314.00 more than linoleum as specified. Although official bids were not received for two-way tile floors on this design, it has been estimated that a saving of $10,000.00 could be effected without taking advantage of the decreased floor thickness.

Design 3 with a cinder brick instead of the face brick specified would save $3,592.00. Two-way tile floors would cost $2,835.00 more than the gypsum tile floors specified and heavy, cross-ribbed tin-pan floors would save $7,147.00.

One can readily see from an examination of the mass of bids received that the economy of design 2 lies in the reinforced concrete skeleton feature because 85% ($58,100.00) of the difference between designs 2 and 3 is in the masonry figures. The heating, plumbing and electrical figures showed a saving for design 2 of 3% ($2,000.00) plus the cost of metal ventilating ducts of design 2. This is largely due to the fact that the exposed wall area of design 2 is 8,300 sq. ft. less than that of design 3. This is slightly offset by better facilities for piping and conduit work in the attic of design 3.

It should be noted that the classroom width of design 3 is reduced to 22′-0″ whereas the Rochester standard of 23′-9″ is used in designs 1 and 2. An analysis of floor areas of the different designs follows, based on "The Candle of Efficiency" as published by the Committee on Standardization of School Buildings of the National Education Association:

	Without Addition	With Addition		
	Design No. 1	Design No. 2	Design No. 3	N. E. A. Average
Walls and Partitions	7.10%	6.80%	6.94%	10.00%
Flues	1.80	1.75	1.54	3.00
Corridors and Stairs	22.70	20.15	22.02	20.00
Accessories	.00	.00	.00	1.00
Instruction	54.70	59.00	55.00	50.00
Administration	13.70	12.30	14.50	16.00
	100.00%	100.00%	100.00%	100.00%

All of the reinforced concrete is designed in accordance with the Joint Committee Rulings of July 1, 1916, with a few exceptions, which are considered ultra conservative. The live loads of 70 lbs. per sq. ft. for classrooms and 100 lbs. per sq. ft. for assembly halls are considered excessive by some. However, the department has made a study of the effects of physical exercises carried on in our classrooms and assembly halls and is convinced that school buildings should be designed to carry these loads safely.

Although the light No. 24 tin-pan slabs were specified for corridors and toilet rooms in design 1, it is not accepted as first-class construction. The pans frequently collapse under ordinary pouring conditions. This permits the flow of concrete on the metal ceiling lath, increasing the estimated load on it and also increasing the weight of the floor. It also results in a waste of concrete and

often in the corrosion of the lath before plastering, which weakens the lath, and also entails an expense for cleaning before plastering.

The general scheme of building design 1 is familiar to all. It is not fireproof and lacks structural unity. The piece-meal method of building, involving laying off and re-employing men, is less economical than the method employed in design 2. Constructing the skeleton completes the concreting operation before bricklayers are needed on the job. This piece-meal method affects the construction of design 3 also. Design 2 with its monolithic skeleton was enthusiastically approved by most of the masonry contractors as indicated by the bids. When such a concrete frame is completed it is then a matter of filling in with tile and brick and so on down the line to the completed job. Contractors were allowed to bid on two-way tile floors as an alternate in this design. Although the bid was not formal, a saving of more than $10,000.00 is indicated. It affords a better base for the plastering of ceilings and a better floor structurally than the one-way floors, in that it lends itself better to the light loads and panel dimensions of schoolhouse construction. The girders placed in the peripheries of the panels result in a better distribution of the loads to the columns and reduce the amount of unbalanced moments transmitted thereto. The tie-through gives structural unity. The saving of plaster and more simple form work appeals to the contractor, resulting in reduced cost.

A structural steel skeleton was used in the assembly hall as it was the most economical because of the spans and balcony conditions encountered. Gypsum blocks were used for the fireproofing of the girders in order to reduce the dead load. Design 2 provides for the use of metal ducts for the ventilation system in the basement, which are more economical than the concrete plenum chambers used in design 3.

An intermediate column was placed in the corridor side of the classrooms in design 3. The minimum diameter of this column is determined by its height rather than economic design. Because column forms cost more per square foot than girder forms, their elimination, as in design 2, would effect a saving of $1,200.00. These columns also displace valuable floor space in the wardrobes.

The greater exposed wall area of design 3 gives a larger area for heat transmission and the solid wall has a higher coefficient of loss than the 4″ brick veneer and the 6″ hollow tile backing of design 2. The solid brick wall also costs more to construct. The floor of the attic, a suspended ceiling, must be designed to carry a live load as men must repair piping in this space at times. Leaks would corrode the metal lath and rod hangers, thus causing the ceilings of the second floor to become discolored. It is also an inconvenient place, whereas in design 2 all piping is in the basement.

The first floor, placed on the ground in design 3, is not considered good construction. Many years of experience with such floors lead to the conclusion that not only are they damp, cold and unsanitary but very costly to maintain. Notwithstanding the precautions taken to reinforce and waterproof them, cracking of the sub-slab is bound to occur and allow moisture to penetrate and rot the wood sleepers and flooring or linoleum, thus requiring frequent replacements. In kindergartens where children are on the floor a large part of the time it is undesirable, and in the grades the children and teachers complain of cold feet. On most school sites there is usually opportunity for using the excavated material as in design 2 for filling or terracing. Concrete trenches are necessary under the first floor for cross branches and conduits which further increase the cost.

In designs 2 and 3 the linoleum is cemented directly to the 1″ mortar finish of the concrete floor slab. In the corridors and toilet rooms the cement cove base is recessed the thickness of the linoleum back of the face of the finished wall. At the top of this base is placed a metal ground strip. The linoleum is then cemented to the floor and cement cove base, making a continuous floor and base finish. This method of continuous floor-base finish has not had extensive and long use; experts agree that it is a great improvement over the moulded base and flat floor strip. Although the cementing of the linoleum prevents creeping, an allowance for a slight expansion is made below the metal ground strip at the top of the base.

Much could be written about the maintenance cost of the different designs. It is apparent that the average annual maintenance charge during a period of years against design 2 would be considerably less than for design 1. The latter is not structurally equal to design 2 and naturally would have more unequal settlements, cracking and depreciation. The greater amount of radiation required in design 3, the suspended ceilings and the first floor construction, would undoubtedly increase the cost of upkeep to exceed the percentage of the excess cost of design 2.

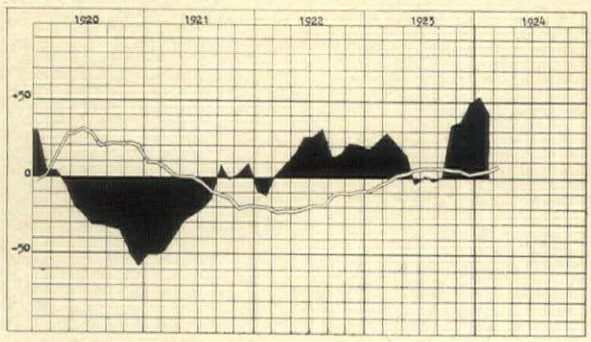
Although some argue that the rapidly changing educational methods do not justify permanent buildings, it is quite reasonable to assume that the increased protection to life and property is worth such a small difference in cost as is here indicated. If we further offset this difference in initial cost by the low maintenance charges attributable to the fireproof type of construction, then it would be good business to construct buildings of that kind.

ECONOMICS *as* RELATING *to* ARCHITECTURE

FEBRUARY building did not measure up to expectation; or, stated more significantly, the volume of new building actually undertaken in February did not fulfill apprehensions. It is truly well for the industry that the unusual amount of new construction, which was started in January, was not sustained, for it would undoubtedly have brought forth a menacing rise in costs.

Now whether the decline in February building is introducing a major recession, or whether it is simply a minor reaction produced by seasonal influences, remains to be seen. Much building is yet to be done. Projects upon the boards are rather heavy in the aggregate. Nevertheless, it is a most important and a rather ominous fact that costs are now at a high point in this movement, the highest point reached since 1921. After the seasonal correction had been applied to January's building, it disclosed an accomplishment that was positively extreme. Such a pace could not have been maintained for long without a severe advance in costs. Building during the coming months is expected to remain above the normal line, but the steady rise in costs, an obvious prospect, very strongly suggests a more moderate appearance of new business later on in the year.

VOLUME OF BUILDING AND BUILDING COSTS



The trend of the curve of building costs is toward higher levels, which would indicate that the volume of building was tending to move at a more moderate pace. The black areas above and below the normal line represent the volume of construction reported in 27 states by the F. W. Dodge Corporation and expressed in square feet. The double line curve is the trend of the index of construction costs computed by the *Engineering News-Record*. The average of the years 1919-1923 is taken as normal, and the volume curve is corrected for seasonal variation

The volume of new contracts awarded in February, measured by the square feet of floor space in each job begun, ordinarily increases about 3 per cent over January. But February, in an unexpected movement, revealed, in the 27 states reported by the F. W. Dodge Corporation, a decline of about 4 per cent in contrast with January. The volume of construction, which, under the impetus of an insistent demand, favorable weather, and an easier trend in costs, rose 53 per cent above normal (the average of the years 1919 to 1923) later sacrificed 12 points, receding to some 41 per cent above normal in February. Contracts awarded during these first two months, however, were more than 20 per cent in excess of last year. That certainly was a most unusual beginning, statistically.

The amount of new construction started in March had not yet been published at the time this article was prepared, but, based upon the experience of the past four years, March building expressed in units of square feet of floor space usually surpasses February in the 27 Northeastern states by about 40 per cent. While early reports have indicated that new building is still progressing above normal in the aggregate, there is no positive assurance yet that final statistics will either sustain these earlier indications or that the total volume of building undertaken during the months immediately ahead will hold the high altitudes so definitely claimed by the late Fall and early Winter seasons. During the past four years March has proven to be the period in which the onrush of Spring business is the most pronounced. This surge of new construction usually reaches its peak in April, when the index of seasonal variation advances above that of March by about 5 per cent.

A very interesting and important statistical picture of conditions underlying the building trade today is sketched in *The Annalist*, of March 24, by Thomas S. Holden, statistician for the F. W. Dodge Corporation. Mr. Holden points out that since the war, building and construction has attained its greatest intensity in the larger cities, and he shows how the enormous amount of activity that is transpiring in both Chicago and New York, more than offsets a moderate decline

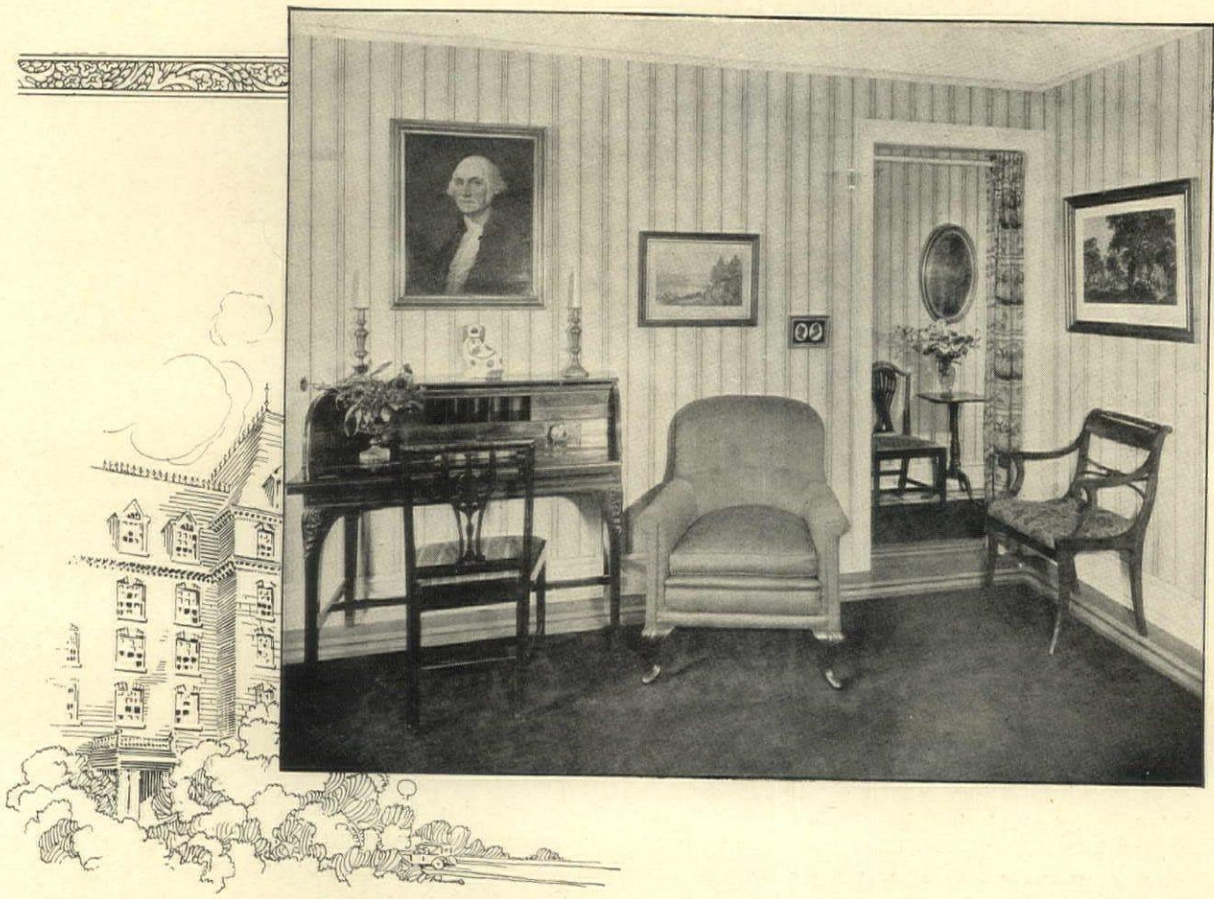
in building in the country outside these two cities. For example, the dollar value of contracts awarded in the thirty-six Eastern states, which include about seven-eighths of the total construction volume of the United States, during the first two months of the year amounted to $601,881,000 compared with $525,277,000 for the corresponding period of last year. A marked increase of about 15 per cent in favor of 1924 is obvious. Now, statistics of a similar period in New York City, according to Mr. Holden, show an increase of 84 per cent over last year, and in the case of Chicago a 61 per cent increase is revealed. But, and this is a most important contrast, if the figures for New York City and Chicago are deducted from the grand total of contracts awarded in the thirty-six Eastern states, then the first two months of 1924 disclose a decline of 2 per cent in contrast with 1923. In this way the slight recession that has been general all over the country has been obscured by the enormous volume of building in these two great cities. Two months, however, are hardly sufficient time to establish a trend, and Mr. Holden does not say that these conditions obtained in October, November, or December. Assuming that it has only existed since the first of the year, it still represents a significant movement, for the intense activity in these two metropolitan centers is attributed chiefly to speculative enterprise, a type of business suggesting dismal possibilities. Again the villain seems to be dominating the play.

It is to be regretted that new contracts have been undertaken in a volume running from 25 to 50 per cent above the average of the past five years. Such a condition is one of weakness rather than of strength, for being an extreme movement itself it begets instability. It usually signifies a relatively heavy turnover of improved property at high valuations. Costs mount and soon reach prohibitive heights that preclude further extension and development. Then the public quits the market. Reappraisal, recession and readjustment invariably follow. In a saner and more moderate pace the danger of overbuilding is reduced, the rise in costs arrested, and stability fostered and encouraged. The most profitable progress is always that which is most firmly established. Repeated extremes of activity and passivity inspire and enrich, then dishearten and impoverish, and are very enervating. They destroy that equipoise and balance, that nice harmony of interests which is so essential to lasting and true economic progress.

Demand in the building industry springs from several sources. The most important origin, and perhaps the one making the heaviest contribution, is the growth and shifting about of the population. Now, demand due to increases in population is usually perceptible only when the achievements of a number of years are put side by side for purposes of comparison. It is only when radical redistributions are made within a comparatively short space of time that the influence of the population upon the industry is most keenly felt. During the entire war period the trend of the population was away from the country and toward the city. War in Europe was destroying materials as fast as the world could produce them, and the demand for the products of our industrial centers reached great heights. This profitable operation held a wonderful attraction for the country laborer, and the movement which was started then persists today.

When the United States declared war in 1917, the shifts that occurred in the population were still more radical and on a scale unheard of before. The mobilization and training of our huge fighting machine resulted in the heavy concentration of people in our port cities and in those municipalities near army cantonments and camps. In these districts the supply of shelter was a real problem throughout the war, but in the country and cities outside of these districts the situation was relieved. Normal building requirements here were forgotten in the press of war work, and it was not until after the cessation of hostilities, when the population began to drift back or to settle permanently in their new localities, that the neglect of our normal building program was apparent. A deficit of astonishing proportions had accumulated. Peak costs in 1919 and 1920 delayed the work of effectively eliminating this deficit until 1922. Then followed two years of building which was so heavy that the industry was operated at capacity. It is generally felt now that another ten months of active construction will practically eliminate the deficiency.

As a factor in demand this scarcity of shelter has been rather intangible and elusive, particularly in its later stages. For the most part its proportions can be defined only by conservative opinion and careful conjecture. In 1922, when the need for building was most keenly felt, the units of society seeking shelter exceeded the number of shelter units in existence. Discomfort, amounting in some instances to distress and suffering, was the result. Heavy building relieved this emergency in about a year. Then a new type of demand sprang up. The prosperity of the construction industry had been a major influence —as it continues to be today—in a general industrial revival, and living standards were again rising from the depths of the industrial depression of 1920 and 1921. Demand arising out of improved standards of living is hard to measure, and its ultimate significance is difficult to gauge. Its appearance in the form of an awarded contract, for example, depends upon the trend of confidence, the general industrial outlook, the direction in which costs are moving, the yield of the



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investment, and the abundance of credit. Relieved of the pressure of positive urgency this type of demand is less assertive and more calculating and subtle. Even when conditions are reasonably known, the psychological elements in the situation make it difficult to tell which direction the prospective builder will jump. And it is from just this sort of demand that the industry is drawing a greater part of its support today. With the deficit no longer a potential factor in the situation, the architect, who is looking months ahead, must expect to encounter demand forces underlying, not an unusual set of conditions, but a state of affairs approximately normal.

Confidence has been troubled. The delay in the reduction of taxes, the passage of the bonus bill by the House of Representatives and the results of the sensational investigations in Washington with their interruptions of needed legislation, have created a great deal of uncertainty all over the United States. This feeling of caution has deprived Spring business of its usual vivaciousness and snap. It has also suppressed that boldness and courage which form a vital part of the whole business of speculation. Furthermore, a mild form of pessimism has been produced by that ancient economic specter, the presidential year, when all the forces underlying business are supposed to be restless and unruly. Early indications of a campaign of acrimony and of the inquisition of personalities and reputations have done a great deal to heighten timidity in the advancement of business affairs. Mr. Daugherty's resignation has lessened the political tension somewhat, but the public's apprehension of developments of a disquieting nature has certainly been aroused.

Anxiety and uncertainty have never formed the foundations of prosperity. Genuine good times, like good reputations, must be born of confidence-breeding circumstances and conditions that are fundamentally sound, substantial and secure. These distasteful revelations in Washington have been reflected in the amount of forward buying which has lingered and wavered since February. The volume of new business that graced the close of the Winter months in such a promising manner, has apparently given way to the old practice of purchasing for immediate requirements. Cautious and afraid of debt, business men have been reluctant to accumulate inventories at present prices. As long as this attitude prevails, a decided rise in commodity values cannot reasonably be expected; yet active retail trade, comfortable inventories, and an abundance of cheap money militate against the probability of a pronounced slump in the general price level and may even serve as the incentive to a moderate advance in prices in the next few months.

Quite in the face of the prevailing timidity and vacillation in general buying policies, indexes of the activity in business point to a movement which continues better than normal. For example, productive activity in twenty-two basic industries, according to the Federal Reserve Board, advanced 9 points, from a relative of 111 in December, 1923, to 120 in January, 1924, a notable gain in one month's time. That index has only recently moved up another point in February. March's relative, when it appears, is not likely to disclose any marked change. Furthermore, factory employment is increasing, and the amount of checks passing through the banks lends weight to the feeling that business is progressing in good volume. It is gratifying to have the assurance from the relatively heavy movement of retail trade and the unprecedentedly heavy railroad traffic, considering the time of year, that this increased volume of production is passing rapidly into consumptive channels. This is indeed a salubrious condition and one of basic significance. By keeping down the accumulation of merchandise, such steady consumption offers some degree of insurance against the effects of a decline in the present rate of production, which, obviously, cannot be maintained for long in the face of the public's policy of buying stintedly. A moderate recession is inevitable, or the manufacturer must produce for inventory or increase his sales. Already meager, and in some cases inadequate margins of profit preclude further price concessions, and the timidity and caution of the buying public are a barrier to heavier forward purchasing for the present. Furthermore, present conditions do not favor manufacturing for inventory, so a moderate recession in production may be expected in the coming months. This program is essentially sound, and prevents the players from overreaching the possibilities of their hands.

An industrial debacle, similar to the depression of 1920-1921 is certainly not in prospect, and is hardly probable as long as easy money, comfortable inventories, full employment and attractively priced merchandise hold the public in the market. The principal weakness is that these good times have not been evenly distributed among the industries. This fault has been the result partly of the economic disturbances of the war, partly of the artificial control of some parts of the economic machine, and partly because of the exploitations by opportunist elements in society who for the moment have held an advantage. The effect has been the destruction of finely balanced relationships of prices, which has benefited some to the detriment of others. The greatest activity today prevails in those trades which have been the leaders since 1921: building and construction, iron and steel, automobile, and electrical equipment. Industries allied with these basic lines have likewise prospered. In other trades activity has been

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slightly above or slightly below normal. Margins of profit have been discouragingly narrow, for prices have been repressed and costs boosted high. A significant index of the business situation is the condition of credit. A serious industrial depression in this country has always been attended by a scarcity of money, or money at prohibitive rates. Today credit is abundant and rates of interest are relatively easy. There have been two years now of very active business, and speculation has been moderate and controlled, and these have left a condition which is fundamentally strong and healthy.

The trend of building costs is still mildly upward. On March 1 the construction cost index computed by the *Engineering News-Record* gained 4.4 points over February 1, due chiefly to increases in two components of the index, lumber and labor. The cost of general construction stood on March 1 at a relative of 225, 9 per cent higher than a year ago, and 18 per cent under the peak of all time. A slight recession in lumber and steel prices, which took place during March, may result in a decline in the April 1 index, a movement which is believed to be opposite to the main trend of construction costs at the present time.

Materials markets in March apparently confronted that same chilly wind of uncertainty and caution which swept over the whole industrial field. Demand flinched, then faltered. Materials markets apparently are forecasting a milder movement in new building and construction. New orders, which had been appearing in gratifying volume fell off; prices of structural steel receded mildly, as did the quotations of pine. Markets for the other basic materials held firm. As April approached, a better demand appeared, particularly in lumber, and during the second month of Spring, if there is any change in construction costs, they will be expected to move mildly upward. Stocks of basic materials are believed to be sufficient to meet Spring demand, with the possible exception of certain grades of lumber and hollow tile. European shipments of cement and brick are being added to supplies already augmented by increased domestic production. The shipping situation is good and shortages are not threatening.

Wages show no inclination to yield to the weakening influences that have resulted in the disappearance of courageous forward buying. Enough work is already under way to keep employment, particularly of the skilled crafts, full for several months. For the most part, the labor situation is a fairly comfortable one. A shortage may be said to exist in the trowel trades, and these bricklayers and plasterers are reported to receive bonuses of $1 and $2 a day in New York. But as far as the remaining crafts are concerned, immigration, active apprenticeship movements, and the release of skilled workmen from other occupations have relieved the situation. There has been no surplus of men except in districts where the weather has resulted in temporary idleness.

Wage increases during February and effective March 1 showed fewer changes than in January, according to *The American Contractor*. Still the upward trend, which has prevailed since May, 1922, continues. Thirty-one raises were reported in February and no cuts. The outlook is entirely favorable to the projection of this rising trend of wages. A busy season is ahead. Employment is already full, and the cost of living has revealed no appreciable decline. Food, clothing and fuel costs are still high and a nationwide survey recently conducted by the National Industrial Conference Board shows that rents of low and medium priced four and five room houses average 80 per cent above pre-war levels, and some 8 per cent higher than a year ago. With these conditions prevailing, peak wages are likely to obtain in the building and construction trade for some months.

The abundance of industrial credit has had a favorable effect upon the mortgage money market. Rates have not altered radically, but the disposition to loan upon improved property has apparently eased. The change in the situation is probably due to the good supply of available funds, and to the fact that real estate markets are not quite as active as they were in March and April of last year. Essentially, the situation is the same, for costs have not declined, and valuations are not being made upon a readjusted basis. The careful banker will continue to make the builder finance a greater portion of his project by loaning to less than the usual percentage of the fair valuation, and construing that fair valuation upon a pre-war basis of appraisal and worth. In this way the strength of the credit structure underlying the building and construction industry may best be preserved.

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WALTER E. GILLHAM
CONSULTING ENGINEER
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KANSAS CITY, MO.

June 22, 1923.

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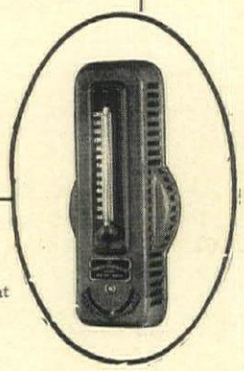

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PERSONALS

Morris & Weinberg, architects, have moved their offices from 3226 to 3608 Euclid Avenue, Cleveland, Ohio.

Arthur Dahlstrom, architect, has moved his offices from 305 Essex Building to 217 Essex Building, Minneapolis, Minn.

Anton F. Korn, Jr., architect, will move his office on May 1 from 413 Andrews Building, to 415 Thomas Building, Dallas, Texas.

Alling S. DeForest, Fellow of the American Society of Landscape Architects, has moved his offices to 16 Fair Place, Rochester, N. Y.

Thos. F. Walston, architect, has moved his offices from the Grand Theatre Building to Room 917, Ashland National Bank Building, Ashland, Ky.

J. B. Chamberlin, architect and engineer, has moved his offices from 143 North Church Street to 615-616 Hazleton National Bank Building, Hazleton, Pa.

Kenneth B. Worthen, architect, and George M. Ilg, structural engineer, are now occupying enlarged quarters at 647 Endicott Building, St. Paul, Minn.

Raymond M. Hood, architect, has moved his office from 18 East Forty-first Street to the Radiator Building, 40 West Fortieth Street, New York City.

H. M. Haven & A. T. Hopkins, Inc., engineers and architects, have moved from 40 Court Street to new and larger quarters at 11 Beacon Street, Room 1121-1134, Boston, Mass.

William Quincy Bendus, architect, announces the removal of his office from Steinway Hall to Room 2049 in the McCormick Building, 332 South Michigan Boulevard, Chicago, Ill.

Annette Hoyt Flanders, member of the American Society of Landscape Architects, announces the opening of her office for the practice of landscape architecture at 8 West Fifty-first Street, New York City, with Helen Swift Jones as associate.

Herbert Wheaton Congdon, at one time the junior partner of the architectural firm of Henry M. Congdon & Son, which was dissolved at the death of Henry M. Congdon, is practicing architecture under his own name and on May 1 will move his office to Arlington, Vermont, where he will be glad to continue to receive advertising matter from manufacturers.

REFERENCE LIST OF BUSINESS LITERATURE

A service arranged for the use of the Architect, Specification Writer and Architectural Engineer

This list of the more important business literature ot Manufacturers of building material and equipment is published each issue. Any of these publications may be had without charge, unless otherwise noted, by applying to The American Architect and The Architectural Review, 243 West 39th Street, New York, or obtained directly from the manufacturers. Either the titles or the numbers may be used in ordering.

ACOUSTICS

Johns-Manville, Inc., 294 Madison Ave., New York, N. Y.

710. *Architectural Acoustics.* A treatise on the correction of architectural acoustics in churches, schools, hospitals, office buildings and other places. 24 pp. Ill. 6 x 9 in.

AIR CONDITIONING—See also Heating and Ventilation

The Bayley Manufacturing Company, 732-760 Greenbush St., Milwaukee, Wis.

486. *Bulletin No. 23.* This bulletin is descriptive of the Bayley Turbo-Atomizer, the Bayley Turbo Air-Washer and Air Conditioner, for cleaning, cooling, tempering, humidifying and dehumidifying air. It contains an interesting treatise on air conditioning methods together with useful tables and a set of specifications. 32 pp. Ill. 7¾ x 10½ in.

AIR FILTRATION

Midwest Air Filters, Inc., 100 E. 45th St., New York City.

642. *Dust Problems and Their Solution.* A discussion of the problems of supplying clean air for ventilation and industrial purposes, covering the complete line of Midwest Air Filters. Drawings, photographs, installation sizes, specifications, tables, etc., make it a practical handbook on the subject for architects and specification writers. 48 pp. Ill. 8½ x 11 in.

ARCHITECTURAL IRON WORK—See also Ornamental Metal Work

ASBESTOS—See also Lumber, Roofing

Johns-Manville, Inc., 294 Madison Ave., New York, N. Y.

709. *Johns-Manville Service to Power Users* A catalog containing valuable data on all forms of asbestos insulation, asbestos packings, steam traps, high temperature cements, asbestos brake blocks and linings, asbestos building materials and general technical data. 260 pp. Ill. 8½ x 11 in.

ASBESTOS ROOFING—See also Roofing

The Philip Carey Co., Lockland, Cincinnati, Ohio.

380. *Asbestos versus Fire.* Booklet in colors. Contains information about asbestos; data on Carey Prepared and Built-up Asbestos Roofing; pictures of buildings on which they have been used. 15 pp. Ill. 6 x 9 in.

ASH HOISTS—See also Hoists

Gillis & Geoghegan, 545 West Broadway, New York, N. Y.

329. *General Catalogue.* Contains specifications in two forms, (1) using manufacturer's name, and (2) without using manufacturer's name. Detail in ¼ in. scale for each telsecopic model and special material handling section. Fully illustrated with photographs of actual installations and descriptive matter of same. 20 pp. 2 colors. 8½ x 11 in.

BATHROOM EQUIPMENT

A.P.W. Paper Co., Albany, N. Y.

740. *The Onliwon Hygiene.* A file card for reference in specifying cabinets of different kinds to contain toilet papers and paper towels. 2 pp. Ill. 8½ x 11 in.

BRICK

American Face Brick Association, 1754 People's Life Bldg., Chicago, Ill.

103. *The Story of Brick.* Contains the history of, and basic requirements of building brick, artistic, sanitary and economic reasons, comparative costs, and fire safety with photographs and drawings, and illustrates ancient and modern architectural works of note in brick. Size 7 x 9¼ in. 56 pp.

137. *A Manual of Face Brick Construction.* The history of brick making, types of face brick, showing details of construction for walls, chimneys and arches. Details of use of tile and brick construction and different types of bonds are given. A series of plans and elevations of small brick houses, descriptions, useful tables and suggestions are illustrated and described. Size 8½ x 11 in. 116 pp. Price $1.00.

155. *The Home of Beauty.* A booklet containing fifty prize designs for small brick houses submitted in national competition by architects. Texts by Aymar Embury II, Architect. Size 8 x 10 in. 72 pp. Price 50 cents.

371. *Architectural Details in Brickwork. Series One, Two and Three.* Each series consists of an indexed folder case to fit standard vertical letter file, containing between 30 and 40 half-tones in brown ink on fine quality paper. These collections are inspiring aids to all designers. Sent free to architects who apply on their office stationery; to others, 50 cents for each series.

454. *Bungalow and Small House Plans.* Four booklets containing plans for attractive small brick houses, containing 3-4, 5, 6, and 7-8 rooms. 50 pp. Ill. 8½ x 11 in. 25 cents each, $1.00 for the set.

BRICK AND TILE—See also Brick

BUILDING CONSTRUCTION

Cement-Gun Company, Allentown, Pa.

563. *Report on Gunite Walls.* A report of fire tests made by Underwriters' Laboratories on Gunite walls, resulting in giving them a three-hour fire resistance classification. 90 pp. Ill. 6 x 9 in.

Concrete Engineering Co., Omaha, Neb.

347. *Handbook of Fireproof Construction.* An illustrated treatise on the design and construction of reinforced concrete floors with, and without suspended ceilings. The Meyer Steel-form Construction is emphasized and tables are given of safe loads for ribbed concrete floors. 40 pp. Ill. 8½ x 11 in.

Curtis Companies Service Bureau, Clinton, Iowa.

662. *Better Built Houses.* Vol. XIII. This volume contains floor plans and perspectives of 21 two family houses. The designs were made by Trowbridge and Ackerman, Architects, New York, and illustrations rendered by Schell Lewis. Printed in sepia on heavy cream paper. Sent free to architects, east of the Rockies, requesting it on business stationery, otherwise price $1.00. 24 pp. Ill. 9 x 12 in.

McKeown Bros. Co., 21 East 40th St., New York, N. Y.

434. *Clear Floor Space.* A folder showing uses and advantages of McKeown "Lattis" and "Bowstring" long span wood roof trusses. 4 pp. Ill. 8½ x 11 in.

Portland Cement Association, 347 Madison Ave., New York City.

595. *Concrete Floors.—Proposed Standard Specifications of the American Concrete Institute.* Specification with explanatory notes covering materials, proportions, mixing and curing. Plain and reinforced slabs are covered as well as one and two course floors and wearing courses. 18 pp. 6 x 9 in.

Truscon Steel Company, Youngstown, Ohio.

317. *Truscon Floortyle Construction. Form D-352.* Contains complete data and illustrations of Floortyle installations. 16 pp. Ill. 8½ x 11 in.

318. *Truscon Standard Buildings. Form D-398.* Describes Truscon Standard Steel Buildings, with diagrams, illustrations of installations, descriptive matter and list of users. 48 pp. Ill. 8½ x 11 in.

319. *Truscon Building Products. Form D-376.* Contains a brief description of each of the Truscon Products. 112 pp. Ill. 8½ x 11 in.

320. *Modern School Construction. Form D-396.* Contains illustrations of schools, with typical elevations, showing advantages of Truscon Products for this construction. 16 pp. Ill. 8½ x 11 in.

BUILDING DIRECTORIES

The Tablet & Ticket Co., 1015 West Adams St., Chicago, Ill.

517. *Office Building Directory.* Bulletin illustrating and describing directories made by this company providing for any required number of names. Frames of wood or metal with glass cover or doors. Name strips with one quarter inch white letters furnished. Size 7 x 10 in. 4 pp.

BUILDING HARDWARE—See Hardware

BULLETIN BOARDS

R. W. Clark Mfg. Co., 1774 Wilson Ave., Chicago, Ill.

588. *Clark Directories and Clark Changeable Bulletin Boards.* Two pamphlets describing the Clark Changeable Bulletin Board and Directories for Office Buildings, Hotels, Business Buildings, etc. 8 pp. and 4 pp. Ill. 6¼ x 9 in.

The Tablet & Ticket Co., 1015-1021 West Adams Street, Chicago, Ill.

516. *T. & T. Changeable Bulletin Display Boards.* Describes bulletin boards with changeable type which has a self-spacing device so the lettering always looks neat and regular. 24 pp. Ill. 6 x 9 in.

CABINETS

Hess Warming & Ventilating Co., 1204-7 Tacoma Building, Chicago, Ill.

386. *The Hess Sanitary Medicine Cabinet Lockers and Mirrors.* Description with details of an enamelled steel medicine cabinet for bathrooms. 20 pp. Ill. 4 x 6.

CASEMENTS—See Doors and Windows

CEDAR LINING—See Lumber

CEILINGS, METAL

The Edwards Manufacturing Company, Cincinnati, O.

193. *Pamphlet* of 32 pages describing metal ceilings and wainscoting. Well illustrated, with list prices and rules for estimating. 7 x 10 in.

Reception room of The Erickson Company, New York. The artistic distinction of the room is enhanced by the floor of *Gold-Seal* Treadlite Tile, in a harmonizing pattern of buff and fawn gray tiles.

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REFERENCE LIST OF BUSINESS LITERATURE—Continued

CELLAR SASH—See Doors and Windows

CEMENT

The Carney Co., Mankato, Minn.

448. *The Bond That Guarantees the Wall.* Attractive catalog for architects, engineers, contractors, and dealers. Describes fully the characteristics, durability and economy of this nature-mixed cement that requires no lime. Contains simple formula for mixing and illustrations of Carney-laid buildings. 24 pp. Ill. 8½ x 11 in.

599. A circular describing improvements in manufacturing the material, cost comparisons, physical tests and specifications for use. 4 pp. Ill. 8½ x 11 in.

711. *A Perfected Cement.* An attractive circular describing late improvements in manufacturing Carney, cost comparisons, physical tests, specifications and testimonials. List of Carney-built buildings with architect's and contractor's names. 8 pp. Ill. 8½ x 11 in.

Louisville Cement Co., Inc., Louisville, Ky.

694. *Brixment for Perfect Mortar.* A description of the chemical and physical properties of Brixment, advantages of its use in mortars for brick and stone masonry, tests of strength and directions for use. In cover for filing. 16 pp. Ill. 8½ x 11 in.

Portland Cement Association, 111 West Washington St., Chicago, Ill.

636. *Concrete Data for Engineers and Architects.* A valuable booklet containing the reports of the Structural Materials Research Laboratories at Lewis Institute, Chicago, in abbreviated form. It is of great value to writers of specifications. 18 pp. Ill. 8½ x 11 in.

650. *Concrete Floors.* Contains the tentative specifications of the American Concrete Institute for concrete floors of all kinds, with notes on floor finishes, coverings, typical construction designs and computing data. 16 pp. Ill. 8½ x 11 in.

CHAIRS—See Furniture

The B. L. Marble Chair Co., Bedford, Ohio.

587. *Office Chairs, Catalog No. 31.* Describes a complete line of seating fixtures, for offices, directors' rooms and other places consisting of stationary and swivel chairs, settees and couches, both plain and leather upholstered. Also stenographer's chairs, stools, waste baskets, coat trees and accessories. 75 pp. Ill. 9 x 12 in.

CHUTES—See also Laundry Equipment

Edwin A. Jackson & Bro., Inc., 50 Beekman St., New York.

171. Booklet showing general construction and size of chutes to receive coal. Two types are built into the foundation wall with glass panel in place of cellar window; another type is placed flush with the ground, and is placed adjacent to wall, or can be placed near the street curb. Size 3½ x 6¼ in. 16 pp.

CLOCKS

Landis Engineering and Manufacturing Co., Waynesboro, Penna.

469. *Landis Electric Time and Program System.* A collection of bulletins No. 100, 110, 120, 130, 150 and 160, dealing with master and secondary clocks, equipment, time stamps, etc. Bound in expansible filing cover of tough paper. 48 pp. Ill. 8½ x 11 in.

COLUMNS

Lally Column Co. of New York, 334 Calyer Street, Brooklyn, N. Y.

122. *Lally Columns. Handbook.* Detailed construction diagrams for various types of steel construction. The text describes advantages of endurance and economy of the column. Various tests, tables of sizes, dimensions, weight, carrying capacities, and data on other structural materials are given. Size 4⅝ x 6⅜ in. 81 pages.

CONCRETE, REINFORCED—See also Reinforcing Steel

CONDUITS—See Pipe

DAMPPROOFING—See also Waterproofing

DOORS AND WINDOWS

Andersen Lumber Company, Bayport, Minn., (formerly South Stillwater).

559. *Complete Catalog for Architects and Builders.* Describes Andersen Standard Window Frames and Cellar Sash Frames, which are in 7 units instead of 57 and may be assembled and nailed in 10 minutes. Shows uses in special construction for it comes in 121 sizes and styles. 24 pp. Ill. 7¾ x 10¾ in.

Crittall Casement Window Co., Detroit, Mich.

672. *Crittall Universal Casements, Catalog No. 22.* Contains complete description, photographs, specifications and details of steel casement windows for banks, schools, residences, churches hospitals, set directly into masonry and with auxiliary frames. 76 pp. Ill. 9 x 12 in.

695. *Crittall Solid Steel Reversible Windows, Catalog No. 1-24.* A catalog explaining the advantages of reversible metal windows for office buildings, schools, hospitals and other substantial buildings. Details of construction and specifications. 20 pp. Ill. 8½ x 11½ in.

Dahlstrom Metallic Door Co., Jamestown, N. Y.

674. *Architectural Catalog.* Illustrated catalog showing styles and types of Dahlstrom Standard Construction Hollow Metal Doors and Trim, Condue-Base, etc. Also various types of frames, jamb construction and architectural shapes. 178 pp. Ill. 8½ x 11 in., in loose leaf.

Irving Hamlin, 716 University Place, Evanston, Ill.

735. *The Evanston Sound-Proof Door.* A circular explaining the construction of a sound-proof door hermetically sealed against odors, dust, light, weather and air, especially adapted to music schools, hospitals, etc. 4 pp. 8½ x 11.

Henry Hope & Sons, 103 Park Ave., New York.

65. *Hope's Casements and Leaded Glass.* Portfolio. Gives specifications, description and photo-engraving, of Hope Casements in English and American Architecture, full size details of outward and inward opening and pivoted casements, of residential and office types. Size 12¼ x 18½ in. 32 pp.

The Kinnear Manufacturing Company, Columbus, Ohio.

455. *Steel Rolling and Folding Doors and Shutters. Catalog No. 52.* This catalog is devoted to service doors adaptable to buildings of all classes, piers, factories, warehouses, etc. Illustrates their use and contains tables for designers and detailers. 96 pp. Ill. 8 x 11 in.

S. H. Pomeroy Company, 282 East 134th St., New York, N. Y.

614. *Solid Metal Double Hung Window. Type "A." Bulletin A.* Complete specifications and details of sash, frame, stools and stool and apron. 4 pp. Ill. 8½ x 11 in.

Truscon Steel Co., Youngstown, Ohio.

345. *Truscon Steel Sash.* A catalog containing designing data, tables and views of Stock Sash installations. 6 pp. Ill. 8½ x 11 in.

348. *Truscon Steel Sash.* This handbook has been prepared for detailers and specification writers. The descriptions are clear and the details are complete. 80 pp. Ill. 8½ x 11 in.

638. *Daylighting Schools.* A treatise on the daylighting and window ventilation of school buildings quoting eminent authorities, illustrated with diagrams of lighting data and details of suitable windows. 28 pp. Ill. 8½ x 11 in.

The Wheeler Osgood Co., Tacoma, Wash.

713. *Laminex Doors, Catalog No.* 31. Doors made of Douglas Fir employing a special laminated and doweled construction. Twenty designs in vertical and flat grain veneers. Sizes and details. 44 pp. Ill. 3⅞ x 9¼ in.

714. *Laminex Doors. A Book for Architects and the Building Trade.* This book fully describes the special features of Douglas Fir Laminex and Woco Doors; strength, water and heat tests; properties of Fir; Woco garage doors and window sash. 24 pp. Ill. 8 x 11 in.

The J. G. Wilson Corporation, 2 East 36th St., New York City.

656. *Wilson Rolling Partitions and Hygienic Wardrobes. Catalog "P."* Complete catalog of vertical and horizontal wooden rolling partitions and ventilated wardrobes with disappearing doors. 32 pp. Ill. 6 x 9 in.

DRAFTING MATERIALS

American Lead Pencil Co., 220 Fifth Ave., New York, N. Y.

208. *Booklet C-20. Venus Pencil in Mechanical Drafting.* An interesting illustrated booklet showing the possibilities of the Venus Drawing Pencil for drafting. 6 x 9 in.

Joseph Dixon Crucible Company, Pencil Department, Jersey City, N. J.

325. *Finding Your Pencil.* A book explaining the various degrees of hardness of the Eldorado pencil and the grade most suitable for every man who uses a pencil be he business or professional man, clerk or draftsman. Accompanied by a color chart of Dixon colored crayons. 16 pp. and 4 pp. in color chart. Ill. in colors. 3¼ x 6 in.

Ruud Manufacturing Co., Pittsburgh, Pa.

732. *Ruud Delineator and Specification Card.* A diagram of vanishing lines over which perspective sketches can be readily and correctly made. 8½ x 11 in.

DUMB-WAITERS—See also Elevators

Kaestner & Hecht Co., 1500 No. Branch St., Chicago, Ill.

598. *Electric Dumb-waiters. Bulletin No. 520.* Illustrated catalog, 8 pp. 8½ x 11 in.

Sedgwick Machine Works, 144 West 15th Street, New York.

60. *Hand Power Elevators and Dumb-waiters in Modern Architectural Construction.* Illustrated catalogue. 4¼ x 8¼ in. 80 pp.

ELECTRICAL EQUIPMENT—See also Lighting

Frank Adam Electric Co., St. Louis, Mo.

296. *Catalog No. 25.* A catalog and price list of knife switches switchboards, panel boards, steel cabinets, switchboard material. 83 pp. Ill. 3 x 10½ in.

The Hart & Hegeman Mfg. Co., 342 Capitol Ave., Hartford, Conn

699. *H. & H. Electrical Wiring Devices, Catalog "R."* Catalog of a complete line of switches, sockets, plugs, receptacles, plates, rosettes, cut-outs, elexits and accessories. Two identical catalogs in two sizes. 152 pp. Ill. 5 x 6¼ and 8 x 10½ in.

700. *Gold and Silver Star Switches.* A new type of switch with composition base having a gold star or a silver luminous star in on the button. 4 pp. Ill. 3½ x 6 in.

Specifications of most products advertised in THE AMERICAN ARCHITECT appear in the Specification Manual

REFERENCE LIST OF BUSINESS LITERATURE – Continued

ELECTRICAL EQUIPMENT

Harvey Hubbell, Inc., Bridgeport, Conn.

297. *Electrical Specialties. Catalog No. 17, 1921.* This catalog contains descriptions with prices of the thousand and one items connected with electric light, electric alarm and small electric appliance installations in modern buildings. 104 pp. Ill. 8 x 10½ in.

Minneapolis Heat Regulator Co., Minneapolis, Minn.

570. *The Minneapolis Thermostatic Relay Switch.* Used in connection with any Minneapolis Thermostat, provides a means of temperature control for automatic oil burners, electric refrigerating apparatus, electric heating units and any similar equipment where it is necessary to operate an electric switch in accordance with temperature changes. 4 pp. Ill. 8½ x 11 in.

National Metal Molding Co., Pittsburgh, Pa.

481. *Liberty Rubber Insulated Wires, Cables and Cords.* A descriptive catalog of insulated wires, cables and cords for electric wiring. Contains much special information together with useful tables. 20 pp. Ill. 6 x 9 in.

ELEVATORS—See also Dumb-waiters and Hoists

A. B. See Electric Elevator Co., 52 Vesey St., New York.

169. Photographs and description in detail of elevator equipment manufactured by the A. B. See Electric Elevator Co. Size 6 x 8 in.

Kaestner & Hecht Co., 1500 No. Branch St., Chicago, Ill.

597. *Electric Traction Elevators, Bulletin No. 500.* Illustrated catalog describing gearless traction elevators and worm-geared traction elevators. 31 pp. 8¼ x 11 in.

Kimball Brothers Company, Council Bluffs, Iowa.

330. *Kimball Elevators.* An illustrated catalog of hand power, sidewalk, and garage elevators and dumb-waiters and electric passenger, freight and push button elevators. 32 pp. Ill. 7¾ x 10½ in.

Otis Elevator Co., 260 Eleventh Ave., N. Y. C.

651. *Otis Geared and Gearless Traction Elevators.* Leaflets describing all types of geared and gearless traction elevators with details of machines, motors and controllers for these types. Illustrated. 8½ x 11 in.

Richards-Wilcox Mfg. Co., Aurora, Ill.

335. *"Ideal" Elevator Door Equipment.* Catalog showing elevator door hangers for one, two and three speed doors, also doors in pairs and combination swing and slide doors. Door closers and checks. 24 pp. Ill. 8½ x 11 in.

ELEVATOR LOCKS

Elevator Locks Co., 119 No. Washington St., Peoria, Ill.

536. *M-C-K Safety Elevator Locks.* A description of locks for elevators which mechanically lock the power and gate automatically, while gate is open; keep power locked until gate is securely closed; securely lock gate before power can operate; control the landing. Contains several pages of names of contented users. 24 pp. Ill. 4 x 9¼ in.

ESCALATORS

Otis Elevator Co., 260 Eleventh Ave., N. Y. C.

652. *Elevators and Inclined Elevators.* A comprehensive catalog illustrating the use of escalators for transporting people in stores, subways, railroad stations, theatres and mills; also inclined freight elevators for stores, factories, warehouses and docks adjustable to tide levels. 22 pp. Ill. 8½ in.

FENCE

The Stewart Iron Works Company, Cincinnati, Ohio.

456. *Book of designs "B."* A book of fence designs full of suggestions for architects. All illustrations are from photographs. 80 pp. Ill. 9½ x 12 in.

FILTERS—See Air Filters

FINANCING OF ENTERPRISES

S. W. Straus & Co., 565 Fifth Ave., New York, N. Y.

183R. *The Straus Plan of Finance.* A book describing the methods of S. W. Straus & Co., in helping to finance the erection of the larger class of properties such as office and apartment buildings, hotels, loft buildings and similar structures. A book valuable to the architect who desires to study the business side of the profession. 24 pp. Ill. 7¼ x 10½ in.

FIRE DOORS AND SHUTTERS—See Doors and Windows

FIREPLACES AND MANTELS

Colonial Fireplace Co., 4619 Roosevelt Road, Chicago, Ill.

675. *Everything for the Fireplace.* A catalog showing a complete line of well designed andirons in various finishes; portable, club and basket grates; wood holders, firesets and Franklin stoves; folding screens, spark guards and fenders; hoods and set grates; gas logs, electric fires, ash traps, cranes and kettles and head throats and dampers. 24 pp. Ill. 8½ x 11 in.

H. W. Covert Co., 137 East 46th St., New York.

79. *Hints on Fireplace Construction.* Diagrams of construction and installation of Covert "Improved" and "Old Style" dampers and smoke-chambers, and other fireplace accessories. Size 5⅝ x 8½ in. 12 pp.

Edwin A. Jackson & Bro., Inc., 50 Beekman St., New York.

92. *Dampers, Chutes, Doors and Dumps.* Illustrated catalog. Equipment and appurtenances of various types, construction and installation, data, dimensions and prices.

Peerless Manufacturing Company, Inc., Louisville, Ky.

513. *The Lure of the Fireplace.* This booklet contains information and diagrams for the design and building of fireplaces, together with descriptions of modern domes and dampers so that a fireplace will work effectively at all times. Contains many illustrations of tasteful mantel designs. 24 pp. Ill. 5 x 7 in.

FLOOR COVERING—See Flooring

FLOORING, SUB—See also Stucco Base

FLOORING

Armstrong Cork Co., Linoleum Department, Lancaster, Pa.

222. *Business Floors.* A handy reference on floors for public and semi-public buildings, containing specimen specifications, directions for laying and other helhlpful data. Illustrated in color. 6 x 9 in.

223. *Armstrong's Linoleum Floors.* A handbook for architects, published in the file form (8½ x 11 in.) recommended by the American Institute of Architects. A technical treatise on Linoleum containing general information, tables of grades, gauges and weights, specimen specifications, and detailed directions for laying linoleum. Profusely illustrated in colors.

The Barber Asphalt Co., Philadelphia, Pa.

659. *Genasco Trinidad Lake Asphalt Mastic.* A book describing its manufacture, uses and methods of application, including application over old floors. Separate specifications for flooring, waterproofing and roofing uses. 34 pp. Ill. 6 x 9 in.

Bonded Floors Co., Inc., 1421 Chestnut St., Philadelphia, Pa.

716. *Distinctive Floors.* A publication describing Gold-Seal Rubber Tile, its composition, manufacturing and method of installation. Illustrations in full color of twelve different finishes. 8 pp. Ill. 7¾ x 10¾ in.

717. *Hospital Floors.* Descriptions and advantages of using Gold-Seal Battleship Linoleum, Gold-Seal Treadlite Tile and Gold-Seal Rubber Tile in hospital construction, insuring durable, noiseless, sanitary and attractive floors. Illustrated part in color. 8 pp. Ill. 8 x 10¾ in.

718. *Gold-Seal Treadlite Tile.* This tile, a scientific compound of cork, various gums and pigments, is described and illustrated in colors. Detail drawings and specifications for installation are included. 32 pp. Ill. 7¾ x 10¾ in.

The Long-Bell Lumber Co., R. A. Long Building, Kansas City, Mo.

204. *The Perfect Floor.* Tells how to lay finish and care for Oak Flooring. 16 pp. 14 illus. 5⅛ x 7⅞ in.

The Marbleloid Co., 461 Eighth Ave., New York.

61. *The Universal Flooring for Modern Buildings.* Illustrated booklet. Describes uses and contains specifications for Marbleloid flooring, base, wainscoting, etc. Size 6¾ x 9¾ in. 32 pp.

523. *Marbleloid for Schools.* A bulletin showing schools in which Marbleloid flooring is used. It is a composition flooring applied in a plastic state. Other bulletins show where it has been used in various classes of buildings. 4 pp. Ill. 3½ x 11 in.

Franklyn R. Muller Co., Waukegan, Ill.

242. *Asbestone Flooring Composition.* A book describing uses of and giving specifications and directions for Composition Flooring. Base. Wainscoting, etc. 8½ x 11 in. Ill.

Oak Flooring Bureau, 1014 Ashland Block, Chicago, Ill.

493. *Modern Oak Floors.* A book that tells the complete story of Oak Flooring 24 pp. Ill. 6⅛ x 9¼ in.

The Rodd Co., Century Bldg., Pittsburgh, Pa.

688. *Redwood Block Floor Booklet.* A treatise on the advantages of Redwood Block Floors in factories, warehouses, hotels, office buildings, department stores, hospitals, etc. Details, dimensions and specifications for installing. 14 pp. Ill. 4 x 9 in.

FLOORING

Stedman Products Co., South Braintree, Mass.

585. *Stedman Naturized Reinforced Flooring.* A circular describing a product formulated from rubber reinforced with cotton fibre, made in various colors and used for floors, wainscoting, sanitary base, stair treads. interior decorative units, wall coverings, table and desk tops and drain mats. 6 pp. Ill. 8½ x 11 in.

FLOORS—See Building Construction

FRAMES—See Doors and Windows

FURNACES—See Heating

FURNITURE—See Chairs

GARAGE CONSTRUCTION—See also Building Construction

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REFERENCE LIST OF BUSINESS LITERATURE—Continued

GARBAGE DESTROYERS

Kerner Incinerator Company, 1029 Chestnut St., Milwaukee, Wis.

384. *The Sanitary Elimination of Household Waste, M-3 Folder.* Description of construction, installation and operation of the Kernerator for residences. Illustrated by views of residences in which the Kernerator is installed, with cuts showing all details. 15 pp. Ill. 4 x 9 in.

GARBAGE RECEIVERS

Edwin A. Jackson & Bro., Inc., 50 Beekman St., New York.

170. Booklet showing general construction and sizes of garbage receivers to be placed underground for suburban use; also types to be built into the wall of city homes and apartments; also types for suburban wall with opening on inside for the maid and outside for the garbage man. Size 3½ x 6¼ in. 16 pp.

GARDENS

Julius Roehrs Company, Rutherford, N. J.

406. The Ten-Ten books issued three times a year—covering nursery stock in general, such things as fruit trees, roses and perennials. Also one general greenhouse catalog, listing orchids and greenhouse plants.

GLASS

Plate Glass Manufacturers of America, First National Bank Bldg., Pittsburgh, Pa.

484. *The Part that Plate Glass Plays in the Life of Every Man.* An illustrated folder describing the many uses of plate glass. Ask also for special circular for work in hand. 6 pp. Ill. in color. 3½ x 6¼ in.

GRANITE—See Stone

GUNITE

Cement Gun Company, Allentown, Pa.

564. *The Cement Gun, Its Application and Uses.* Reprint of a paper by Byran C. Collier, M. Am. Soc. C. E. A description of what the cement gun is and how it works, together with reports on tests. 21 pp. Ill. 6 x 9 in. Ask also for companion pamphlet "Gunite Slabs" containing working tablets for designers and reports on slab tests. 30 pp. Ill. 6 x 9 in.

GUTTERS AND DOWNSPOUTS—See also Roofing

The New Jersey Zinc Co., 160 Front Street, New York, N. Y.

226. *Zinc Spouting.* Describes leaders, gutters, etc. "Made from Horse Head Zinc," giving information concerning their economy and durability. 8 pp. Ill. 6 x 9 in.

HARDWARE

Allith-Prouty Co., Danville, Illinois.

596. *General Catalog No. 90.* This catalog embraces a description of a complete line of door hangers and tracks, garage door hardware, spring hinges, rolling ladders, fire door hardware, overhead carriers, light hardware and hardware specialties. 144 pp. Ill. 7¾ x 10½ in.

P. & F. Corbin, New Britain, Conn.

540. *Automatic Exit Fixtures.* A catalog of fixtures that provide a ready exit at all times, as a child can operate them with ease. Doors to which they are applied can always be opened from the inside, even when locked against entrance. 4 pp. Ill. 8¾ x 11¾ in.

Monarch Metal Products Co., 5060 Penrose St., St. Louis, Mo.

438. *Monarch Casement Hardware.* A book describing hardware for casement windows. This Manual and folder comply with all suggestions made by the Structural Service Committee of the A. I. A. 18 pp. Ill. 7½ x 10½ in., in heavy folder for vertical file properly indexed.

Richards-Wilcox Mfg. Co., Aurora, Ill.

336. *Modern Hardware for Your Home.* Catalog of hangers for vanishing French doors; "Air-Way" multifold hardware for sun parlors and sleeping porches; "Slidtite" garage door hardware. 24 pp. Ill. 8½ x 11 in.

435. *Distinctive Garage Door Hardware. Catalog No. A-22.* This is more than a catalog. It is a treatise for architects and builders on the door equipment of garages, covering sliding, folding and combination sliding and folding doors, with their hardware. 94 pp. Ill. 8½ x 11 in.

436. *Sliding Door Hardware. Catalog No. A-17.* A catalog of sliding door hardware of Parallel, Accordion and Flush Door partitions. 32 pp. Ill. 7 x 10 in.

632. *Distinctive Garage Door Hardware. Catalog A No. 20.* A complete treatise on garage doors of every kind both hand and mechanically operated with description of standard and special hardware and accessories. 66 pp. Ill. 8½ x 11 in.

Russell & Erwin Mfg. Co., New Britain, Conn.

609. *Russwin Period Hardware.* A brochure illustrating hardware trim in twelve architectural styles or periods. 71 pp. Ill. 5 x 8 in.

610. *Catalog of Hardware, Volume Fourteen.* A complete catalog of building hardware, trim, locks, butts and accessories. 359 pp. Ill. 8 x 11 in.

Sargent & Company, New Haven, Conn.

560. *Sargent Locks and Hardware for Architects.* The latest complete catalog of locks and hardware. 762 pp. Ill. 9 x 12 in.

The Stanley Works, New Britain, Conn.

11. *Wrought Hardware. New 1921 Catalog.* This new catalog describes additions to the Stanley line of Wrought Hardware, as well as the older well known specialties and various styles of butts, hinges, bolts, etc. 376 pp. Ill. 6½ x 9½ in.

12. *Garage Hardware. Booklet, illustrated.* Garages and their equipment, such as hinges, hasps, door holders, latch sets, chain and hand bolts, showing illustrations and text with dimensions of garages, describing the Stanley Works product. Size 6 x 9 in. 24 pp.

13. *Eight Garages and Their Stanley Hardware.* Booklet Plans, drawings and complete hardware specifications. Size 5 x 7 in. 32 pp.

127. *The Stanley Works Ball Bearing Butts.* Booklet, illustrated. Description with full size illustrations of many typed butts and their parts, dimensions and finish. Size 5 x 7½ in. 32 pp.

495. *Stanley Detail Manual.* A catalog in loose leaf binder, consisting of five sections on Butts, Bolts, Blind and Shutter Hardware, Stanley Garage Hardware, Screen and Sash Hardware. Detail drawings are given, showing clearances and other data needed by detailers. 116 pp. Ill. 7½ x 10½ in.

Vonnegut Hardware Co., Indianapolis, Ind.

309. *Von Duprin Self-Releasing Fire Exit Devices.* A catalog and educational work on panic proof, burglar-proof self releasing exit devices for doors and windows of buildings of any kind of occupancy. 41 pp. Ill. 8 x 11 in.

310. *Prince Self-releasing Fire Exit Devices. Supplement to Von Duprin Catalog No. 12.* Contains valuable information for architects on the selection, detailing, etc., of Prince devices for doors and windows to insure safety against fire panic. 32 pp. Ill. 8 x 11 in.

HEATERS—See Water Heaters

HEATING

American Radiator Company, 104-108 W. 42nd St., New York, N. Y.

427. *Ideal-Arcola Heating Outfits.* A book describing a system of hot water heating for small and medium size houses. The boiler is placed in a room and resembles a stove. No cellar required. The ash carrying reduced to a minimum. 24 pp. Ill. 6 x 8½ in.

Crane Company, 836 So. Michigan Ave., Chicago, Ill.

241. *Steam Catalogue.* A book containing full descriptions of the complete line of Crane valves, fittings, etc. 800 pp. Ill. 6 x 9 in.

The Duriron Co., Inc., Dayton, Ohio.

720. *Acid Fume Exhaust Fans.* A specification for exhaust fans where corrosive fumes or vapors are to be removed from chemical hoods, laboratories, etc. 4 pp. Ill. 8½ x 11 in.

The Farquhar Furnace Company, Wilmington, Ohio.

355. *Healthful Helpful Hints.* A discussion of furnace and chimney design and capacity for hot air heating and ventilation 16 pp. Ill. 4¾ x 9¼ in.

356. *A Plain Presentation to Dealers.* A book of selling talk for dealers in Farquhar Furnaces. Four model heating layouts are shown and there is a page of useful "Do and Don't" advice. 24 pp. Ill. 8½ x 11 in.

General Boilers Company, Waukegan, Ill.

444. *Catalog No. 7.* A catalog completely describing the construction and operation of Pacific Steel Boilers. Contains also specifications and price lists. 32 pp. Ill. 6 x 9 in.

The Hart & Cooley Co., New Britain, Conn.

703. *H & C Wrought Steel Grilles.* A new type of ventilating grille permitting passage of air but not sight, also plain square mesh grilles, made of steel, bronze and brass. Details and specifications. 4 pp. Ill. 8½ x 11 in.

712. *Wrought Steel Registers and Grilles, Catalog No. 24.* A catalog of wrought steel floor, baseboard and wall registers, cold air intakes, lock registers, ventilators, furnace regulators and accessories. Dimensions, details and price lists. 80 pp Ill. 7¾ x 10 in.

Hess Warming & Ventilating Co., 1209 Tacoma Bldg., Chicago, Ill.

178. *Modern Furnace Heating.* An illustrated book on the Hess Welded Steel Furnaces. Pipe and Pipeless, notes for installation, sectional views, showing parts and operation, dimensions, register designs, pipes and fittings. Size 6 x 9½ in. 48 pp.

Illinois Engineering Co., Racine Ave., at 21st St., Chicago, Ill.

501. *Illinois Heating Systems. Vapor Details Bulletin 20.* This bulletin contains typical plans and elevations of heating systems, with description of details and "Standards for Computing Radiation and Boiler Sizes" of the Chicago Master Steam Fitters' Association. 18 pp. Ill. 8 x 10¾ in.

502. *Illinois Bulletins.* No. 102 contains detailed description with capacities and dimensions of Eclipse Pressure Reducing Valves. 20 pp. Ill. Nos. 202, 302, 452, 502 and 703 describe, with illustrations, Steam Specialties, Back Pressure Valves, Stop and Check Valves, Exhaust Heads, Balanced Valves, Separators, Steam Traps.

REFERENCE LIST OF BUSINESS LITERATURE—Continued

HEATING

Jenkins Bros., 30 White St., New York, N. Y.

235. *Catalog No. 12.* This catalog contains descriptions of all the valves, packing, etc., manufactured by Jenkins Bros. Includes also dimensions and price lists of valves and parts. 271 pp. Ill. 4 x 6¾ in. Stiff paper cover.

237. *The Valve Behind a Good Heating System.* This booklet describes Jenkins Radiator Valves, Automatic Air Valves and other valves used in connection with steam and hot water heating. 16 pp. 4½ x 7¾ in. Stiff paper cover.

Johnson Service Company, 149 Michigan St., Milwaukee, Wis.

391. *The Regulation of Temperature and Humidity.* A description of the Johnson System of temperature regulation and humidity control for buildings; showing many kinds of thermostatic appliances for automatically maintaining uniform temperatures. 63 pp. Ill. 8½ x 11 in.

392. *Johnson Electric Thermostat, Valves and Controllers.* A catalog of devices mentioned in the title. 24 pp. Ill. 3½ x 6 in.

Kewanee Boiler Co., Kewanee, Illinois.

574. *Fire Box Boilers, Catalog No. 76.* A description of smokeless steel firebox boilers with complete data of capacities and dimensions of the brick set and portable types. 35 pp. Ill. 6 x 9 in.

575. *Power Boilers, Catalog No. 73.* A complete description of brick set horizontal tubular power boilers with full and half-front setting. Also smokeless tubular boilers with down draft furnace and steel casing. Also steel portable locomotive boilers, grates, breechings, cast iron fronts, air receivers, storage tanks and accessories. 35 pp. Ill. 6 x 9 in.

Minneapolis Heat Regulator Co., Minneapolis, Minn.

660. *Minneapolis Dual Control.* This circular describes in detail the No. 65 Hydrostat and No. 70 Pressurestat and their application for the automatic heat control of hot water, steam or vapor systems. 12 pp. Ill. 3¼ x 6 in.

The Powers Regulator Co., 2720 Greenview Ave., Chicago, Ill.

722. *Powers Temperature Regulation.* A catalog explaining the principles of thermostatic control of temperature and its application to heating plants. Details of apparatus and applications, installations in important buildings and engineering data. 40 pp. Ill. 8 x 11 in.

723. *Thermostatic Water Controller, Bulletin No. 124.* Describing water temperature control apparatus adapted to shower and tub baths, lavatories and other places where predetermined water temperature is desired. Details of installation, capacities, dimensions and prices. 4 pp. Ill. 6⅜ x 9¼ in.

724. *The No. 11 Regulator, Bulletin No. 129.* Describing a self contained, accurate regulator of liquid temperature in hot water service tanks, steam cookers, pasteurizers, etc. Details, dimensions and prices. 2 pp. Ill. 6¾ x 9¼ in.

Richardson & Boynton Co., New York, N. Y., Chicago, Ill., Philadelphia, Pa., Providence, R. I., Boston, Mass.

290. *The Richardson Vapor Vacuum-Pressure Heating System.* An interesting book which presents in clear non-technical language the principles of Vapor-Vacuum-Pressure heating; the economy over ordinary steam heating, steam and hot-water systems may be altered to use this principle with views of buildings where the V-V-P system is installed. 14 pp. Ill. 8 x 11 in.

291. *Perfect Warm Air Furnaces.* No. 203. Contains a full description of various types of warm air furnaces and parts, with dimensions and necessary data. 24 pp. Ill. 8 x 10½ in.

292. *Perfect Cooking Ranges.* Description and dimensions of the complete line of the new high enamel finish Richardson Perfect ranges, with charts and information regarding combination coal and gas cooking ranges. 40 pp. Ill. 8½ x 11 in.

Tuttle & Bailey Mfg. Co., 2 West 45th St., New York, N. Y.

395. *About Radiator Enclosures.* A booklet showing how easily and effectively unsightly radiators may be concealed by enclosures which adorn a room. 15 pp. Ill. 6¾ x 9¾ in.

396. *Special Designs. Catalog 66A.* A book of designs for grilles, screens, registers and ventilators to be used in connection with heating installations. Made of bronze, brass, iron and steel. 40 pp. Ill. 6¾ x ¾ in.

Utica Heater Company, Utica, N. Y.

557. *Utica Imperial Super-Smokeless Boilers.* These boilers burn all fuels and consume soft coal without smoke. The illustrated catalog contains complete technical data with lists of illustrations. 76 pp. Ill. 8½ x 11 in. (Separate bulletins may be had featuring the following buildings: Schools, Churches, Public Buildings, Apartments, Hotels, Residences, Industrial Buildings, Office and Theatres.)

558. *Warm Air Heating.* A folder featuring warm air heating equipment including *New Idea* pipeless furnaces, Superior pipe furnaces and *Super-Smokeless* furnaces for burning soft coal.

HEATING AND VENTILATION

American Blower Co., Detroit, Mich.

361. *Sirocco Service.* A quarterly publication containing descriptions of heating and ventilating systems installed by the American Blower Company, together with useful data for architects and engineers. 16 pp. Ill. 8½ x 11 in.

362. *General Catalog "ABC" Products.* A book full of useful data for all men who have to deal with heating and ventilating problems. 132 pp. Ill. 8½ x 11 in.

645. Special bulletins describing in detail all of the apparatus in their general catalog. Sent on request. Ill. 8½ x 11 in.

Buffalo Forge Co., 490 Broadway, Buffalo, N. Y.

215. *Buffalo Fan System of Heating, Ventilating and Humidifying.* Catalog 700. This contains a general discussion of heating and ventilating under four heads. Part 1, Public Buildings. Part 2, Industrial Plants. Part 3, Buffalo Apparatus. Part 4, Fan Engineering.

Garden City Fan Co., McCormick Bldg., Chicago, Ill.

673. *New Sectional Catalog No. 200.* Describing the latest improved cycloidal multivane fans for heating, ventilating and drying also standard steel plate fans and pipe coil heaters. Details, capacity tables and specifications, 24 pp. Ill. 7½ x 10½ in.

The H. W. Nelson Corporation (formerly Moline Heat), Moline, Ill.

411. *Univent Ventilation. Architects' and Engineers' Edition.* A scientific treatise on ventilation for schools, offices and similar buildings; with 40 pages of engineering data on ventilation for architects and engineers. 72 pp. Also "Supplement A" on Air Conditioning. 12 pp. Ill. with half-tones, line drawings and designing charts. 8½ x 11 in.

HOISTS—See Elevators and Ash Hoists

INCINERATORS—See Garbage Destroyers

INSULATION—See also Stucco Base

The Celotex Co., 111 W. Washington St., Chicago, Ill.

701. *Celotex Insulating Lumber.* An insulating material made from cane fibre in form of boards of various lengths and thicknesses. Specifications, physical properties and tests. Several catalogs, booklets and leaflets.

Insulite Co., 1100 Builders Exchange Bldg., Minneapolis, Minn.

487. *Universal Insulite in Building Construction.* Describes a clean, sanitary, odorless and vermin proof board made from selected waterproofed wood fibres, felted into light, strong, uniform sheets. Examples are given for use indoors and outdoors together with details and useful data. 37 pp. Ill. 8½ x 11 in.

United States Mineral Wool Co., 280 Madison Ave., New York.

83. *The Uses of Mineral Wool in Architecture.* Illustrated booklet. Properties of insulation against heat, frost, sound, and as a fire-proofing, with section drawings and specifications for use. It gives rule for estimate and cost. Size 5¼ x 6⅝ in. 24 pp.

IRON AND STEEL—See also Metals

The American Rolling Mill Co., Middletown, Ohio.

658. *The Story of Commercially Pure Iron.* A most interesting booklet recounting the historical development of iron and its present day manufacture in commercially pure, durable form. 48 pp. Ill. 6 x 9 in.

682. *What's Under the Galvanized Coating?* A booklet describing the process of galvanizing, its protective service and also the necessity for pure iron as a basis for galvanizing. 16 pp. Ill. 3¼ x 6¼ in.

KITCHEN EQUIPMENT—See also Stoves

Bramhall, Deane Co., 261-A West 36th St., New York.

59. *The Heart of the Home.* Booklet, illustrated. Deane's French Ranges (all fuels), cook's tables and plate warmers. Size 6 x 9 in. 32 pp.

LATH, METAL

American Steel & Wire Co., Chicago, Ill.

228. *Stucco Houses Reinforced With Triangle Mesh Fabric.* A pamphlet containing valuable data on stucco work with tables of qualtities of material and many illustrations of houses covered with stucco applied on Triangle Mesh Fabric. 24 pp. Ill. 6 x 9 in.

Concrete Engineering Co., Omaha, Neb.

346. *How to Use Ceco Lathing Materials.* An illustrated treatise on the use of expanded metal lath. Contains construction details and complete specifications, with sample piece of lath in pocket on cover of book. 16 pp. Ill. 8½ x 11 in.

LATH, METAL

Truscon Steel Company, Youngstown, Ohio.

316. *Hy-Rib and Metal Lath.* Tables, general data and illustrations of Hy-rib and metal lath construction. 6 pp. Ill. 8½ x 11 in.

LAUNDRY EQUIPMENT

Chicago Dryer Co., 2210 N. Crawford Ave., Chicago, Ill.

66. *Laundry Appliances.* Illustrated catalog. Descriptions of Laundry Dryers, Electric Washing Machines and Ironing Machines, especially adapted for use in residences, apartment buildings and small institutions. Size 8½ x 11 in. 48 pp.

The Pfaudler Company, Rochester, N. Y.

581. *Glass Lined Steel Laundry Chute.* Catalog describing a glass lined steel laundry chute with flushing ring at top and drain connection at bottom, specifications, dimensions and details adapted to hospitals and hotels. 14 pp. Ill. 5⅛ x 7⅜ in.

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REFERENCE LIST OF BUSINESS LITERATURE—Continued

LIGHTING—See also Electrical Equipment

Frank Adam Electric Co., 3649 Bell Ave., St. Louis, Mo.

629. *The Control of Lighting in Theatres.* A book describing means for complete control of lighting the stage, auditorium and other parts of theatres with distribution schedules and specifications. Also applications of control to Masonic buildings, schools and colleges. 32 pp. Ill. 8 x 11 in.

Cooper Hewitt Electric Company, 95 River Street, Hoboken, N. J.

553. *Industrial Lighting Briefs.* No. 1 deals with Industrial Lighting in theory and practice. No. 2 deals with the engineering of illumination with Cooper Hewitt Lamps. No. 3 deals with the quickness of response of the Hand to Eye. Each 4 pp. 8 x 10½ in.

E. Erikson Electric Co., 5 Portland St., Boston, Mass.

613. *Erikson Reflectors, Catalog No. 90.* Description of and details for installing reflectors in show windows, display cases, art galleries, rug racks, banks, churches, and other buildings. 32 pp. Ill. 6¼ x 9½ in.

I. P. Frink, Inc., 24th St. and 10th Ave., New York.

150. *Light Service for Hospitals. Catalogue 421.* A booklet illustrated with photographs and drawings, showing the types of light for use in hospitals, as operating table reflectors, linolite and multilite concentrators, ward reflectors, bed lights and microscopic reflectors, giving sizes and dimensions, explaining their particular fitness for special uses. Size 7 x 10 in. 12 pp.

218. *Picture Lighting. Booklet 422.* A pamphlet describing Frink Reflectors for lighting pictures, art galleries, decorated ceilings, cove lighting, the lighting of stained glass, etc., and containing a list of private and public galleries using Frink Reflectors. 24 pp. Ill. 5¼ x 7 in.

219. *Frink Reflectors and Lighting Specialties for Stores. Catalog No. 424.* A catalog containing a description of the Frink Lighting System for Stores; the Synthetic System of Window Illumination; and a number of appliances to produce the most effective lighting of displayed objects. 20 pp. Ill. 8 x 11 in.

220. *Frink Lighting Service for Banks and Insurance Companies. Reflectors. Catalog No. 425.* A very interesting treatise on the lighting of offices; with details of illustrations and description of lamps and reflectors. Contains a list, covering several pages, of banks using Frink Desk and Screen Fixtures. 36 pp. Ill. 8¼ x 11 in.

Harvey Hubbell, Inc., Bridgeport, Conn.

401. *Hubbell Flush Door Receptacles.* Description of a safe, convenient and practical wall outlet de luxe for fine residences, clubs, hotels, public buildings and offices. 4 pp. Ill. 8 x 10 in.

The Waterbury Metal Wares Co., Waterbury, Conn.

FS13. *"Wameco" Screwless Shade Holders.* A circular explaining the safety insured by using this device for holding ceiling shades and lights. Ill. 3½ x 5¾ in.

LIME

The Ohio Hydrate & Supply Co., Woodville, Ohio.

494. *A Job that Took a Million Years.* A description of how limestone is formed and how it is later converted into lime. All the processes are shown in detail and the uses of lime are illustrated. 16 pp. Ill. 8½ x 11 in.

LINCRUSTA-WALTON—See also Wall Covering

The Lincrusta-Walton Company, Hackensack, N. J.

519. *Lincrusta-Walton.* This book gives directions for buying, caring for and applying Lincrusta-Walton; together with color chart and many pages showing patterns. 67 pp. 8½ x 11 in. Ill. Bound in boards.

LINOLEUM

Bonded Floors Co., Inc., 1421 Chestnut St., Philadelphia, Pa.

719. *Linoleum.* A standard specification of the material, workmanship and guarantee, with valuable comments and suggestions. Also additional clauses for insertion in specifications for Masonry, Heating, etc., Navy Department specification for battleship linoleum and details of installation. 8 pp. Ill. 8½ x 11 in.

LOCKERS, STEEL—See Factory Equipment

LUMBER

E. L. Bruce Co., Memphis, Tenn.

533. *Now the Cedar Clothes Closet.* A book illustrated in colors describing "Bruce Cedaline," for lining clothes closets as a complete protection against moths. 12 pp. Ill. 4¼ x 6 in.

The Long-Bell Lumber Co., R. A. Long Building, Kansas City, Mo.

203. *From Tree to Trade.* This book tells the story of the manufacture of lumber. Gives an idea of the scope of the business and the care and attention given to the manufacture and grading of Long-Bell trade-marked products. 100 illustrations. 48 pp. 8½ x 11 in.

The Pacific Lumber Company of Illinois, 2060 McCormick Bldg., Chicago, Ill.

363. *Construction Digest*—The use of California Redwood in residential and industrial construction. Contains illustrations, grading rules, specifications and other technical data for architects and builders. 16 pp. Ill. 8½ x 11 in.

364. *Engineering Digest*—The use of California Redwood in industrial construction and equipment for factories, railroads, mines and engineering projects. 16 pp. Ill. 8½ x 11 in.

MAIL CHUTES

Cutler Mail Chute Co., Rochester, N. Y.

294. *The Cutler Mail Chute. Model F.* Describes the Cutler Mail Chute in its standard form, known as Model F. Contains data for rough floor openings not included in the Mail Chute contract. 16 pp. Ill. 4 x 9¼ in.

MANTELS

Edwin A. Jackson & Bro., Inc., 50 Beekman St., New York.

90. *Wood Mantels. Portfolio.* Wood mantel designs of various types and openings, giving dimensions, projections and showing fireplace grate designs. Size 9 x 6¼ in. 32 pp.

MARBLE—See Stone

Appalachian Marble Co., Knoxville, Tenn.

715. *Appalachian Tennessee Marble.* A series of six colored plates, description of physical properties, standard sizes of floor tile, specifications for laying floor tiles and for erecting base, wainscoting, bank screens and other standing work. Standard filing folder. 23 pp. Ill. 8½ x 11¼ in.

The Georgia Marble Co., Tate, Pickens Co., Ga., New York Office, 1328 Broadway.

634. *Why Georgia Marble is Better.* Booklet 3⅜ x 6 in. Gives analysis, physical qualities, comparison of absorption with granites, opinions of authorities, etc.

635. *Convincing Proof.* Booklet 3⅜ x 6 in. 8 pp. Classified list of buildings and memorials in which Georgia Marble has been used, with names of architects and sculptors.

METAL MOLDINGS

National Metal Molding Co., Pittsburgh, Pa.

152. *Hand-book for the Man on the Job.* An illustrated book of fittings and methods with description and instructions for installing National Metal Molding under all conditions; a book meant to be conveniently carried and used on the job. Size 4⅝ x 6 in. 102 pp.

METALS—See also Iron and Steel—Roofing

American Brass Co., Main Office, Waterbury, Conn.

138. *Price List and Data Book.* Illustrated. Loose-leaf Catalog. Covers entire line of Sheets, Wire Rods, Tubes, etc., in various metals. Useful tables. Size 3⅞ x 7 in. 168 pp.

385. *Copper Products.* Illustrated price list and tables of weights. Covers copper for roofing purposes, including strip copper for forming into leaders, gutters, valleys, flashings, etc. 64 pp.

American Sheet & Tin Plate Co., Frick Building, Pittsburgh, Pa.

452. *Reference Book. Pocket Edition.* Covers the complete line of Sheet and Tin Mill Products. 168 pp. Ill. 2½ x 4½ in.

Bridgeport Brass Co., Bridgeport, Conn.

483. *Seven Centuries of Brass Making.* A brief history of the ancient art of brass making and its early (and even recent) method of production—contrasted with that of the Electric Furnace Process—covering tubular, rod and ornamental shapes. 80 pp. Ill. 8 x 10½ in.

Rome Brass & Copper Company, Rome, N. Y.

473. *Price List No. 70.* A loose-leaf binder containing full price list of Rome Quality products, together with useful tables. 5⅛ x 7¼ in.

MILLWORK—See also Lumber—Building Construction—Doors and Windows

MORTAR—See also Cement

Louisville Cement Company, Inc., Louisville, Ky.

311. *Brixment, the Perfect Mortar.* The reading of this little book gives one a feeling that definite valuable information has been acquired about one of the oldest building materials. Modern science has given the mason a strong water-resisting mortar with the desirable "feel" of the best rich lime mortar. 16 pp. Ill. in colors. 5½ x 7¾ in.

MORTAR COLORS—See also Paints, Stains, Varnish

Ricketson Mineral Paint Works, Milwaukee, Wis.

376. *Ricketson Mortar Colors.* Two interesting folders with color card for these well known fadeless mortar colors in use for 35 years. 3¼ x 6 in.

PAINTS, STAINS, VARNISHES—See also Waterproofing

Joseph Dixon Crucible Co., Jersey City, N. J.

324. *Dixon's Silica-Graphite Paint.* A pamphlet describing the physical properties of silica-graphite paint and especially the wide difference between it and other protective paints. Contains also sample color card with specifications. 20 pp. and 6 pp. in color card. Ill. 3¼ x 6¼ in.

National Lead Company, 111 Broadway, New York, N. Y.

389. *Color Harmony.* Color card for glass finish and flat finish together with useful notes on painting and a collection of approximate formulas for obtaining the colors shown on the color card. 8 pp. Ill. 3⅝ x 8½ in.

708. *Early American Architecture.* An attractive portfolio of selected sketches and measured drawings showing Colonial and Georgian design containing 34 plates, 8¼ x 10¾ in. Suggested color schemes are included.

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REFERENCE LIST OF BUSINESS LITERATURE—Continued

PAINTS, STAINS, VARNISHES

Samuel Cabot, Inc., 141 Milk St., Boston, Mass.

341. *Cabot's Old Virginia White and Tints.* Describes a specially prepared "flat" white which architects say gives "the whitewash white effect." Also describes tints perfectly flat in tone giving the "pastel effect." Used on wood, brick, stone, and stucco. 16 pp. Ill. 4 x 8½ in.

The New Jersey Zinc Co., 160 Front St., New York, N. Y.

227. *Painting Specifications.* A booklet full of useful information concerning paint mixtures for application on various surfaces.

727. *Mapaz No. 1 Painting Handbook.* A combination note book and handbook describing the characteristics of zinc oxide and its use in painting. Also use of lace for stencils and tables for various color mixtures. 22 pp. text. 112 blank pp. 2 x 4½ in.

Ripolin Co., The, Cleveland, Ohio.

419. *Ripolin Specification Book.* 8 x 10¼ in., 12 pp. Complete architectural specifications and general instructions for the application of Ripolin, the original Holland Enamel Paint. Directions for the proper finishing of wood, metal, plaster, concrete, brick and other surfaces, both interior and exterior, are included in this Specification Book.

Standard Varnish Works, 443 Fourth Ave., New York, N. Y.

565. *Immaculate Distinction.* A book describing Satinette Enamel, and enduring white enamel for interior and exterior use. Specifications are given for use on new and old work, metal, plaster, etc. 22 pp. Ill. 5 x 7 in.

Standard Varnish Works, 443 Fourth Ave., New York,

566. *Architectural Reference Book, Third Edition.* A readily accessible and concise compilation of practical finishing information from which specifications readily can be written on varnishes, stains, fillers and enamels. 24 pp. Ill. in colors with samples on wood, etc. 8½ x 11 in.

PILES, CONCRETE

Raymond Concrete Pile Co., 140 Cedar St., New York.

156. *Raymond Concrete Piles—Special Concrete Work.* A booklet with data concerning the scope of the Raymond Concrete Pile Co., for special concrete work. It classifies piles, showing by illustration, text and drawings, the relative value of special shape and manufacture of piles. It gives formulæ for working loads, and relative economy. Size 8½ x 11⅛ in. 60 pp.

PIPE—See also Metals

Bridgeport Brass Company, Bridgeport, Conn.

556. *Brass Pipe and Piping; When and How it Should be Used. Bulletin No. 15.* This book contains valuable tables, charts and examples for the design of hot water installations, with illustrations of details and connections. It also discusses the use of pipe of different materials; various processes for preventing rust and corrosion in iron and steel pipes. It is a valuable treatise for all architects and engineers. 47 pp. Ill. 8 x 10½ in.

A. M. Byers Company, Pittsburgh, Pa.

679. *What is Wrought Iron?* Bulletin 26 A. Contains the definition of wrought iron, methods of manufacture, chemical and physical characteristics; advantages of wrought iron as a pipe material; service records from old buildings equipped with Byers Genuine Wrought Iron Pipe. How to tell the difference between iron and steel pipe. 40 pp. Ill. 8 x 10¾ in.

680. *The Installation Cost of Pipe,* Bulletin 38. Contains cost analysis of a variety of plumbing, heating, power and industrial systems, with notes on corrosive effects in different kinds of service. 32 pp. Ill. 8 x 10¾ in.

The Duriron Company, Dayton, Ohio.

548. *Duriron Acid-Proof Drain Pipe.* This is a handbook for the architect and engineer on Duriron drain pipe fittings, exhaust fans, sinks, etc. Contains specifications for installations, detail dimensioned drawings, reports on corrosive tests, long partial list of successful installations, etc. 20 pp. Ill. 8 x 10½ in.

National Tube Co., Frick Bldg., Pittsburgh, Pa.

670. *National Bulletin No. 25B. 3rd Edition.* Devoted to the installation of steel pipe in large buildings, architectural anti-corrosion engineering, gas piping, specifications and tables of strength and properties. 74 pp. Ill. 8½ x 10¾ in.

Rome Brass and Copper Company, Rome, N. Y.

509. *Bulletin No. 1. Seamless Brass Pipe.* This bulletin illustrates in colors nine installations of hot water heaters between range boiler, basement furnace, tank and instantaneous heaters for one and two-family houses and larger buildings. Contains also a number of estimating and designing tables, rules and formulas. 22 pp. Ill. 7½ x 11¾ in.

A. Wyckoff & Son Co., Elmira, N. Y.

397. *Wyckoff Wood Pipe. Catalog No. 42.* A description of machine-made woodstave pipe and Wyckoff's express steam pipe casing. Contains also a number of pages of useful formulas and tables for hydraulic computations. 92 pp. Ill. 6 x 9 in.

PIPE COVERING

The Philip Carey Co., Lockland, Cincinnati, Ohio.

379. *Pipe and Boiler Coverings. Catalog 1362.* A catalog and manual pipe and boiler coverings, cements, etc. Contains a number of valuable diagrams and tables. 71 pp. Ill. 6 x 9 in.

PLUMBING EQUIPMENT—See also Drains

Bridgeport Brass Co., Bridgeport, Conn.

461. *Plumbing Supplies.* Catalog of adjustable swivel traps; basin and bath supplies and waste; basin and sink plugs; low tank bends; iron pipe sizes of brass pipe. 20 pp. Ill. 8 x 10½ in.

Crane Company, 836 So. Michigan Ave., Chicago, Ill.

240. *General Plumbing Catalogue.* A very complete and well illustrated booklet describing the complete line of Crane plumbing goods. 80 pp. 8½ x 11 in.

Jenkins Bros., 80 White St., New York, N. Y.

236. *Jenkins Valves for Plumbing Service.* This booklet contains all necessary information about Jenkins Valves commonly used in plumbing work. 16 pp. Ill. 4¼ x 7¼ in. Stiff paper cover.

Kohler Company, Kohler, Wisconsin.

209. *"Kohler of Kohler."* A booklet on enameled plumbing ware describing processes of manufacture and cataloging staple baths, lavatories, kitchen sinks, slop sinks, laundry trays, closet combinations. 48 pp. Ill. 5⅛ x 8 in. Roughing-in Measurement Sheets 5 x 8 in.

531. *Catalog F.* This is a complete catalog of Kohler enamelled ware for plumbing installations, together with high grade fittings. There is also a brief and interesting description of the manufacture of high grade enamelled ware and a statement of the facts about Kohler village one of the discussed experiments in modern industrial town building. 215 pp. cloth bound. Ill. 7½ x 10⅜ in.

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

696. *Vitreous China Plumbing Fixtures.* A valuable and complete catalog of vitreous china lavatories, drinking fountains, bidets, water closets, urinals, slop sinks, bathtubs, kitchen sinks and laundry trays, also seats, faucets, bathroom fixtures and accessories. Completely illustrated with roughing in diagrams. 242 pp. Ill. 8 x 11 in.

Speakman Company, Wilmington, Del.

691. *Speakman Showers and Fixtures, Catalog H.* A complete catalog treating of everything pertaining to the mixing and control of water used in all kinds of shower and tub baths, lavatories and sinks, also strainers, drains and traps. Complete roughing-in measurements are included. A valuable catalog. 20 pp. Ill. 4½ x 7½ in.

The Powers Regulator Co., 2720 Greenview Ave., Chicago, Ill.

725. *The Powers Shower Mixer, Bulletin No. 154.* Description and details of a shower bath mixer that insures uniform water temperature regardless of disturbance of initial water pressure. 4 pp. Ill. 6⅜ x 9¼ in.

The Vulcan Brass Manufacturing Co., Cleveland, Ohio.

678. *Paragon Brass Goods, Catalog C.* New catalog showing sectional drawings, illustrations and text describing exclusive feature of "Paragon" self closing basin and sink faucets and stops; high pressure ball cocks, vitreous china bubblers, compression and quick-compression work. 60 pp. Ill. 7½ x 10⅛ in.

PUMPS

The Dayton Pump and Manufacturing Company, Dayton, Ohio.

475. *Electric House Pumps and Water Supply Systems.* A heavy paper binder containing illustrated bulletins 8½ x 11 in. These bulletins describe pumps as well as complete automatic electric and gasoline water supply systems and all accessories, together with specifications, detail drawings and tables of dimensions. 48 pp.

The Goulds Mfg. Co., Senaca Falls, N. Y.

387. *Power Pump Bulletins.* There are 22 of these bulletins treating on piston, plunger, air pressure, vacuum, triplex and centrifugal pumps. Bulletin 112 and Bulletin 122 containing the theory of pumps together with power pump data are of especial value to engineers in the offices of architects. 16 to 36 pp. Ill. 8 x 10 in.

REFRIGERATION

The Automatic Refrigerating Co., Hartford, Conn.

298. *The Mechanics of Automatic Refrigeration and Automatic Refrigeration for Hospitals and Sanatoriums.* Two essential booklets for the library of designers and specification writers. 24 and 28 pp. Ill. 8½ x 11 in.

370. *Automatic Refrigeration for Retail Markets.* A valuable treatise on the subject matter mentioned in the title. 30 pp. Ill. 8½ x 11 in.

Baker Ice Machine Co., Inc., Omaha, Nebraska.

661. *Baker System Refrigeration.* A catalog explaining the application of refrigeration for hotels, hospitals, institutions and restaurants requiring up to 50 ton daily capacity including mechanical details and specifications. 20 pp. Ill. 9 x 12 in.

Jamison Cold Storage Door Co., Hagerstown, Md.

569. *Heavy Duty Cold Storage Doors. Catalog No. 10.* Complete description of both hinged and sliding cold storage doors for every equipment. Also description of cold storage windows and ice chutes. 79 pp. Ill. 5¾ x 9 in.

MADDOCK *Sanitary* Fixtures

Bousseau's Urania done to grace La Granja Garden of Philip the Fifth of Spain

"objets d'art"

WHEREVER instinctive good taste is reflected in the appointments of the home —there one may expect to find Thomas Maddock fixtures in the bathroom.

ARISTON-MADERA SILENT K-2900

White Vitreous China Non-Soiling Silent Action Syphon Jet Closet with extended top inlet, floor outlet, extended front bowl and cut-back flushing rim. Equipped with white celluloid-covered seat, flush pipe cover and white vitreous china tank with heavy brass, silent acting fittings.

THOS. MADDOCK'S SONS CO. TRENTON, N.J.

THOMAS MADDOCK'S SONS COMPANY

Trenton, New Jersey.

Specifications of most products advertised in THE AMERICAN ARCHITECT appear in the Specification Manual

REFERENCE LIST OF BUSINESS LITERATURE—Continued

REFRIGERATORS

The Jewett Refrigerator Company, 27 Chandler Street, Buffalo, N. Y.

655. *Manual of Refrigerators.* This manual completely describes the construction of refrigerators for use in hotels, clubs, hospitals, institutions and residences, with specifications. Numerous plans showing size and arrangement of refrigerators in kitchens, service and lunch rooms are included. 30 pp. Ill. 8½ x 11 in.

698. *Jewett Solid Porcelain Refrigerators.* This improved refrigerator has an interior finish of one-piece solid porcelain ware for both food and ice compartments. Complete line with dimensions, types and prices. 22 pp. Ill. 8¼ x 11 in.

McCray Refrigerator Co., Kendallville, Ind.

472. *Refrigerators and Cooling Rooms. Cat. 53.* A catalog of cooling equipment for hotels, restaurants, hospitals, institutions, colleges and clubs. Catalog No. 96 deals with refrigerators for residences. 52 pp. each. Ill. in colors. 7½ x 10 in.

REINFORCING STEEL—See also Concrete, Reinforced

Rail Steel Products Association, Reinforcing Bar Division, Arcade Bldg., St. Louis, Mo.

582. *Rail Steel for Concrete Reinforcing.* A book describing the manufacturing, fabrication and physical properties of re-rolled, billet and rail steel bars with specifications for their use. 84 pp. Ill. 8½ x 11 in.

RESTAURANT EQUIPMENT—See Kitchen Equipment

ROOFING—See also Slate—Metals—Shingles

American Brass Company, Main Office, Waterbury, Conn.

515. *Copper Roofing. Service Sheet.* This service sheet contains details for laying copper roofing together with standard specifications. 17 x 22 in. folding to 8½ x 11 in. printed both sides.

American Sheet & Tin Plate Co., Frick Building, Pittsburgh, Pa.

463. *Copper—its Effect Upon Steel for Roofing Tin.* Describes the merits of high grade roofing tin plates and the advantages of the copper-steel alloy. 28 pp. Ill. 8½ x 11 in.

The Barber Asphalt Company, Land Title Bldg., Philadelphia, Pa.

422. *Standard Trinidad Built-Up Roofing Specifications.* Contains two specifications for applying a built-up roof over boards and two for applying over concrete. Gives quantities of materials and useful data. 8 pp. 8 x 10½ in. Ask at same time for Good Roof Guide Book. 32 pp. Ill. 6 x 9 in.

702. *Specifications.* A pamphlet containing standard specifications for Genasco Standard Trinidad Lake Asphalt Built-up Roofing, Genasco Economy Trinidad Lake Asphalt Built-up Roofing, Genasco Membrane Waterproofing and Genasco Asphalt Flooring. Illustrated with sketches showing construction. 16 pp. Ill. 8 x 11¼ in.

The Philip Carey Co., Lockland, Cincinnati, Ohio.

378. *Architects' Specification Book on Built-Up Roofing.* A manual for detailers and specification writers. Contains complete details and specifications for each type of Carey Asphalt Built-Up Roof. 20 pp. Ill. 8½ x 11 in.

The Edwards Manufacturing Company, Cincinnati, Ohio.

535. *Shingles and Spanish Tile of Copper.* This book, illustrated in colors, describes the forms, sizes, weights and methods of application of roof coverings, gutters, downspouts, etc., of copper. 16 pp. Ill. in special indexed folder for letter size vertical files.

Ludowici-Celadon Co., Chicago, Ill.

120. *Roofing Tile.* A detailed Reference for Architects' Use. Sheets of detailed construction drawings to scale of tile sections of various types and dimensions, giving notes of their uses and positions for various conditions of architectural necessity. Size 9½ x 13½ in. 106 plates.

154. *The Roof Beautiful.* Booklet. Well illustrated with photographs and drawings, giving history and origin of roofing tile, and advantages over other forms of roofing. Types shown by detailed illustrations. Size 8 x 10¼ in. 32 pp.

The Richardson Company, Lockland, Cincinnati, Ohio.

492. *Viskalt Membrane Roofs.* Contains specifications for applying Membrane roof over boards and also for applying over concrete. Illustrated with line drawings of several approved methods of flashings. 3 pp. 8½ x 11 in.

Rising and Nelson Slate Company, 101 Park Ave., New York, N. Y.

496. *Tudor Stone Roofs.* This leaflet discusses colors and sizes of Tudor hand-wrought slates; deals with the service given to architects and tells how the material is quarried for each product after careful drawings and specifications are prepared in co-operation with architects. Special grades are described in detail and illustrations are given of buildings with Tudor slate roofs. Contains also specifications of laying slate. 4 pp. Ill. 8½ x 11 in.

Rising and Nelson Slate Company, 101 Park Ave., New York, N. Y.

571. *Tudor Stone Roofs.* A brochure describing the 7 special grades of Tudor Stone and the 7 grades of commercial slate produced by this company with illustrations of many structures on which it has been used. 28 pp. Ill. 6 x 9½ in.

Vendor Slate Co., Easton, Pa.

333. Occasional brochures on architecturally pertinent phases of roofing slate sent on request. See also listing under Slate.

ROOF CONSTRUCTION

Porete Mfg. Co., 2 Verona Ave., Newark, N. J.

258. *Porete Roof Decks.* An illustrated circular describing Porete (a new light-weight concrete) for use in fireproof roofs for all buildings. 4 pp.

ROOF-LIGHTS—See Glass Construction

SAFETY TREADS

American Abrasive Metals Co., 50 Church St., New York City.

736. *Feralun Anti-Slip Treads.* Six plates of details of anti-slip stair treads, door saddles, elevator door sills, floor plates, trench covers and garage ramps. Plates can be traced or blue printed. Also data sheet of sizes, thickness and specifications. 7 pp. Ill. 8½ x 11 in.

SANDSTONE—See Stone

SASH—See Doors and Windows

SASH CHAIN AND CORD

Samson Cordage Works, Boston, Mass.

586. *Samson Sash Cord.* Specifications and condensed descriptions of Samson spot window sash cord, Samson mahogany wire center sash cord and accessories. 24 pp. Ill. 3½ x 6¼ in.

SCREENS

American Wire Fabrics Company, 208 So. La Salle St., Chicago, Illinois.

305. *Catalog of Screen Wire Cloth.* A catalog and price list of screen wire cloth, black enamelled, galvanized, aluminoid, copper, bronze. 30 pp. Ill. 3½ x 6¼ in.

The Higgin Manufacturing Co., 5th and Washington Ave., Newport, Ky.

353. *Screen your Home in the Higgin Way.* A description of Higgin door and window screens with practical data. 16 pp. Ill. 8½ x 11½ in.

New Jersey Wire Cloth Company, 614 South Broad St., Trenton, N. J.

409. *A Matter of Health and Comfort. Booklet No. 2331.* A booklet telling all about screens, the durability of copper and its superiority over all other metals for screen purposes. 16 pp. Ill. 5 x 7¾ in.

SHINGLES—See also Roofing

The Philip Carey Co., Lockland, Cincinnati, Ohio.

381. *Carey Asfaltslate Shingles.* Folder containing illustrations of attractive buildings and residences on which Carey Asfaltslate Shingles have been used. Describes this type of shingle, showing its special claims and advantages.

SIDEWALK LIGHTS—See also Vault Lights

SLATE—See also Roofing

Vendor Slate Co., Inc., Easton, Pa.

332. *The Vendor Book of Roofing Slate for Architects.* Contains original information on slate in various architectural uses; history, geology, sundry practical matters; complete descriptive classification; extended treatise on architectural roof design and specifications. 24 pp. Ill. 8½ x 11 in.

STAINS—See also Paints, Stains, Varnishes

STAIRWAYS—MOVABLE

The Bessler Movable Stairway Co., Akron, Ohio.

541. *The Modern Way Up.* A book describing a stairway that helps utilize attic space. It folds up in the ceiling and is concealed when not in use. Letters are given from contented users. 24 pp. Ill. 4¾ x 7¾ in.

STEEL JOIST CONSTRUCTION

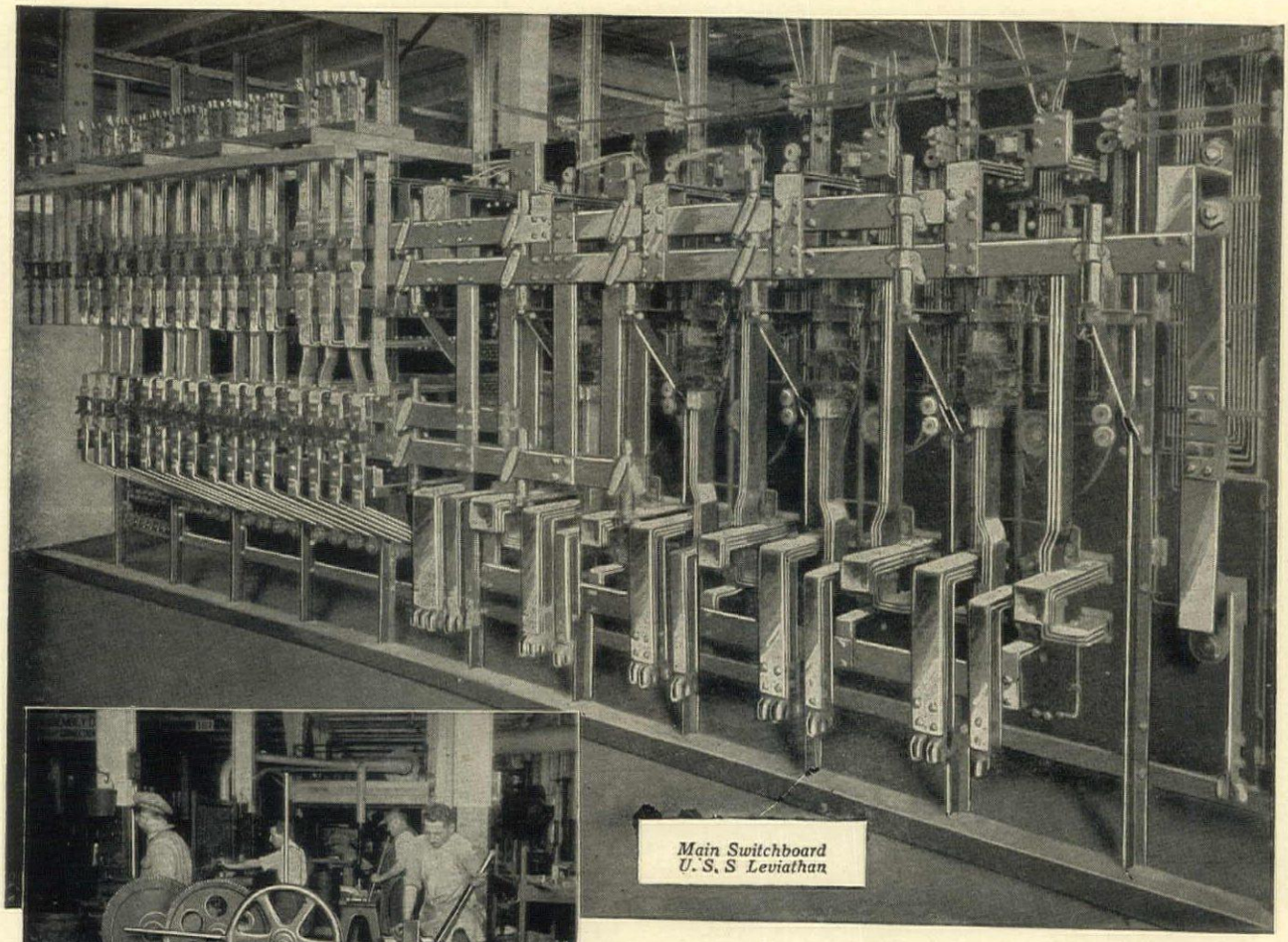
Truscon Steel Co., Youngstown, Ohio.

641. *Truscon Steel Joist Data Book.* Complete data of steel joists giving properties, dimensions, safe loads, coefficients of deflection, details of connections, specifications, directions for installations. 32 pp. Ill. 8½ x 11 in.

STONE

The Appalachian Marble Company, Knoxville, Tenn.

503. *Appalachian Tennessee Marble.* A new booklet on the qualities to be demanded in marble and a treatise on Tennessee marble by T. Nelson Dale (Retired Geologist, U.S.G.S.). Contains also illustrations of the plant of the company, buildings in which Appalachian Tennessee Marble has been used and four-color process plates of the six major Appalachian marbles. In tough paper indexed cover. 12 pp. Ill. 8½ x 11 in.



Main Switchboard U. S. S Leviathan

Special machinery for bending connection bars

Behind the Switchboard

It is one thing to look at the front of a switchboard, especially after installation, but it is quite another matter, and an important one, to look at the back of the switchboard just after assembly at the maker's works.

Specifications for bus copper are deficient when expressing only the conductivity and carrying capacity of the bus copper. They should be supplemented to provide for the minimum number of bolted or sweated joints. This minimum is reached in G-E manufacture by the use of machinery that permits bus copper to be shaped with twists, offsets, edgewise bands, or right, acute and obtuse angle flat bends.

All connection bars in G-E switchboards are symmetrically formed and supported to provide perfect alignment.

Terminal locations should be arranged for most economical use of copper.

Busbar supports are installed only at intersections of panels. Heavy busbar supports are fastened at both top and bottom.

The above provisions are a few of the many engineering and manufacturing refinements worked out after years of experience in making switchboards for buildings.

This advertisement is the fifth part of the story of the building of quality switchboards. Our ambition is to make this story of sufficient interest to merit a place in your file No. 31c2.

General Electric Company
Schenectady, N. Y.

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GENERAL ELECTRIC

Specifications of most products advertised in THE AMERICAN ARCHITECT appear in the Specification Manual

REFERENCE LIST OF BUSINESS LITERATURE—Continued

STONE

Indiana Limestone Quarrymen's Assn., P. O. Box 503, Bedford, Ind.

265. *Folders, Series D.* Structural detail and data sheets showing methods of detailing cut stone work in connection with modern building construction. 4 pp. each. 8½ x 11 in.

366. *Standard Specifications for Cut Stone Work.* This is Vol. III, Series "A-3," Service publications on Indiana Limestone, containing Specifications and Supplementary Data, relating to best methods of specifying and using this stone for all building purposes. This valuable work is not for general distribution. It can be obtained only from a Field Representative of the Association or through direct request from architect written on his letterhead. 56 pp. Ill. 8½ x 11 in.

693. *Indiana Limestone Homes, Series B. Vol. 5.* A portfolio containing sixteen designs for small and moderate-sized dwellings of different styles of architecture and sizes of lots. Plot plan, floor plans, perspective and description. Free to architects and draftsmen requesting same on employer's business stationery. 84 pp. Ill. 8½ x 11 in.

National Building Granite Quarries Asso., Inc., 31 State Street, Boston, Mass.

416. *Architectural Granite No. 1 of the Granite Series.* This booklet contains descriptions of various granites used for building purposes; surface finishes and how obtained; profiles of moldings and how to estimate cost, typical details; complete specifications and 19 plates in colors of granite from various quarries. 16 pp. Ill: 8½ x in.

STORE FRONTS.

Detroit Show Case Co., Detroit, Mich.

77. *Designs.* A booklet. Store fronts and display window designs, giving plans and elevations, and descriptions. Size 9¼ x 12 in. 16 pp.

78. *Details.* Sheets of full size details of "Desco" awning transom bar covers, sill covers, side, head and jamb covers, ventilated hollow metal sash and profile of members. Size 16 x 21½ in. 3 sheets.

STOVES

National Stove Co., Division of American Stove Co., Lorain, Ohio.

506. *Catalog No. 94, Second Edition.* A catalog of Direct Action Gas Ranges equipped with Lorain Oven Heat Regulator; also cookers, laundry stoves, hot plates, kitchen heaters and waste burners, automatic water heaters, coil heaters, ovens, etc.

Quick Meal Stove Co., Division of American Stove Co., St. Louis, Mo.

505. *Catalog No. 131.* A catalog of gas (also combination coal and gas) cook stoves; gas boilers, soldering furnaces, cake bakers, hot plates, water heaters, gas heaters for rooms. Lorain Oven Heat Regulations, etc. 56 pp. 6 x 9 in.

STUCCO—See also Cement

Portland Cement Association, 347 Madison Ave., N. Y. C.

594. *Portland Cement Stucco.* Illustrated leaflet of recommended practice for Portland Cement Stucco. Contains data on materials, proportions, application and curing. Table of colors for various tints, photographs of surface textures and drawings of construction details also given. 15 pp. Ill. 8½ x 11 in.

STUCCO BASE

The Bishopric Manufacturing Company, Cincinnati, Ohio.

451. *Bishopric for All Time and Clime.* A booklet describing Bishopric materials; giving building data, detailed drawings and specifications. Illustrated with half tones from photographs of houses built of Bishopric materials. 52 pp. Ill. 8 x 10½ in.

TELEPHONES

Automatic Electric Co., 945 W. Van Buren St., Chicago, Ill.

683. *Architect's Specifications for Interior Telephone System.* A complete and short specification for the installation of interior telephone systems adapted to all kinds of buildings and uses. 4 pp. 8½ x 11 in.

684. *The Straight Line.* A booklet devoted to interior communication by use of private automatic exchanges and the P-A-X Code Calls. Description of switchboards, instruments and accessories. 38 pp. Ill. 5 x 8 in.

Stromberg-Carlson Telephone Mfg. Co., Rochester, New York.

304. *Inter-Communicating Telephone Systems. Bulletin No. 1017.* A pamphlet giving just the information required for the installation of intercommunicating systems from 2 to 32 stations capacity. 15 pp. Ill. 7¾ x 10 in.

TERRA COTTA

Atlantic Terra Cotta Company, 350 Madison Avenue, New York, N. Y.

425. *Questions Answered.* A brief but full description of Atlantic Terra Cotta and its use in buildings. 32 pp. Ill. 5¼ x 7 in.

551. *Monthly Magazine, Atlantic Terra Cotta.* March issue contains illustrations of B.C. and A.D. Terra Cotta and construction details of a cornice and parapet balustrade. 16 pp. Ill. 8½ x 11 in.

National Terra Cotta Society, 19 West 44th St., New York City.

664. *Standard Specifications.* Contains complete detailed specifications for the manufacture, furnishing and setting of terra cotta, a glossary of terms relating to terra cotta and a short form specification for incorporating in architect's specification. 12 pp. 8½ x 11 in.

National Terra Cotta Society, 19 West 44th St., New York City.

666. *Color in Architecture.* An illustrated treatise upon the principles of color design and appropriate technique. 38 pages. Ill. 8½ x 11 in.

667. *Present Day Schools.* Illustrating 42 examples of school building architecture with an article on school house design by James O. Betelle, A. I. A. 32 pp. Ill. 8½ x 11 in.

668. *Better Banks.* Illustrating many banking buildings in terra cotta with an article on its use in bank design by Alfred C. Bossom, architect. 32 pp. Ill. 8½ x 11 in.

The Northwestern Terra Cotta Co., 2525 Clybourn Ave., Chicago, Ill.

96. *Architectural Terra Cotta.* A collected set of advertisements in a book, giving examples of architectural terra cotta, ornamental designs and illustrations of examples of façades, of moving-picture houses, office buildings, shops, vestibules and corridors in which Northwestern Terra Cotta was used. Size 8½ x 11 in. 78 pp.

TILE—ORNAMENTAL

The Associated Tile Manufacturers, Beaver Falls, Pa.

358. *Home Suggestions.* A new book in colors describing and illustrating the use of tiles in floors, walls, ceilings, fireplaces, garages, for exterior embellishment, etc. Full of suggestions. Sent to architects on request. 7½ x 10⅝ in.

359. *Basic Information on Tiles.* Book giving practical information on ingredients, processes, gradings, sizes, shapes, colors, finishes and nomenclature. Sent to architects on request. 7½ x 10⅝ in.

374. *Basic Specifications for Tilework and Related Documents. No. K-300.* This specification is prepared in a very systematic manner for the use of architects and builders. It is printed on one side of a sheet with facing page blank to receive memoranda. Various colored sheets make reference easy and simplify greatly the work of a specification writer in specifying tilework. 38 pp. 7½ x 10⅝ in.

375. *"Work Sheets" for Specification Writers.* To be used in connection with "Basic Specification for Tilework and Related Documents." 16 sheets 7½ x 10⅝ in.

706. *Glazed Tiles and Trimmers, Publication K-400.* An invaluable book for use in laying out glazed tile work. Details of standard tiles, mouldings, curbs, sills and other trimmers with illustrations of assembling for many uses. Free to architects and members of their staff only. 86 pp. Ill. 7¾ x 10¾ in.

TIME CLOCKS—See Clocks

TOILET PARTITIONS—See Wainscoting

TRIM—See also Doors and Windows

TRUSSES—See Building Construction

VARNISH—See Paints

VAULT LIGHTS

American Three Way Luxfer Prism Co., 13th Street and 55th Court, Chicago, Ill.

424. *Daylighting. Catalog 21.* A complete catalog on glass prisms for use in transoms, sidewalk and floor lights, skylights, etc., for lighting places inaccessible to direct daylight. Contains also measurements, specifications and other data required by designers. 42 pp. Ill. 8½ x 11 in.

VENTILATION—See Heating and Ventilation

VENTILATORS

The Burt Manufacturing Co., Akron, Ohio.

207. *General Catalogue* covering entire line of Ventilators, Exhaust Heads and Filters. Separate leaflets on each type of ventilator, vent and damper.

525. *The Great Outdoors Brought Inside.* In this book is a description of the new rectangular combination skylight and ventilator; the Burt fan ventilator for removing odors, fumes, etc., when atmospheric conditions interfere with the gravity process; and a table giving prices, dimensions, weights and gauges of iron of the Burt Ventilator. Some good general information about ventilators is included. 16 pp. Ill. 3⅝ x 6¼ in.

WAINSCOTING

The Vitrolite Company, Chamber of Commerce Building, Chicago, Ill.

648. *Toilet Partitions and Wainscoting. Architects Tile Bulletin No. 7.* Describing the uses of Vitrolite, its physical properties, details of installation and specifications. 32 pp. Ill. 8½ x 11 in.

WALL BOARD

The Compo Board Co., Minneapolis, Minn.

733. *Compo Board.* A booklet describing the combination of heavy paper, wooden core and cement in a five ply wall board, its qualities and uses. 16 pp. Ill. 5 x 7½ in.

734. *Instruction Sheets.* Instructions for correct application of Compo Board and the proper places for its use. 4 pp. and 8 pp. Ill. 3 x 6 in.

WALL COVERING—See also Lincrusta-Walton

Standard Textile Products Co., 320 Broadway, New York, N. Y.

111. *Sanitas, Modern Wall Covering.* Folio. Plates of color renderings of various interiors, with suggestions for the library, living room, dining room, boudoir, kitchen and church wall covering, using Sanitas. Size 11½ x 6 in. 15 plates.

REFERENCE LIST OF BUSINESS LITERATURE Continued

WALL COVERING

Standard Textile Products Co., 320 Broadway, New York, N. Y.

112. *Sanitas, and Its Uses.* Booklet. Text and color illustrations of Sanitas as a wall covering, with tables for wall and ceiling measurements. Notes on sanitary character, cleanliness and durability of Sanitas. Size 5 x 7 in. 28 pp. 6 color plates and 2 sample sheets.

113. *Sanalining Sanitas Linmg and Prepared Lining.* Folder. Notes on durability and cleanly character of the above three products. Size 3¾ x 6 in.

114. *Hints to Decorators.* Booklet. Instructions and specifications for the application of Sanitas, with notes on finishes and material. Size 5 x 6¾ in. 20 pp.

WATER HEATERS

Ruud Manufacturing Co., Pittsburgh, Pa.

567. *Ruud Gas Water Heaters.* Bulletins in filing folder describing instantaneous automatic water heaters for small homes and special uses, multi-coil automatic storage systems, automatic storage systems and tank water heaters. Details for connections, hot water service and specifications. 19 pp. Ill. 8½ x 11 in.

589. *Ruud Automatic Storage Systems.* Catalog of automatic hot water storage systems for domestic, industrial and commercial uses. Details, capacities, dimensions and other data. 24 pp. Ill. 6 x 9 in.

590. *Ruud Multi-Copper-Coil Automatic Storage Systems.* Catalog describing automatic hot water storage systems of large capacity for large residences, apartment buildings, hotels, hospitals, gymnasiums and factories. Details, capacities and dimensions for complete line. 32 pp. Ill. 6 x 9 in.

WATERPROOFING—See also Dampproofing.

Security Cement & Lime Co., Hagerstown, Md.

726. *Waterproofing with CAL.* A circular treating of the integral method of waterproofing concrete by the use of Cal. Also specifications for use. 4 pp. 8½ x 11 in.

WATER SOFTENERS

The Permutit Company, 440 Fourth Ave., New York.

105. *Permutit (Water Rectification Systems.)* Illustrated booklet. Describes all methods of softening water, including the original Zeolite process. For homes, hotels, apartment houses, swimming pools, laundries and industrial plants. Size 8½ x 11 in. 32 pp.

482. *Bulletin No. 1600.* This bulletin treats of the value of soft water in the house and describes the Wayne Domestic Water Softening System. 6 pp. Ill. 8¼ x 10½ in.

Wayne Tank and Pump Co., Fort Wayne, Ind.

687. *Water Softening and Filtration.* A valuable treatise on the subject of slow-acting and quick-acting types of water softeners and their application to commercial, industrial and domestic uses. The construction of and uses for Wayne Pressure Filters are also adequately described. 32 pp. Ill. 8¼ x 10½ in.

WATER SUPPLY—See Pumps

WEATHER STRIPS

The Diamond Metal Weather Strip Co., Columbus, Ohio.

616. *The Diamond Way.* A catalog of full size details showing the application of Diamond metal weather strips to double hung and casement windows and doors with complete specifications. 34 pp. Ill. 8½ x 11 in.

The Higgin Manufacturing Co., 5th and Washington Ave., Newport, Ky.

354. *Higgin Metal Weather Strips.* A booklet of considerable value to architects and builders on the use of weather strips. Ask also for the companion book on "The Reason Why." Each booklet 12 pp. Ill. 6 x 9 in.

Monarch Metal Products Co., 5020 Penrose Street, St. Louis, Mo.

512. *Monarch Metal Weather Strips.* The publication embodies all the suggestions for advertising literature made by the Committee on Structural Service of the American Institute of Architects. It contains a treatise on inleakage around windows together with description of Monarch Metal Weather Strips. Contains many detail working drawings. 48 pp. Ill. 7⅛ x 10½ in.

WINDOWS—See Doors and Windows

WIRE AND CABLE—See Electric Wire and Cable

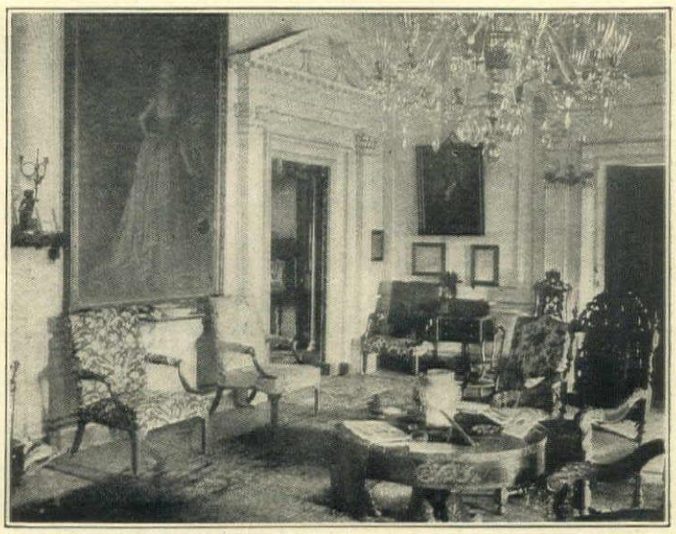
WOODWORK—See also Doors and Windows—Lumber

Curtis Companies Service Bureau, Clinton, Iowa.

663. *Keeping Down the Cost of Your Woodwork.* A book illustrating Curtis interior woodwork and built-in cabinets and fixtures designed by Trowbridge and Ackerman, Architects, New York. Colored illustrations and details. 16 pp. Ill. 7 x 9¼ in.

Hartmann-Sanders Company, 6 East 39th St., New York, N. Y.

334. *Catalog No. 47.* Illustrating Kell's Patent Lock Joint wood stave columns for exterior and interior use. 48 pp. Ill. 7½ x 10 in.

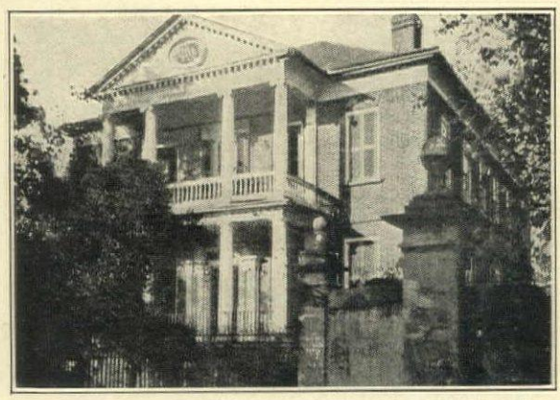


Drawing-room, Bull-Pringle House, Charleston, S. C. Selected from Ware's Georgian Period. © U. P. C. Book Co.

BULL-PRINGLE'S *famous Colonial Room*

THE BULL-PRINGLE HOUSE was built in 1765 by Miles Brewton, a wealthy merchant of Charleston, S. C. It is simple and plain in its plan, sturdy in construction, and stately in effect.

Today architects regard it as a notable example of the two-story porch treatment in Colonial architecture.



Front view of Bull-Pringle House showing the two-story Colonial porch.

The main doorway, centrally placed and flanked by pilasters, leads into a stone-flagged hall. This hall runs through to the rear, dividing the lower floor into two suites.

At the rear of this hall is a handsomemahogany staircase of two flights, with gracefully turned banisters and carved stair-ends. The half-pace landing at the end of the first flight is lighted by a deeply recessed three-light window. From this landing an excellent view is obtained of the quaint old courtyard in the rear and the slave quarters.

The upper hall of this old Colonial mansion is very dignified and elaborate, with heavily pedimented doors to the chambers and a deeply arched entrance to the drawing-room.

Passing into this drawing-room, even a casual observer is quickly impressed with its atmosphere of old-time splendor. Expert critics have pronounced this drawing-room as the most beautiful Colonial room in America. It is a long, inviting chamber, with a rich dado, handsome cornice, and elaborate mantel which is carried up to the coved ceiling.

Lofty paneled walls complete the charm of this spacious room. Painted throughout in tints of cream and ivory, these walls add warm hospitality to a room which would otherwise be severely formal.

You can use these measured drawings

The interiors of the Bull-Pringle House have been accurately measured and drawn by E. Eldon Deane. These measured drawings, together with full-size plates of other Colonial structures, both exteriors and interiors, have been compiled in a Portfolio of Early American Architecture. Write us for your copy of Portfolio No. 7.

The historical notes you have just read will not, however, appear in the Portfolio. So keep this page for reference after you receive your Portfolio.

Residence of Charles Schreiner, San Antonio, Texas, T. Emmett Jackson, architect; one of the many fine homes equipped with a McCray.

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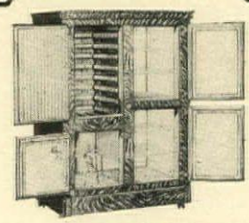
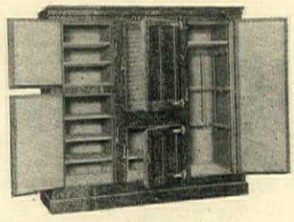
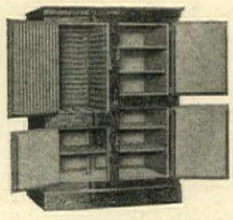


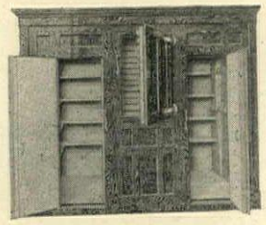
For Residences



For Hospitals



For Clubs, etc.



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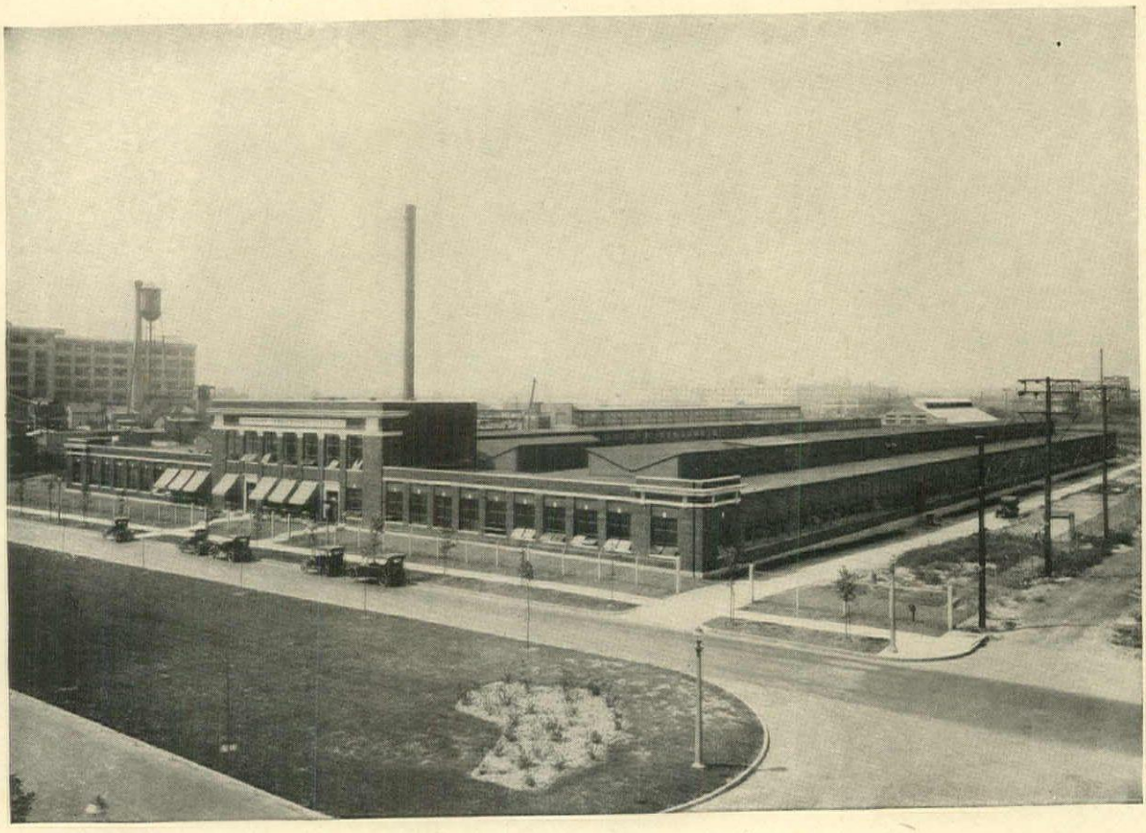

St. Louis plant of the Standard Underground Cable Company, Carey roofed. Design and Construction by Widmer Engineering Co., St. Louis, Mo.

CONSIDER how *perfectly* the asphalt built-up roof that was chosen, meets the *special* requirements of this factory.

Because of its adaptability it was applied to all roof surfaces, steep and flat.

The Carey asphalt saturant and coating used will *never* run in the hottest sun. It will not become brittle and crack in cold weather.

Vibration, expansion or settling of the building is unlikely to open roof cracks, because the roof retains great tensile strength and the better part of its original *elasticity* for periods of ten, twenty or thirty years.

The 30 pound felt has a stretch of more than three per cent, and there is no felt on the market, saturated with *any* kind of bitumen, that better holds its oils, its elasticity and waterproofing qualities through a longer term of years.

There is a Carey specification of asbestos or rag felt *adapted* to every *type* of building. Write for Architects' Specification book.

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BUILT-UP ROOFS

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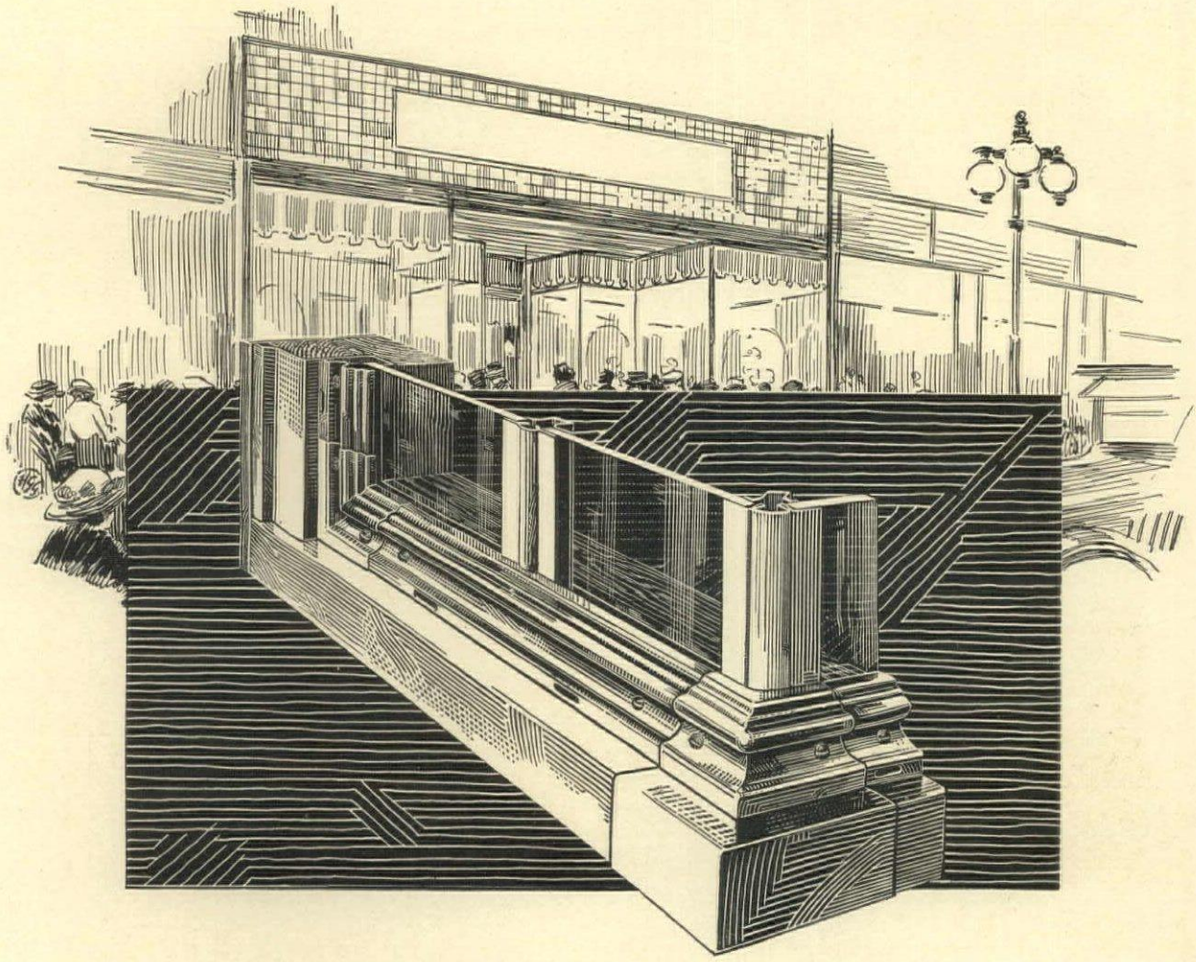

One of the outstanding advantages of Desco Store Front construction is its simplicity of installation. It is so simple to assemble that the work can be done in the shortest possible time without annoying and costly delays by inexperienced workmen.

Installation is simply a matter of assembling units so obvious in their use that the work can be handled speedily and accurately by any mechanic.

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Desco METAL

STORE FRONTS

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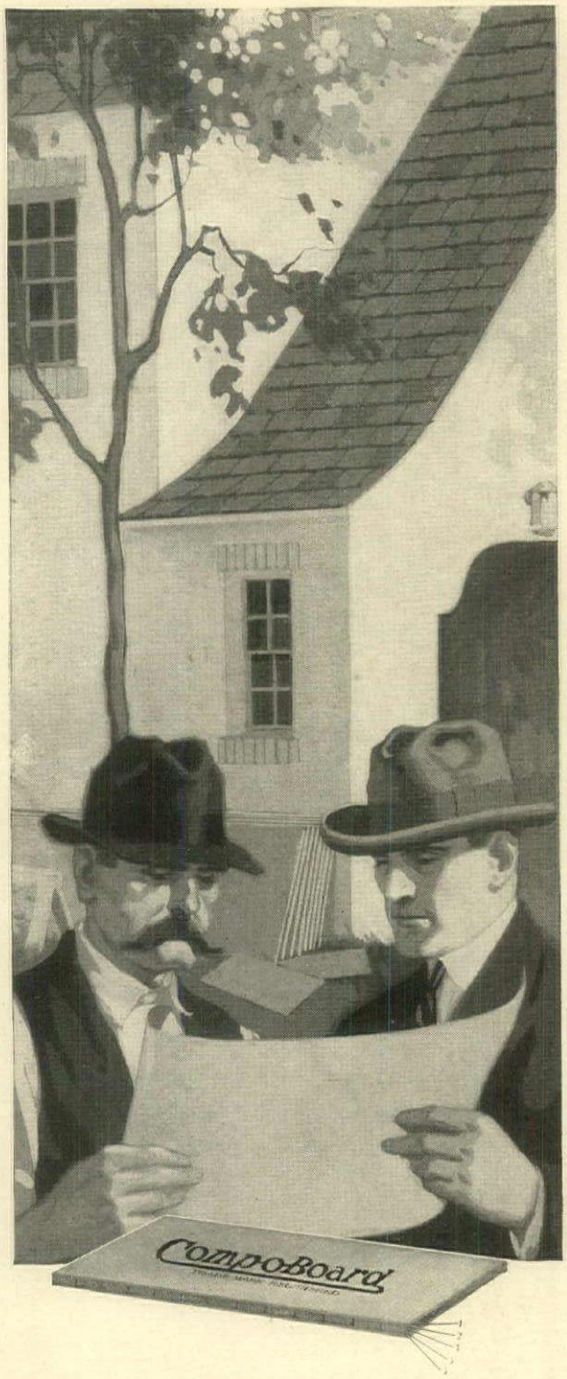

Compo-Board is composed of three parts: The specially prepared covering, Nos. 1 and 5, the wood core, No. 3, the cement, Nos. 2 and 4. Compo-Board will not warp, buckle, shrink or crack. It is moisture-proof. For wall lining, partitions and hundreds of other uses it has no equal. Compo-Board is handled by lumber dealers everywhere.

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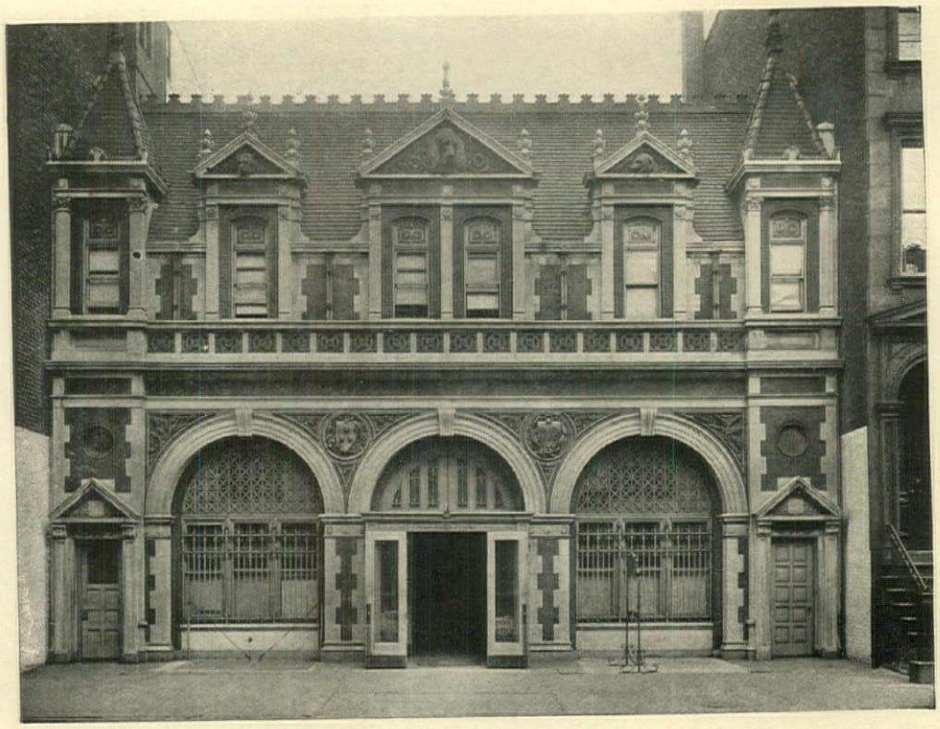

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In this country little was known of Terra Cotta when we revived its manufacture in 1877. No one foresaw its tremendous development and its present day commercial importance.

The Vanderbilt Stable on East 58th Street, New York, is a quaint example of Atlantic Terra Cotta made in 1880. The Terra Cotta is old fashioned red; spandrels, balusters, dogs' head tympanum panels and cresting of Terra Cotta, combined with stone and brick.

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Vanderbilt Stable, (now Clarke Art Rooms), erected in 1880. Richard M. Hunt, Architect.

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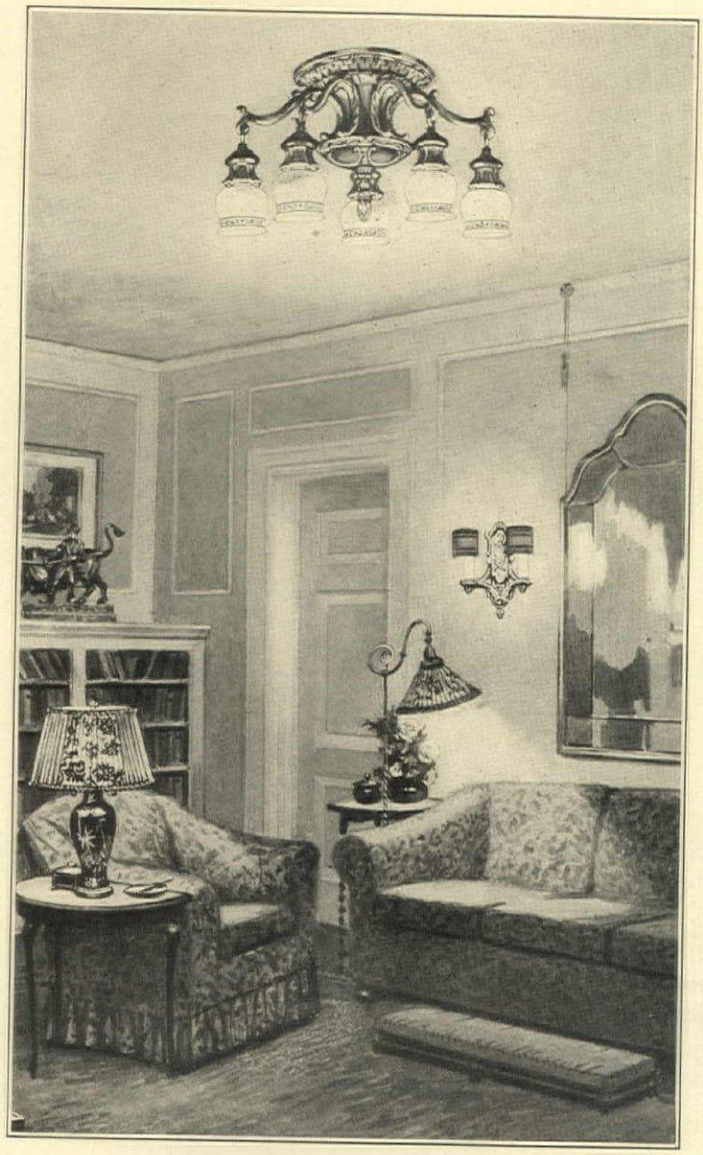

The architect who visits our spacious galleries forms a new idea of the effectiveness of Lightolier in terms of actual performance. Typical of many enthusiastic comments is that of one architect who writes: "I was more than surprised to find such a vast and intelligent assortment of fixtures that so nearly measure to my own ideals." Such expressions of approval have inspired this series of advertisements.

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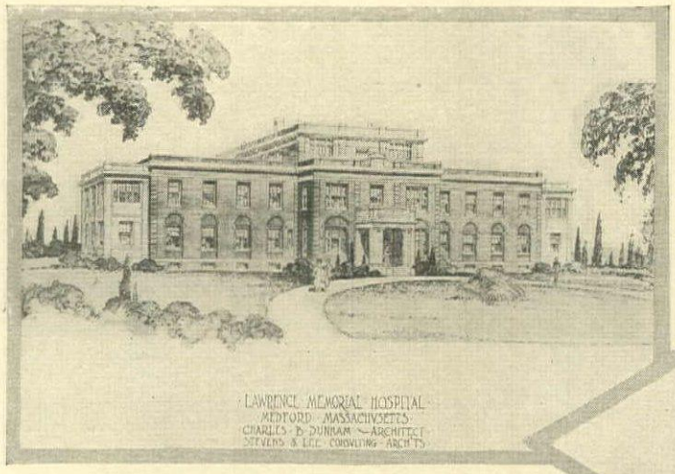

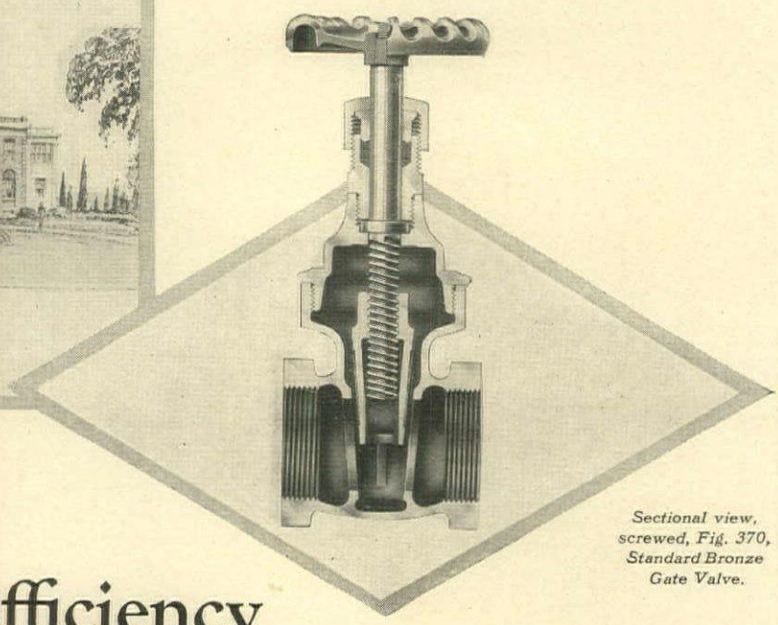

Sectional view, screwed, Fig. 370, Standard Bronze Gate Valve.

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Every item of equipment that adds to a hospital's efficiency is worthy of attention and consideration. Good valves are of the utmost importance.

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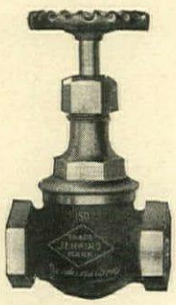
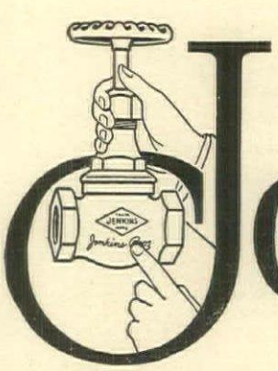


Fig. 106, screwed, Jenkins Standard Bronze Globe Valve.

Fig. 352, screwed, Jenkins Standard Bronze Swing Check Valve.



Always marked with the "Diamond"

Jenkins Valves

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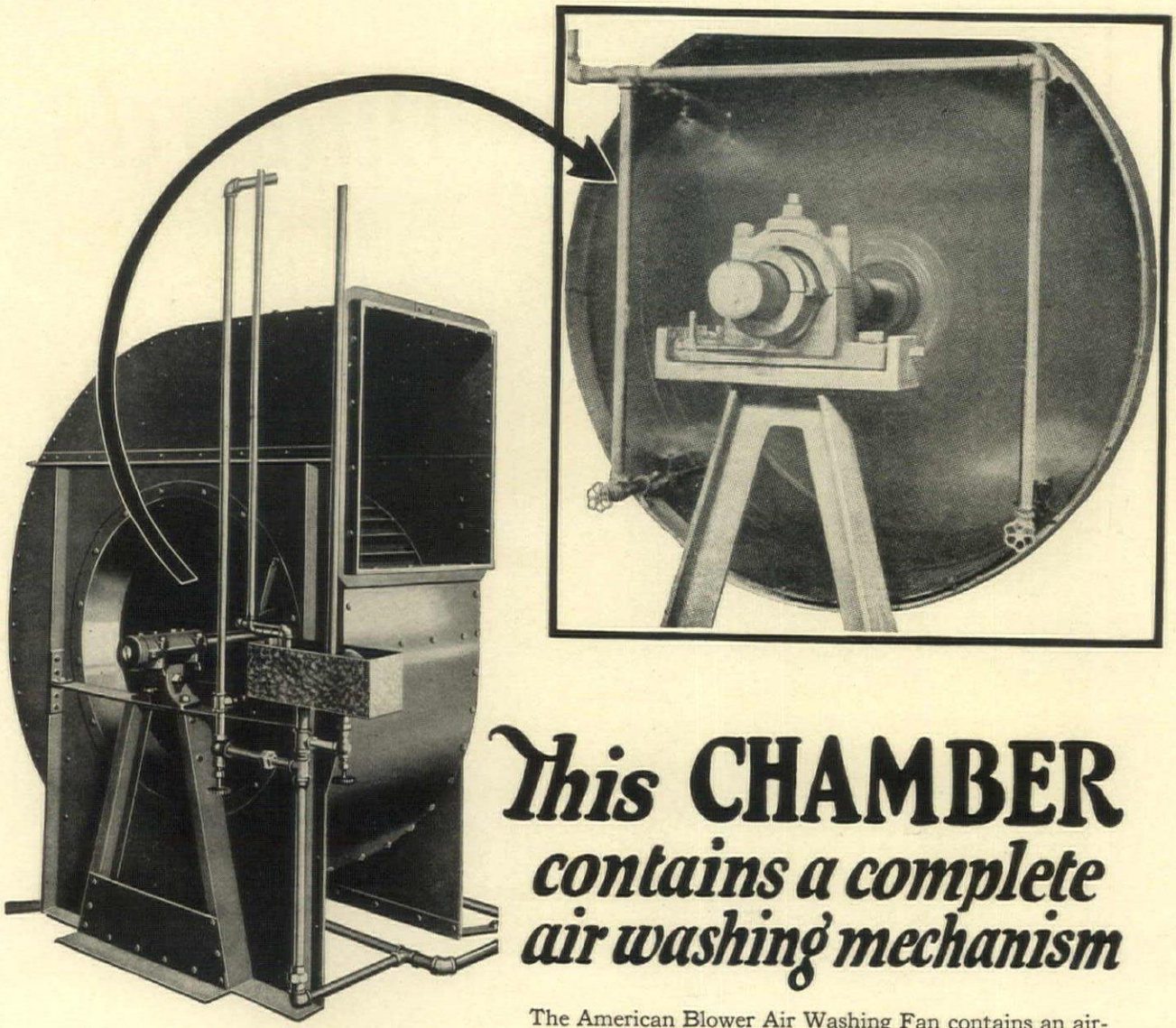

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The American Blower Air Washing Fan contains an air-cleansing mechanism so compact that it is made a part of the fan itself. Its washing efficiency is equal to that of the ordinary type purifier, and it has the additional advantage of not over-humidifying the air. This feature is of importance in such buildings as schools, stores, theaters and similar places where condensation on windows, walls and roof is to be avoided.

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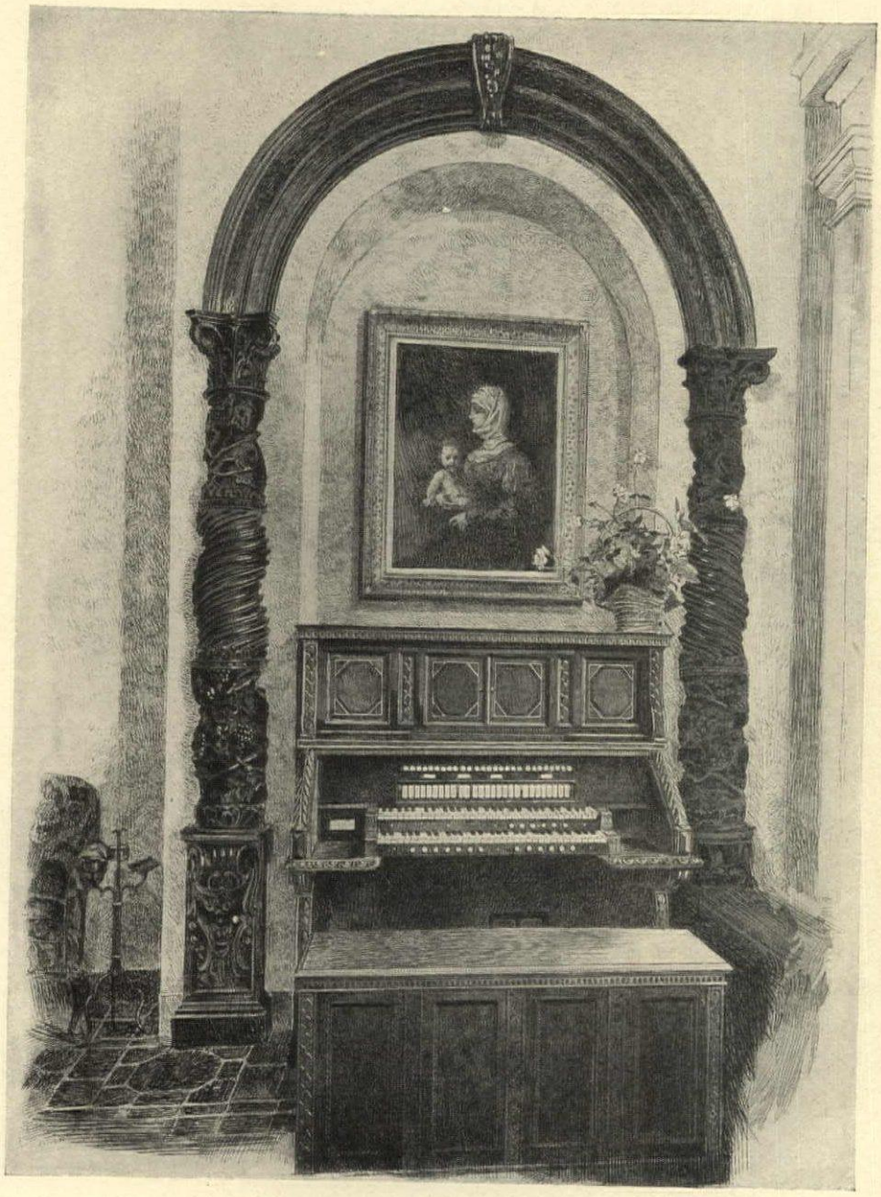
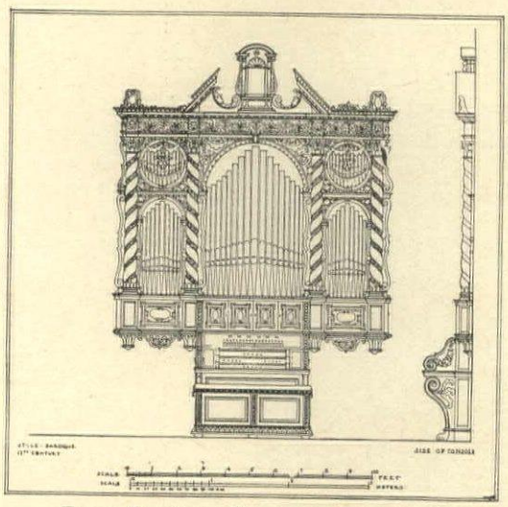


Welte Philharmonic Pipe Organ in a residence in New York City. Playable either manually upon its keyboards or by Recorded Rolls.

The keyboard console shown is partly recessed in the second floor Music Room. The Organ itself is ingeniously placed in a private chamber off the stair landing, with tone outlets through a loosely hung tapestry panel, with additional ornamental wood grilles on either side for further outlet of tone.

THE WELTE PHILHARMONIC PIPE ORGAN gives an absolutely true reproduction of the individual performances of the most distinguished organists of Europe and America.

We shall be glad to furnish full information pertaining to pipe organ installations, particularly as to the utilization of basement space



Front elevation of an organ screen and console of which there are Blue Prints for 20 or more styles and periods available

THE WELTE PHILHARMONIC RESIDENCE PIPE ORGAN

may be heard informally at any time at

THE WELTE-MIGNON STUDIOS

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ALSO OWNERS OF THE WORLD-FAMOUS *ORIGINAL* WELTE-MIGNON

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for Every Floor in the House

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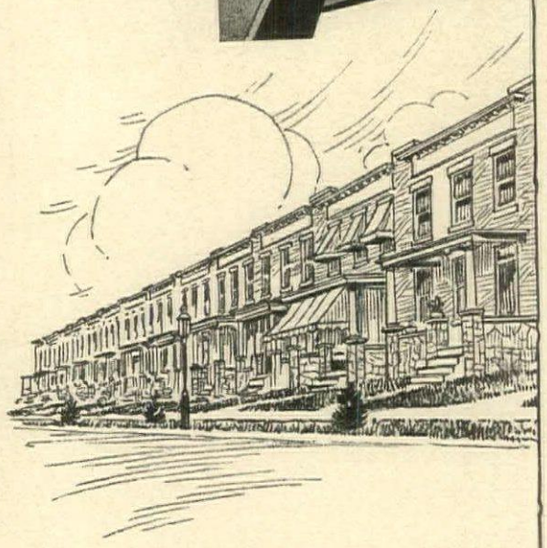


This floor is Armstrong's black and gray inset tile inlaid linoleum (No. T42), with a border of plain black linoleum. It is one of 53 such floors installed by the Frank Novak Company in a recent building operation in Baltimore, Md. Each linoleum floor was cemented to a wood underflooring over a lining of deadening felt.

For Specifications, write for "Armstrong's Linoleum Floors," file-size folder, or see Sweet's Architectural Catalog, pages 498-503, or American Architect Specification Manual.

Why Should the Architect Specify the Kitchen Linoleum?

MODERN practice is to think of the linoleum for the kitchen, pantry, and entry, as the floor itself—a structural part of the house. It is often possible to save considerable floor expense by specifying linoleum to be cemented over felt to an inexpensive underflooring, simply of tongued-and-grooved wood.

When he considers linoleum as the floor itself, the architect can use the linoleum's color and design as a part of his decorative plan. This bordered floor of black and gray inset tile linoleum is but a suggestion of the many interesting and distinctive floors that may be designed in linoleum.

Installing the linoleum when the house is built insures a more serviceable and a better appearing job—no furniture or fixtures to move or fit around, no seams left open to catch dirt and moisture.

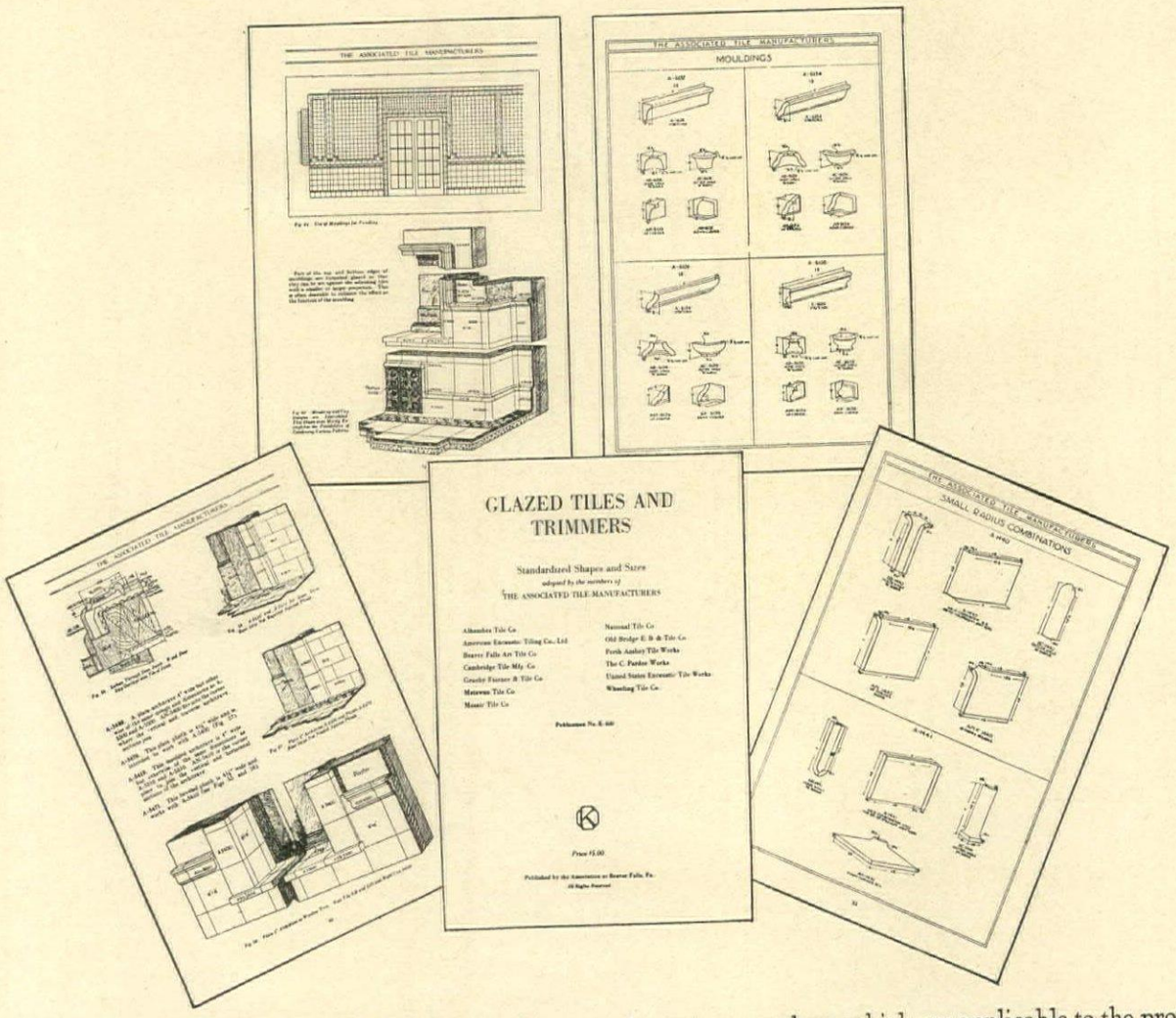
Linoleum is such a practical and handsome floor that it is appreciated by every housewife. Its smooth, seamless surface makes it indispensable where cleanliness and sanitation are so necessary, and its quiet resilience makes it a comfortable floor to work on. These features, combined with its remarkable durability, make linoleum a most economical floor. Your client gets 100% service and appearance in his linoleum floors if they go in when the house is built.

Armstrong Cork Company, *Linoleum Division,* **Lancaster, Pa.**

A-21

Sample Pages

A Handbook on Tiles



"GLAZED TILES AND TRIMMERS," a new handbook on Tiles published by the Associated Tile Manufacturers as Publication No. K-400, is now ready for architects and members of their staffs.

This is the latest of the well known "K" series. It contains the results of years of co-operative work on the part of Tile manufacturers, architects, and Tile contractors.

It will give valuable service in any drafting room, and prove helpful in the preparation of specifications. In the use of this handbook it is possible to specify Tiles by pattern numbers, which are applicable to the product of the various Tile manufacturers.

Each Tile shape is shown in dimensioned detail. The information in the book is complete. Selection is made easy and convenient by means of index sheets. Typical uses of the various shapes are shown in numerous application sketches.

Please send requests for this handbook on your stationery, addressing the Associated Tile Manufacturers, Beaver Falls, Pa.

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Milwaukee Art Institute Building. Remodeled in 1921. Judell & Bogner. Architects.

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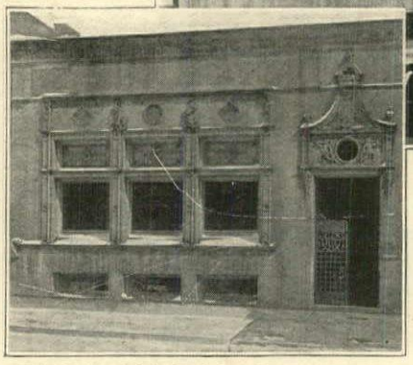

Office Building of the Land, Log & Lumber Co., Milwaukee. Erected in 1902. Ferry & Clas, Architects.

Matching New Stone With Old

The Milwaukee Art Institute Building is an excellent illustration of the possibilities of remodeling and enlarging an old building to meet modern requirements.

After twenty years' service as an office building for a lumber company, the structure was purchased by the Institute and remodeled. Without changing the style of architecture, a story was added, the old cornice moved up and reset over a new fluted frieze to increase its height. The Gray Indiana Limestone in the old building was perfectly matched for the added second story and the entire front cleaned down with bristle brushes, soap powder and water.

The remodeled building shows all of the decorative details of the old front with the added second story in complete harmony.

The builder who selects the Indiana Limestone is afforded an unlimited supply of material, assuring a building for which stone of the same color and quality will be available many years hence, in the event additions to the original structure are required. This is not possible with the product of smaller stone industries.

The Pyramids remain today as permanent evidence that limestone is the world's most enduring building material.

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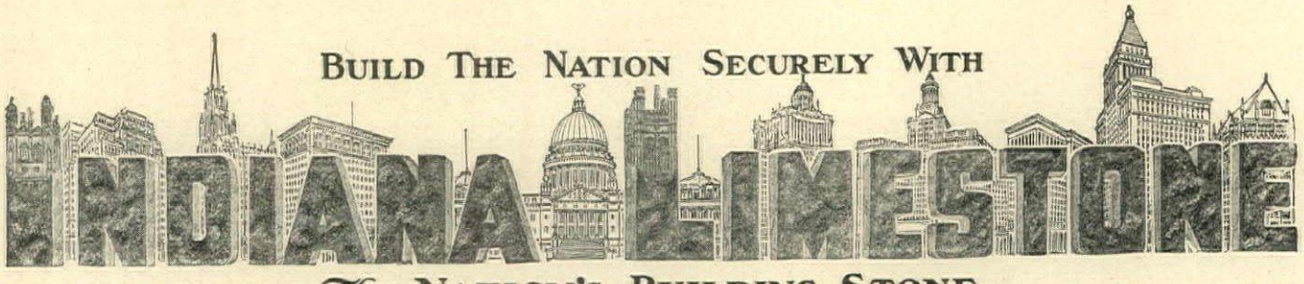

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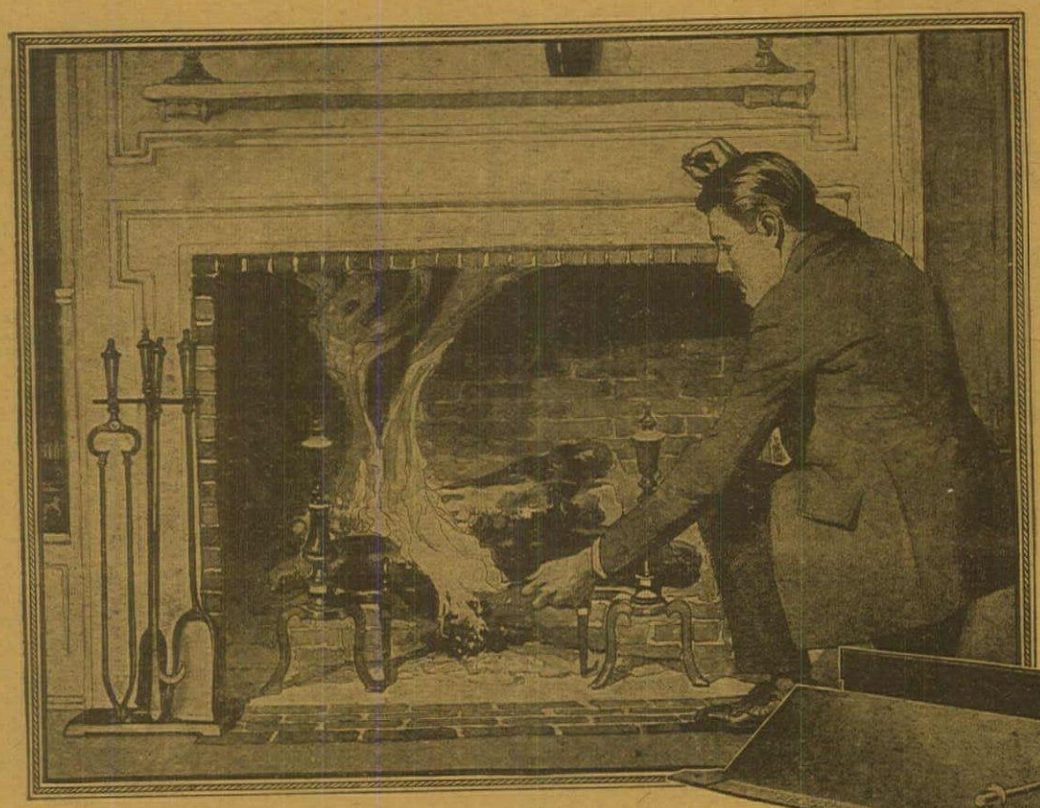


Fireplace with white wood facing. Peerless Dome Damper No. 17 operated from face of fireplace

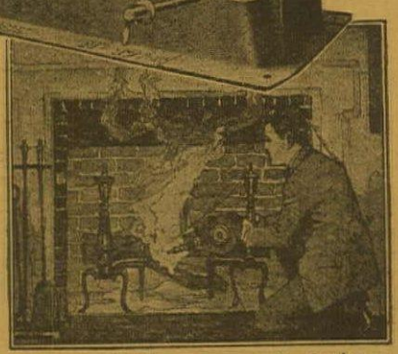
Conditions are different when you start the fire

WHEN you commence kindling the fire the chimney is cold; the draft is falling instead of rising. Cold air is settling and a draft must be created to counteract it.

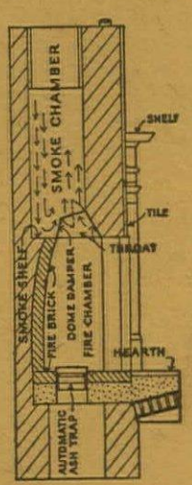
How do you meet these conditions? By battling the smoke and fanning violently at doubtful sparks? Or are your fireplaces equipped with Peerless Dome Dampers?

Peerless Dome Dampers give the proper proportion to the throats, forming a small tapering area at the top of the fireplace that is quickly heated, sending the draft up the chimney with a rush. You simply turn a handle to open wide the damper door so that the smoke box above will become heated quickly. As the fire progresses, new conditions are easily met by the simple adjustment of the Damper.

For sale by building supply and mantel and tile dealers. *Write for complete description and dimension tables.*



Difficulties like this are frequent when fireplace is not equipped with Peerless Dome Damper



See position of damper on smoke shelf. Flange on front acts as lintel

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SPECIAL NOTICE

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912

Of The American Architect-The Architectural Review, published fortnightly at New York, N. Y., for April 1, 1924.

State of New York } ss.
County of New York }

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Fred S. Sly, who, having been duly sworn according to law, deposes and says that he is the Vice-President of the Architectual & Building Press, Inc., publishers of The American Architect-The Architectural Review, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication, for the date shown in the above caption, required by Act of August 24, 1912, embodied in Section 443, Postal Laws and Regulations, to wit:

1. That the names and addresses of the publisher, editors, managing editor and business manager are:

Publisher—The Architectural & Building Press, Inc., 243 West 39th Street, New York, N. Y.

Editors—William H. Crocker, 243 West 39th Street, New York, N. Y.; Arthur T. North, 243 West 39th St., New York.

Managing Editor—William H. Crocker, 243 West 39th Street, New York, N. Y.

Business Manager—Fred S. Sly, 243 West 39th Street, New York, N. Y.

2. That the owners are:

The Architectural & Building Press, Inc., 243 West 39th Street, New York, N. Y.

That the stockholders owning or holding 1 per cent. or more of the total amount of stock of The Architectural & Building Press, Inc., are as follows:

H. M. Swetland, 239 West 39th Street, New York, N. Y.; E. J. Rosencrans, 243 West 39th Street, New York, N. Y.; F. S. Sly, 243 West 39th Street, New York, N. Y.; Ralph Reinhold, 19 East 24th St., New York, N. Y.; H. J. Redfield, 239 West 39th Street, New York, N. Y.; G. E. Sly, 239 West 39th Street, New York, N. Y.; P. A. Robinson, First National Bank Bldg., Chicago, Ill.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent. or more of the total amount of bonds, mortgages, or other securities are: United Publishers Corporation, 243 West 39th Street, New York, N. Y.; Publishers Securities Company, Montclair, N. J.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees hold stock and securities in a capacity other than that of a bona fide owner, and this affiant has no reason to believe that any other person, association, or corporation, has any interest direct or indirect in the said stock, bonds or other securities than as so stated by him.

FRED S. SLY, Vice-President.

Sworn to and subscribed before me this 31st day of March, 1924.

(Seal) H. H. MINER, Notary Public.

New York County No. 196; Register's No. 6001. (My commission expires March 30, 1926.)

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243 West 39th Street, New York

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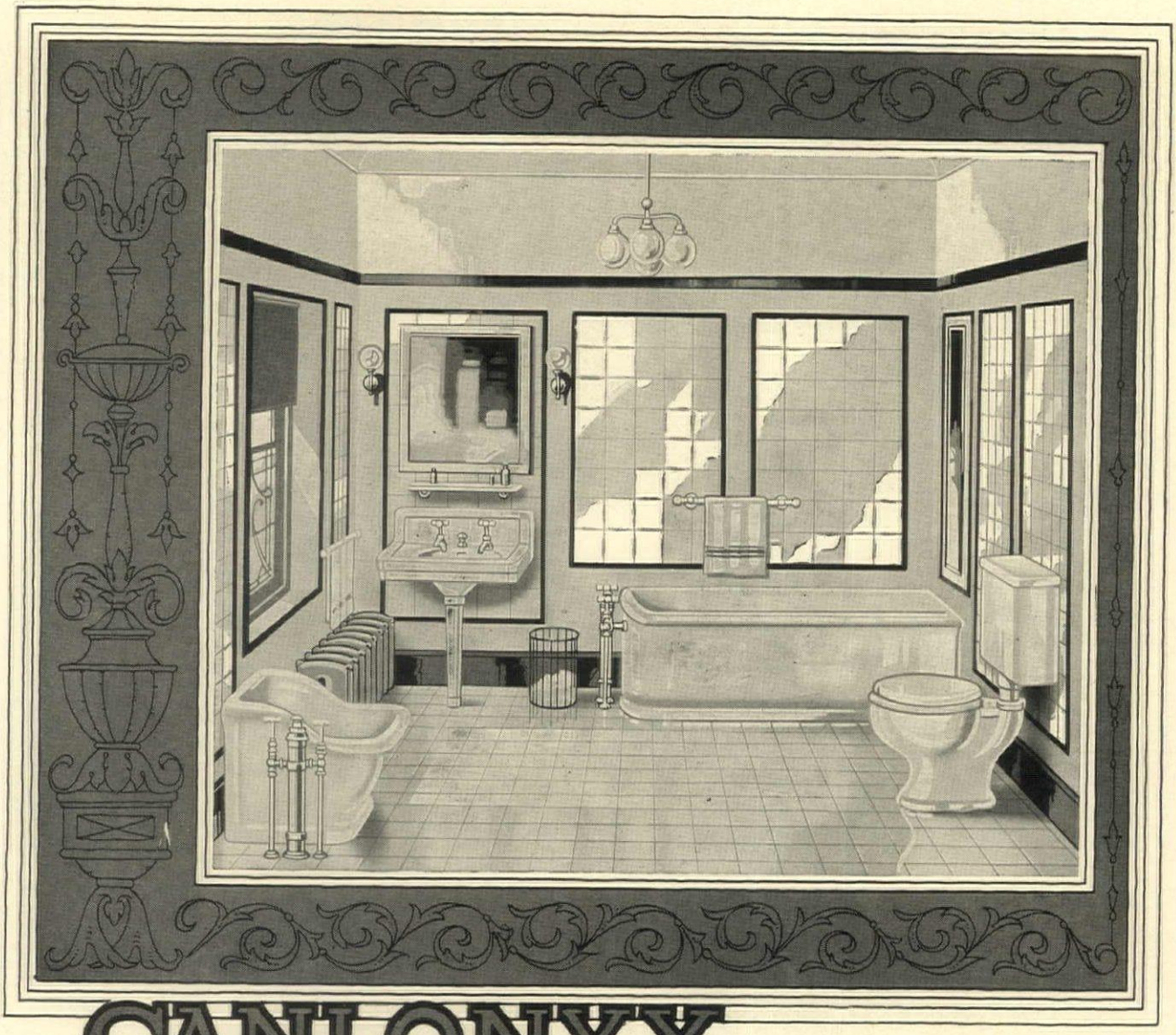

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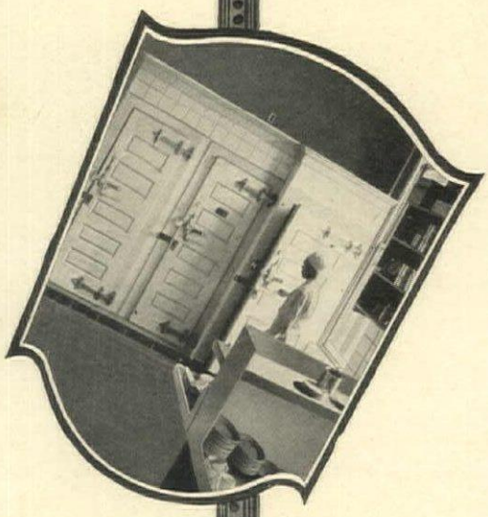
Views of the kitchen in the exclusive Richmond Club, situated at the corner of West Madison and Charles Streets, Baltimore, Md.



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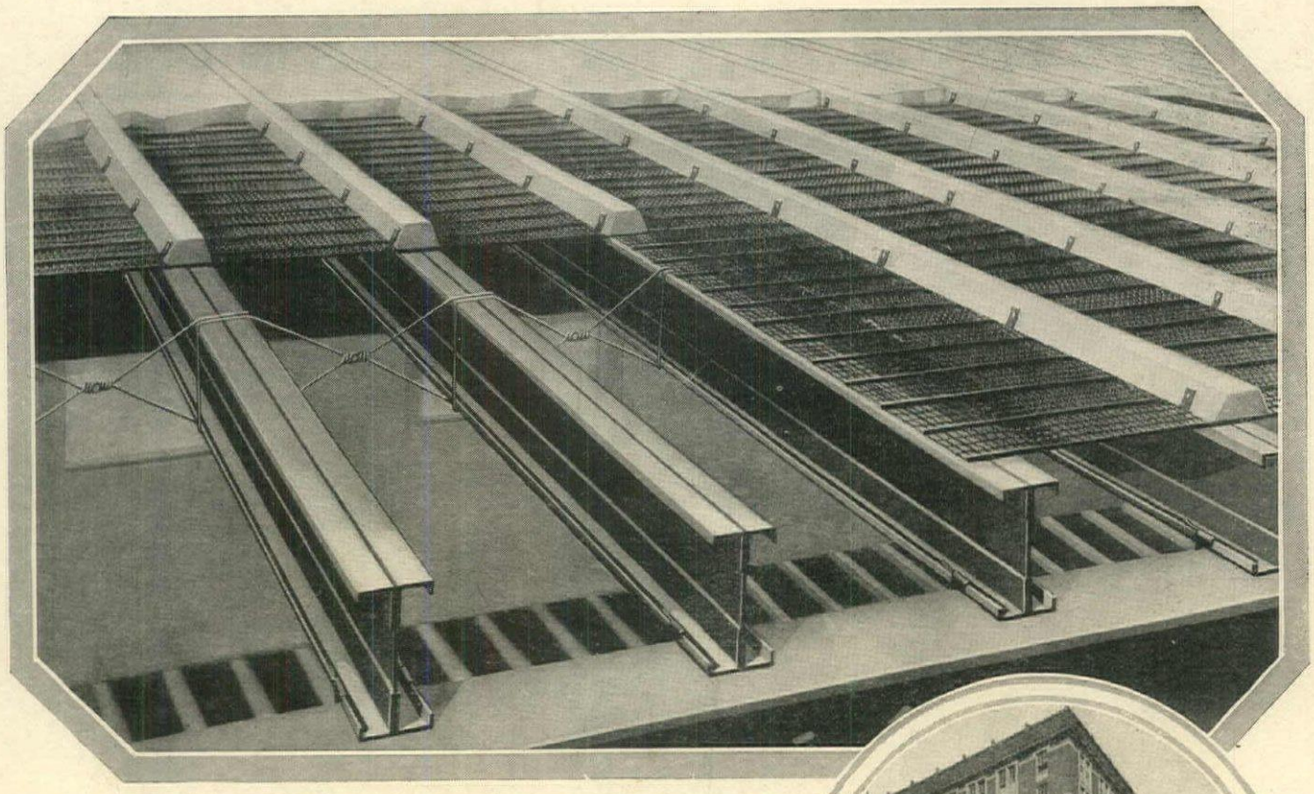

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