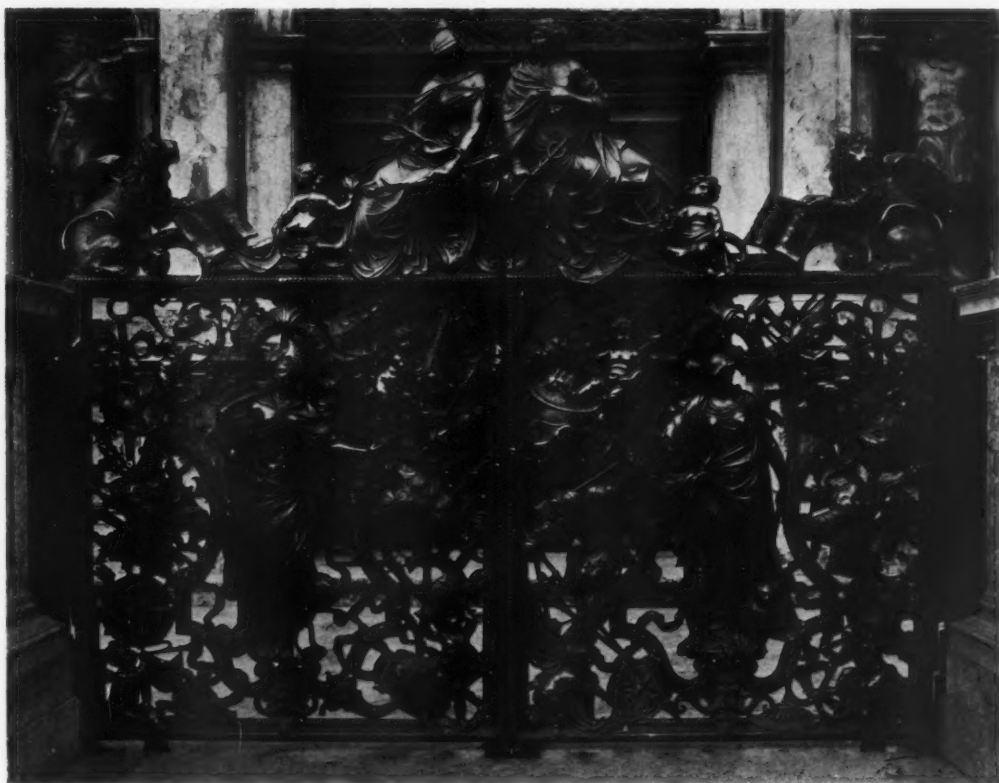


THE AMERICAN ARCHITECT

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BRONZE GATE, VENICE

A SPLENDID EXAMPLE OF POSSIBILITIES OF SURFACE TEXTURE IN METALS

COLOR AND TEXTURE IN THE UNIT AND IN THE MASS—PART I

THE tendency of the architecture of the present age is towards antiquarian curiosity and the adaptation of modern forms. While imitation is but one of many ways of expressing approval, it more often serves the purpose of minds disposed to follow certain well-worn mental grooves, rather than to set out on less frequently traveled paths that may lead to originality and distinction.

Practitioners of the art of architecture do not materially differ in this respect from

their brethren in other fields of art. Easy means of attaining certain results are eagerly sought, while more difficult methods are generally ignored. These habits in practice are undoubtedly due to the influence of a utilitarian age that demands economy, and to a great extent ignores the æsthetic appeal.

Medieval and Renaissance artists took time in order to successfully achieve results and, as time then was not regarded as money in the sense it is now, the things done possessed the great artistic value that caused

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them to become the standards by which we measure the excellence of modern performance in art.

Two essential things in all early forms of art were color and texture. Texture, in this discussion, is used either as a term to distinguish the surface character of a certain material, or the composite aspect, for example, of an entire façade composed of many materials. Color is used in its broad and suggestive sense as indicating the general color effect of large masses.

Whether these effects of texture and color, as they now appear in old buildings, were really present at the time of their completion, or are the effect of time and exposure, does not matter. It is their present aspect that interests us and their value as examples to be used suggestively for present work.

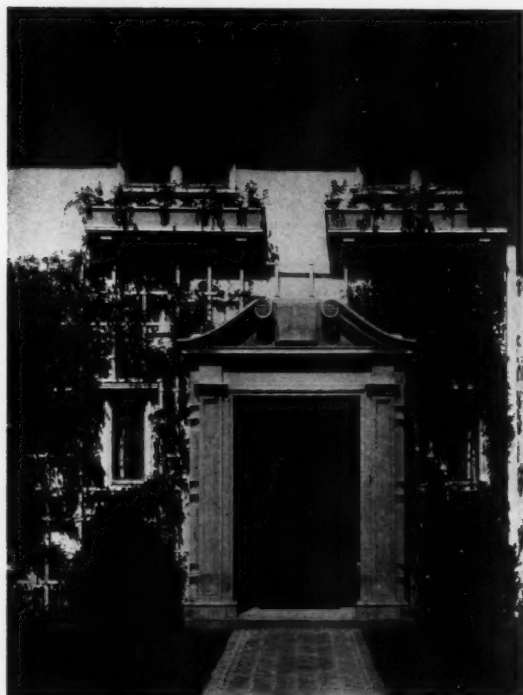
Man may set up any structure, large or small, give its surface the smoothest finish and the brightest gloss, but nature, conceded the truest artist, at once sets about imparting to the surface a texture of its own, resulting in a more artistic appearance. No

material can withstand time and its softening influence. The most brilliant of colors at once become "grayed" on exposure, the densest stone "weathers," and even metals put on a patina that transforms their monotonous surfaces. All those so-called "ravages of time" have their compensations



ENTRANCE DOORWAY, BOSTON ARCHITECTURAL CLUB

Stone at left, brick at right, carved oaken door in center



STUCCO HOUSE, WITH STONE ENTRANCE

Note the shadows and artistic effects produced by stone details, wide eaves, window boxes and trellis

MESSRS. DAVIS, McGRATH & KIESSLING, ARCHITECTS

in fine color and texture and serve as examples for imitation that unfortunately is not always successfully accomplished.

It has been claimed that many pictures by Old Masters of Art, now hanging in important galleries and valued at fabulous prices, were probably when completed but indifferently good in their color as compared with their present state. The integrity of the color used and the masterly excellence of their drawing and composition, with the added and refining influence of long exposure, have produced results that make them valuable as guides to similar efforts at the present time. Texture and color in ancient buildings is the result of similar conditions of time and exposure.

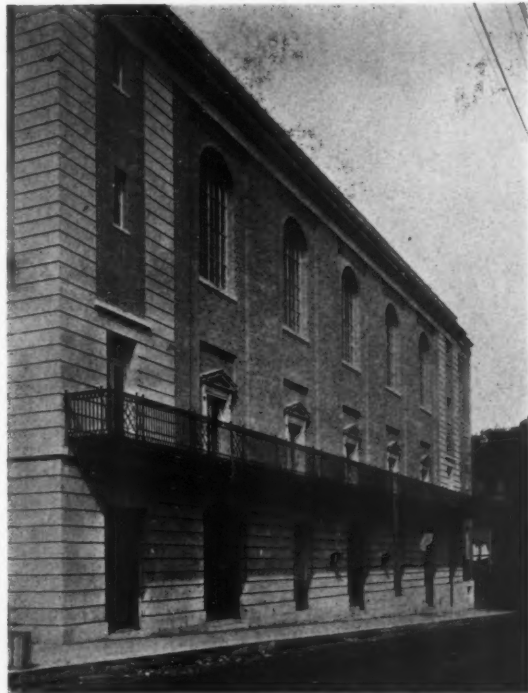
THE AMERICAN ARCHITECT

In its derivative form Texture is the quality of the weave of a fabric. It may be smooth and lustrous as is the shiniest silk or satin, or coarse in fabric as in the earlier tapestries. While in its proper application it really is meant to indicate the construction of a textile fabric, as used in an architectural sense, it has become confined to the surface aspect of materials. Undoubtedly its modern significance is the simulation in materials of such peculiarities or characteristics of surfaces that the action of time imparts. It would not seem to include, as is often observed, the imparting to a frankly used material the physical aspect of another. That this is, unfortunately, done with always inartistic results is very true. For a classical example of this studied dishonesty of effect we have the earliest monuments of India in which an imitation of wood framing and wood texture is preserved in cut stone. For a modern example we have only to refer to that "cast iron period" when buildings were erected of iron, moulded in common forms of cut stone.

Dishonesty in art is of course as reprehensible as in any other pursuit, and it makes

but small difference how gorgeous the robes that cover it, the skeleton of a dishonest purpose will always assert itself.

The modern tendency towards variety of texture in building materials is one that has redeemed the façades of many structures



DETAIL OF AUDITORIUM, PORTLAND, ME.

An artistic intermingling of different materials. The texture of each is well accented. Note the brick panels set in stonework in either end



A GOOD MODERN EXAMPLE OF TEXTURE IN THE MASS

Detail of entrance to house of Thomas Hastings, Esq.
MESSRS. CARRERE & HASTINGS, ARCHITECTS

from monotony that had persisted until it had become wearisome.

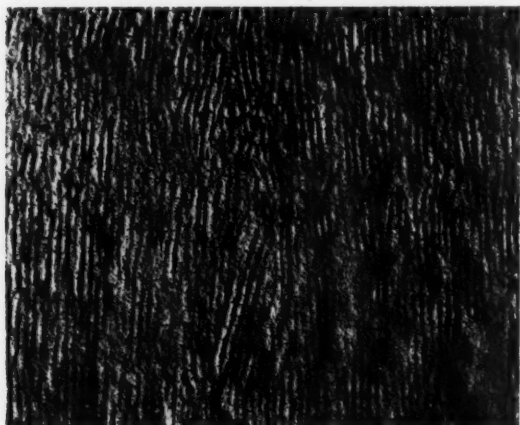
Every architect feels the abhorrence of large plain surfaces. Relief is to be obtained by variety of color or by variety of texture. The dwellers in New York who saunter through what was twenty years ago the most dignified residence section are confronted with long streets lined on both sides with rows of brownstone houses, the texture of whose façades present one wearying monotony. Measures of relief have in many instances been taken in recent years, until now a single block may afford examples employing brick, stone, terra-cotta, stucco and iron in designs that present an artistic appearance in both color and texture.

As these materials are the principal ones

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in use in building façades, it will be interesting and instructive to take up, each in order and by illustration and description show what has been achieved in imparting desirable features of texture and, as far as possible, color.

Of all the many forms of building ma-



AN UNGLAZED "GRANITE" TERRA COTTA, WITH HEAVILY BUSH-HAMMERED SURFACE

terial none have undergone a greater artistic regeneration than brick and architectural terra-cotta. No manufactured materials have an older history, and their survival and increased use is evidence that they fulfill the

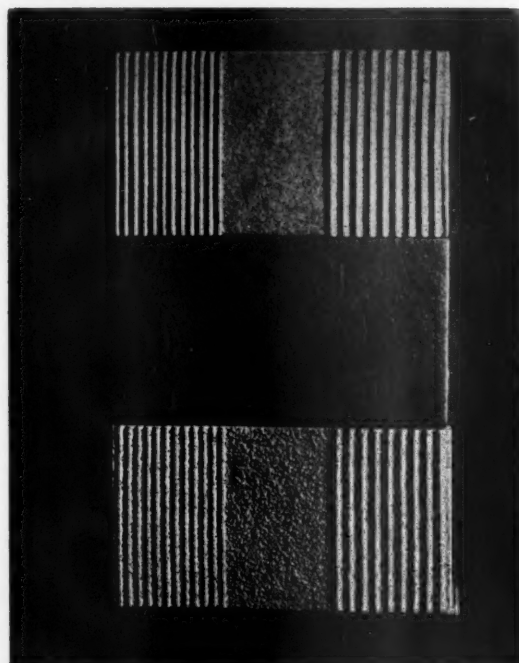


UNGLAZED "GRANITE" TERRA COTTA WITH ORNAMENT SMOOTH AND BACKGROUND LIGHTLY BUSH-HAMMERED

From the terra cotta arch over Chambers Street in the Municipal Building, New York

MESSRS. McKIM, MEAD & WHITE, ARCHITECTS

exactions of a safe material and provide an endless variety for artistic adaptation. What has perhaps contributed more than anything else to the large use in building construction of brick and terra-cotta is the intelligent efforts of manufacturers in the production of color and of surface texture. Even in this age of steel, brick and terra-cotta are largely employed to clothe the skeleton and give beauty to what would otherwise be but a gaunt structure. Texture, color, the artistic use of colored mortars for jointing and the variously formed joints, have enabled archi-



ILLUSTRATING THE STANDARD OR REGULAR SURFACES OF UNGLAZED ARCHITECTURAL TERRA COTTA

The usual unglazed colors are gray, buff, red and the "granite" mixtures. The lower sample illustrates 6 and 8-cut tooling, and smooth in the Vitro-tex or sanded finish. The middle sample shows ordinary smooth finish, and the top shows the smooth finish, tooled

itects to design and build structures that have been a long step in the movement towards a more lavish use of color and texture on the façades of brick buildings. While for many years it has been possible to obtain brick in colors, it was the introduction of rough textured brick that gave the "touch" to a brick wall that made it so artistically satisfactory.

The revival of brick with rough or broken texture and multi-colored effects, after years

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of disuse, is but another of the many instances of the wave-like rise and fall of artistic methods.

In Italy, during the Middle Ages, there was a brick and terra-cotta architecture that marked the highest and most artistic form of use of burnt clay. Every student of architecture is familiar with the brick buildings that existed in Persia, while in France, England, Holland and Germany brick and terra-cotta in many colors and varied sizes and texture have existed for centuries. In the face of these and many other examples that could be instanced, texture in brick dur-



POLYCHROME TERRA COTTA

Showing matt glazed ivory, green and blue, and an unglazed silver grey, applied thickly,—almost clotted,—so that the texture is unusual

ing the eighteenth and far into the nineteenth century was in this country seemingly a lost art.

Large expanses of brick walls, their monotonous surfaces unbroken except by openings, are in evidence to-day as a record of that period. Slowly these conditions are giving place and in their stead we have walls of brick of good texture and color and laid with mortar joints to form artistic contrasts with the bricks they bind.

One of the easiest means of producing effects of light and shadow is to suggest texture either in the unit or in the mass. To combine texture in both the unit and the



PORTION OF A NEW YORK CITY BLOCK

Adjoining houses presenting different effects of texture. An unusual and desirable effect in city streets

mass is to achieve the highest results, for whether the building is viewed at a distance or close by, the texture, if skillfully handled, will create or suggest a highly artistic result.

The tendency of architects to employ polychrome brick and terra-cotta to a greater extent than formerly is adding an interest to our architecture that can be imparted in no other way.



A STREET BRIDGE, WASHINGTON, D. C.

An harmonious commingling of stone, stucco and terra cotta. Each material is frankly expressed in texture

MESSRS. GLEN BROWN AND BEDFORD BROWN, ARCHITECTS

INSPECTORS' FIELD INSTRUCTIONS FOR SAFEGUARDING CONCRETE CONSTRUCTION IN THE FIELD

By ELWYN E. SEELYE

UNLIKE any other structural material, reinforced concrete is manufactured in the field, and to this fact is due the somewhat uncertain results which are sometimes obtained. With proper precautions taken in the execution the writer does not hesitate to state that it is as reliable as structural steel.

As it is more economical and suitable than fireproofed steel in certain classes of construction, every architect and builder should be equipped with a knowledge of how to conduct reinforced concrete operations in a safe manner.

First, the design should be correct. The flexural, shearing, direct, temperature and shrinkage stresses should all be analyzed and provided for by a properly qualified engineer. With design we are not concerned at this time. Assuming a correct design as a basis, the practical man may proceed to construct with confidence if he will follow the directions laid down in this article.

First and most important is the cement, which should be Portland, manufactured preferably by a well known company. Cement should be tested as follows: From each shipment, after it has arrived at the site, take one sample of a quantity of about two quarts, made up by taking a small handful from every tenth bag. Ship this to a cement testing laboratory and request a chemical and physical test according to the Am. Soc. C. E. standard tests. The laboratory report will call attention to any deviations from the standard requirements.

Slow setting or too rapid setting of concrete are faults often met with in the field. The causes are often obscure, but too little lime will cause slow setting. Or the proportion of silica to iron and alumina if too high will cause too slow a set.

A rapid set is objectionable because the time for placing same may be too short and the coefficient of shrinkage is apt to be too high, causing cracks.

Cement may not set up properly because it has become partially hydrated. Consequently cement should be tested *after* arrival on the site and shortly before

using and should always be stored in a waterproof shed.

Another cause of slow setting and a serious one is the occurrence of organic matter in the sand.

Sand should approximate a clean quartz and it should not contain more than 7 per cent loam. The percentage of loam may be determined by shaking the sand in a milk bottle, pouring off the wash into another bottle and allowing same to settle. The relative heights of sand and loam may then be scaled off and the relative amounts determined.

The occurrence of mica in sand is objectionable as it is liable to cause disintegration. The occurrence of pyrites is objectionable because of possible chemical action. If sand is very fine, it is to be looked on with suspicion because it is liable to lead to disintegration. Sand formed by breaking up soft rock is to be avoided.

Broken stone should be of a clean hard rock, preferably trap. The occurrence of mica or pyrites renders stone objectionable.

Gravel should be of a clean quartz or hard waterworn pebble.

Broken blast furnace slag should be looked upon with suspicion because of its high porosity, possible chemical reaction, and because the modulus of elasticity of slag concrete will vary from the constant assumed by the designer.

The maximum size of stone for reinforced concrete requiring a distribution around the steel should pass a $\frac{3}{4}$ inch sieve. The material is preferably graded from a small to a large size. A well graded aggregate produces a denser, more waterproof and stronger concrete than one in which the aggregate is of uniform size.

Aggregates should be free from loam as the latter is injurious to concrete. They should be free from sand to simplify the process of proportioning.

The specifications generally call for a ratio of one part cement, two parts sand and four parts stone or gravel by volume for reinforced concrete. A better method is to measure the voids in the stone or gravel

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and provide enough sand to fill the interstices. In the same way measure the voids of the sand and provide enough cement to fill them.

A simple method of determining the volume of voids is to take a cubic foot of stone or sand and soak it. Then drain same. Place the cubic foot of damp material in a watertight receptacle, and weigh the water which it takes to fill the voids. Divide the weight of water by the constant 62.5 and the volume of filling necessary will be obtained.

The water should be clean and fresh and in sufficient quantity to make what is well named a "quaking" mixture.

The mixer should be what is known as a "batch" mixer. It generally consists of a drum in which the ingredients are placed and rotated. The process is assisted by curved guides and should be continued for at least one minute, and always until the mixing becomes homogeneous, and until the particles of sand are covered with cement and the stone or gravel are well coated with mortar.

A practical method should be adopted to insure that the correct proportions shall at all times go into the concrete. Here lies a danger. A standard batch mixer will hold two bags of cement, four cubic feet of sand and eight cubic feet of stone or gravel.

Both bags of cement should be introduced at one time, as if introduced alternately, one may be forgotten. Cement bags should be well shaken out. Often the cement and sand is measured by bringing up barrows of material, and depending upon the number of these to measure the amount of the coarse and fine aggregate in each batch. This is a very loose method, and the author prefers two hoppers, which are filled, one with sand and the other with stone.

The storage bins must be entirely closed off before the aggregate is admitted to the mixer, otherwise more than the allowable aggregate will find its way into the batch, especially if the contractor has a tendency to economize on cement. Many other methods of proportioning are in vogue, and the inspector must use judgment in approving a method.

A common cause of accident is the use of improperly designed forms. The dead weight of concrete should be calculated,

and all compression should be proportioned accordingly. The unsupported height of such struts should be taken into consideration, and where this is excessive, bracing at the middle or third points should be resorted to. The caps and joists should bear directly on top of the vertical members, and in no case should heavy loads be carried by spiking.

The lateral pressures due to the hydraulic qualities and wedging action of spading should be duly taken care of by means of wire ties and bracing. This is especially great in deep girders and in columns. Columns should be poured slowly for this reason.

Forms should be constructed to remain tight as a loss of the finer particles is injurious to the concrete and tends to produce voids. If forms deflect, the finished work is unsightly.

In the case of the first tier where the uprights rest on soil, there is grave danger of settlement due to the load applied and the gradual softening of the ground. If this settlement occurs after the initial set, serious cracks will occur. To obviate this, mudsills should be placed under all uprights and opposed wedges placed between the uprights and the struts. The forms should be carefully watched with a level and any points indicating settlement should be wedged up. This wedging should not be carried on after the concrete has obtained its initial set.

The interior surfaces of the forms should be oiled to obviate swelling and warping.

On the exterior of a concrete structure and elsewhere where it is desired to have a finished surface free from marks and imperfections, it will be essential to expose the surfaces for the finishing mason while the concrete is still friable. For this purpose the forms should be so constructed that they may be removed without disturbing the main supporting members.

The concrete elevating tower and its guys should be free from the structure so as not to cause vibration, during the process of setting.

It should be borne in mind that the failure of any portion of the forms will cause impact on the floor below and may result in a serious accident.

Before allowing concrete to be placed it

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is highly important for the inspector to assure himself that the beam and column forms are according to the sizes shown on plans. Plumb all column forms. An interior column should not be more than $\frac{1}{2}$ inch out of plumb and face columns where sash is to be placed should be plumbed and spaced with the utmost accuracy.

The sizes of beam and girder forms should be checked up with that shown on the plans.

The sizes of steel should be carefully checked with especial attention being paid to the effective depth of the beam, *i.e.*, the distance from the top surface of the concrete to the center of gravity of the reinforcing steel. The beam steel should be wedged up with concrete blocks cast for the purpose or suspended upon stirrups so that the requisite space will be maintained under the bars for the concrete soffit protection. Bars should be carefully separated so that no voids will occur between the bars and so that the bond will be developed.

All stirrups and bars should be accurately spaced and wired to insure against displacement during the concreting operation. The main beam reinforcement should extend well on to the column or wall bearing. Indeed, it is advisable for this reinforcement to lap or be spliced with dowels as the shrinkage stresses before the beam is stripped may cause a crack in the underside of the beam at the column.

It should be borne in mind that the compression area of a beam or girder extends well into the slab, and consequently openings should never be permitted adjacent to both sides of a girder or beam and on one side only where called for on the plans.

Great pains should be taken to see that the reinforcing steel in footings is placed in the right surface. A cantilever footing requires reinforcement in the bottom while a combined footing requires it in the top.

It is reported that on one job after a floor was poured, an extra beam frame was left over and it was discovered that the beam where this was to have gone was poured without it.

All column forms should be provided with a slide door at the base for the purpose of removing shavings. This should be kept open until the barrow of concrete is standing over it ready for pouring.

Particular care should be taken to see that the footing is free from loam as in another instance it is reported that a six-story building column was found to be supported on the steel bars because an inch of loam covered the column footing when it was poured.

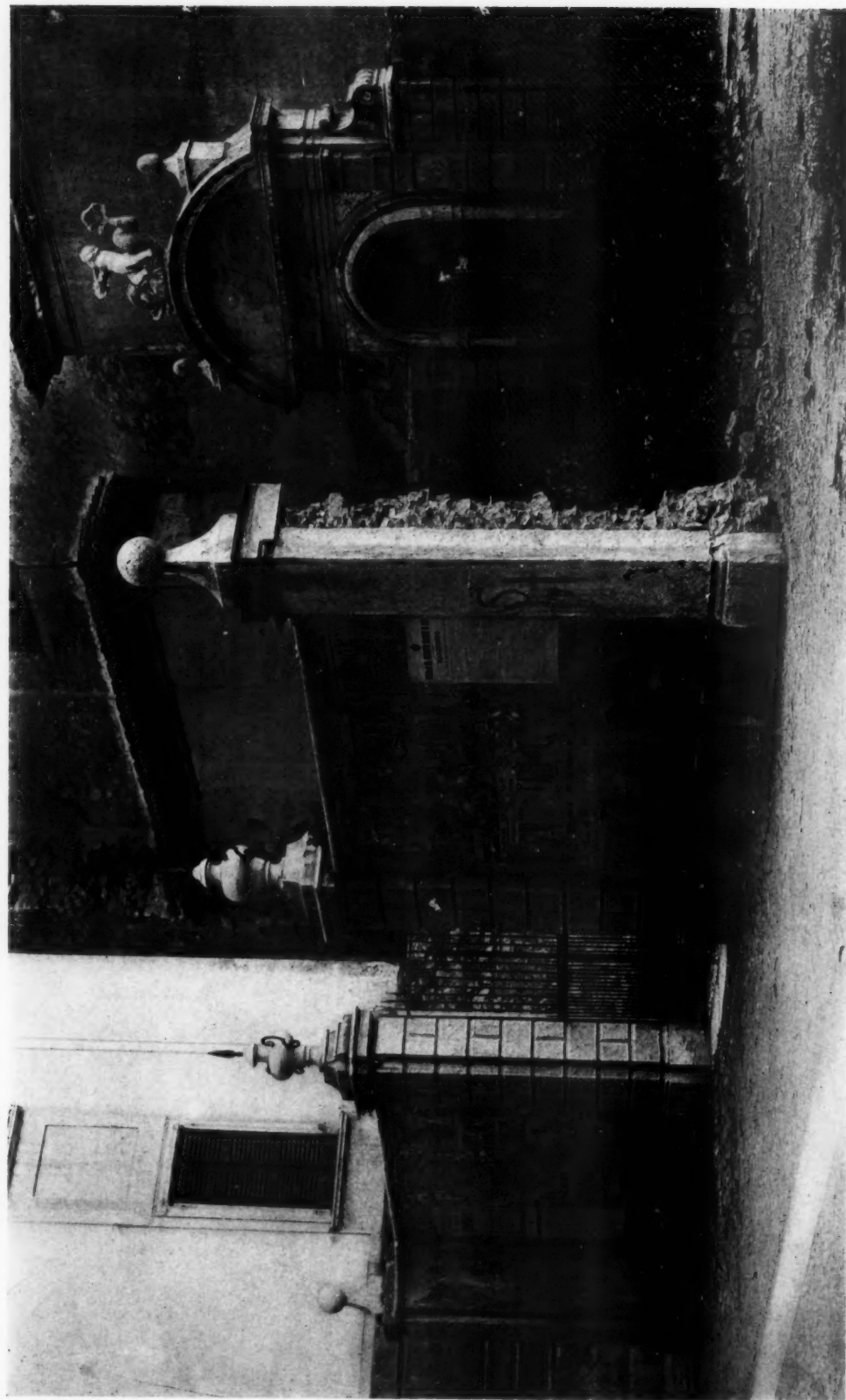
(Continued on page 323)

NORTHERN ITALIAN DETAILS

No. 66—GATEWAY TO GARDEN, BRESCIA

THE garden illustrated in this week's issue is so unique in size and position that one can only hazard a guess as to its *raison d'être*. In the first place only three sides of the garden wall are standing, the fourth being probably a part of some contiguous structure that has since been destroyed. Unfortunately for the seclusion of the garden, but happily for the interest of the passing tourist, the whole of the garden is thus displayed to view from the street. Again, the size of the garden is peculiarly small for the amount of care that was evidently displayed upon its details. It can scarcely be more than twenty-five feet square. It is completely isolated on all four sides by public property although it is safe to guess that this was not always so, and that it probably had an original juncture with some adjoining building.

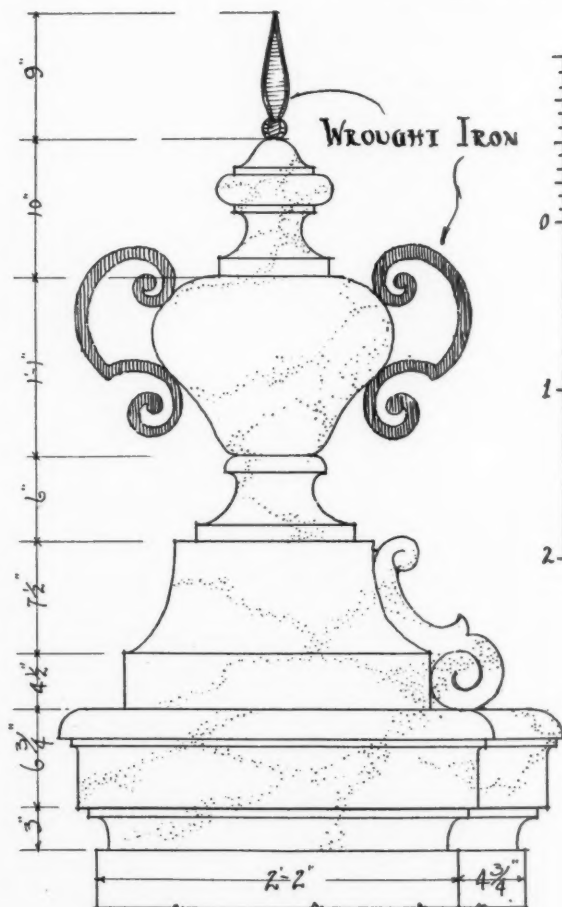
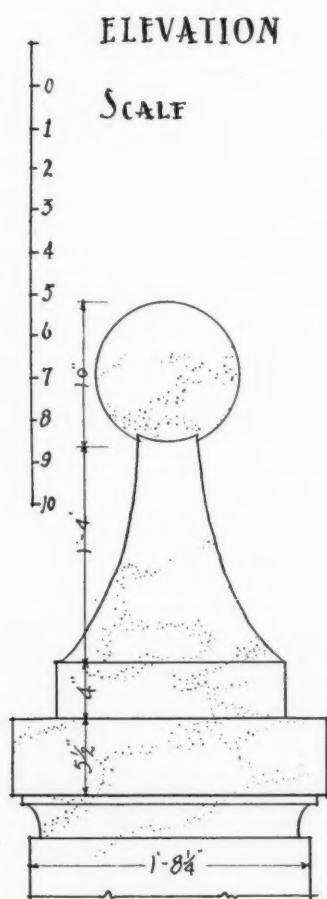
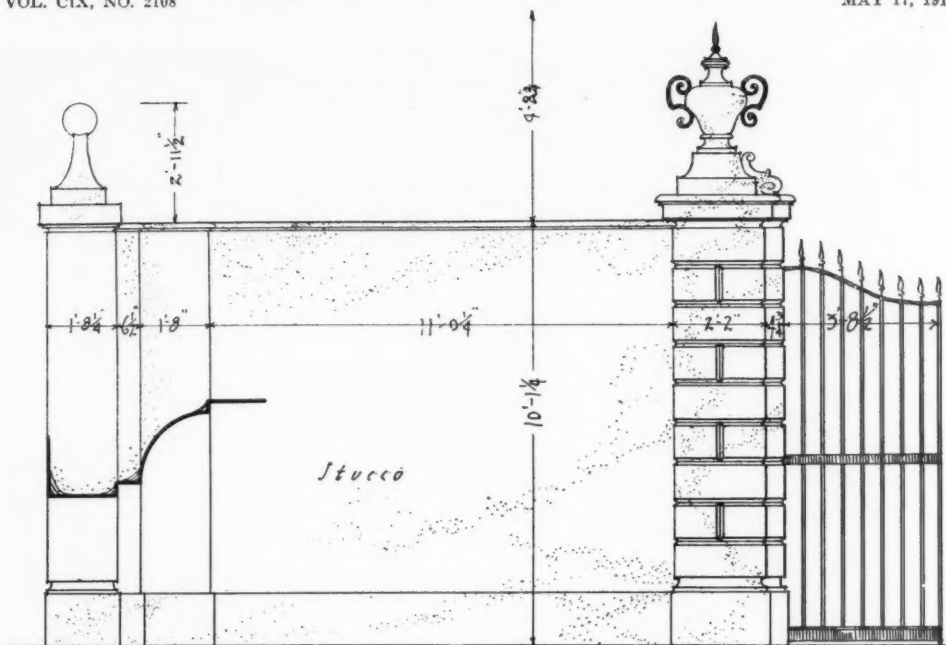
The architectural features of the garden are an excellent front wall with gate posts and an elaborate niche on the axis built into the rear wall. It is a delightful sixteenth century design with a free and playful sense of forms and with most happy employment of sculpture. It is of one part with the Roman villa architecture whose elaborate gardens and accessories were practically all built between the years 1550-1600—no finer tribute could be adduced to this little Brescian gem.



GATEWAY TO GARDEN, BRESCIA

PHOTOGRAPH AND DRAWINGS
BY W. G. THOMAS AND J. T. FALLON

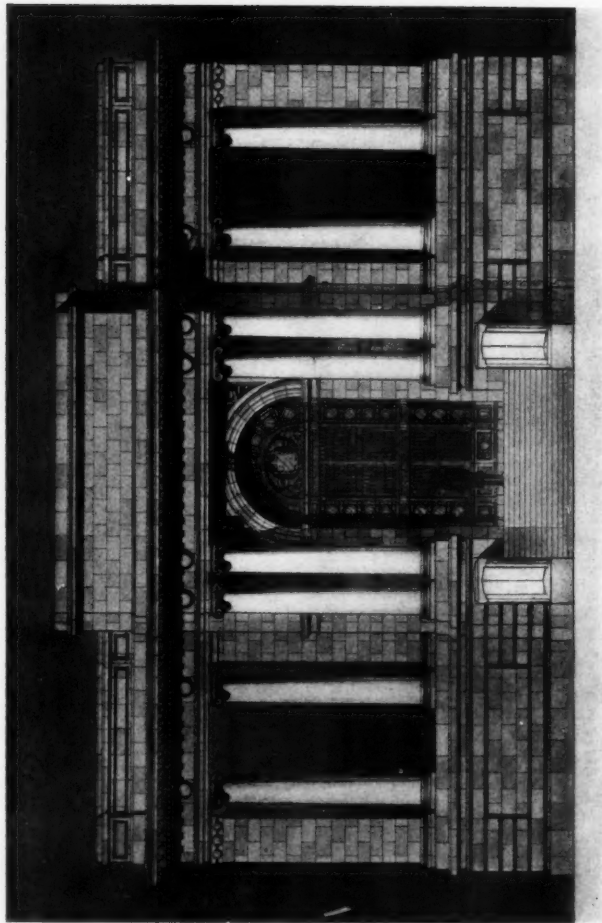
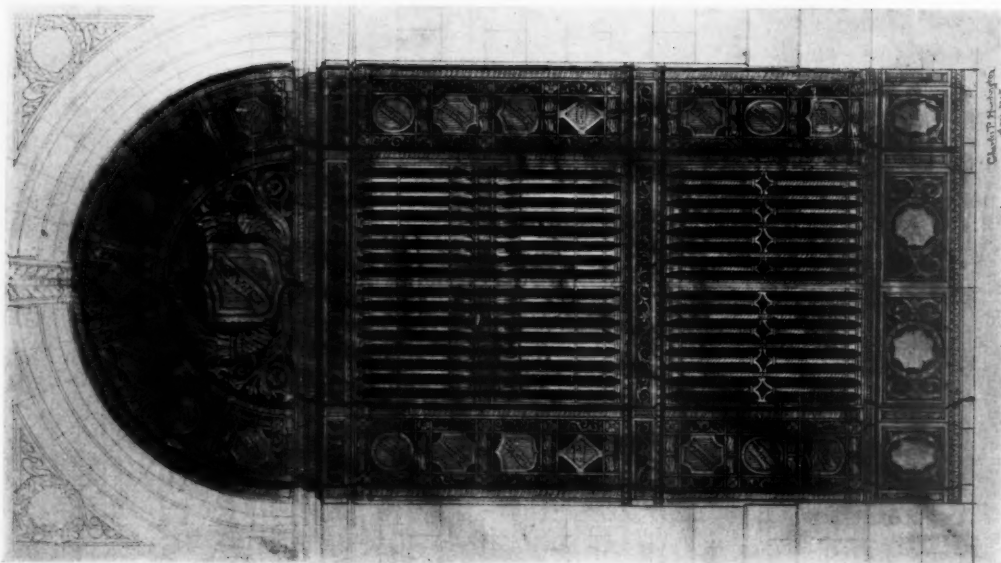
ARCHITECTURAL DETAILS
OF NORTHERN ITALY—PLATE NO. 133



GATEWAY TO GARDEN, BRESCIA

PHOTOGRAPH AND DRAWINGS
BY W. G. THOMAS AND J. T. FALLON

ARCHITECTURAL DETAILS
OF NORTHERN ITALY—PLATE NO. 134



WESTERLY ENTRANCE GATES

BUILDING OF HISPANIC SOCIETY OF AMERICA,
BROADWAY AND 155TH STREET, NEW YORK

MR. CHARLES P. HUNTINGTON, ARCHITECT

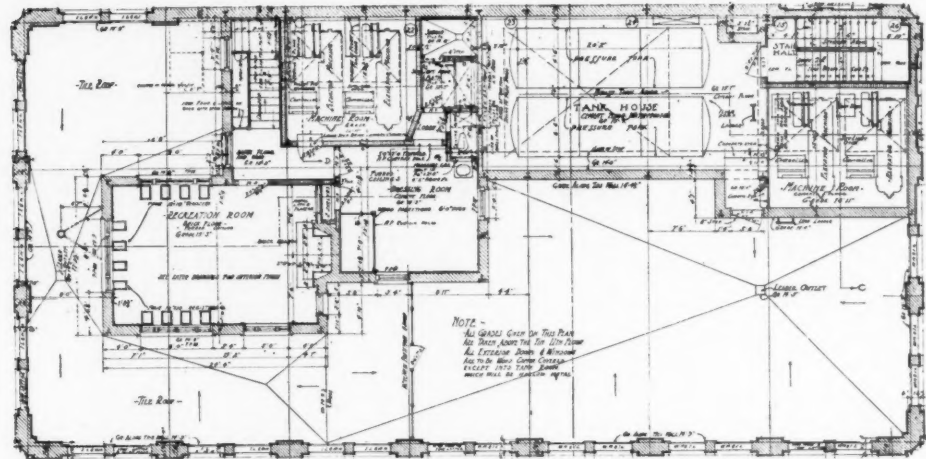
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This entrance is to be erected to commemorate the tercentenary anniversary of the death of Cervantes and is to be built of limestone and granite while the bronze grille (25 ft. high by 12 ft. wide) in the centre arch will represent in its motives, as indicated in the middle and bordering shields, Spain and the Spanish-speaking countries. The height of the main part of this entrance is 50 ft.

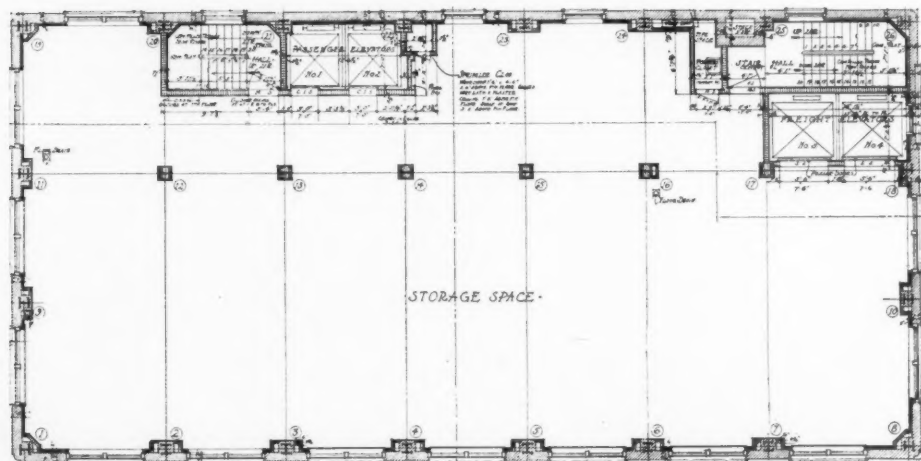


DRY GOODS WAREHOUSE, BURTON BROS. & CO., FIFTH AVENUE, NEW YORK

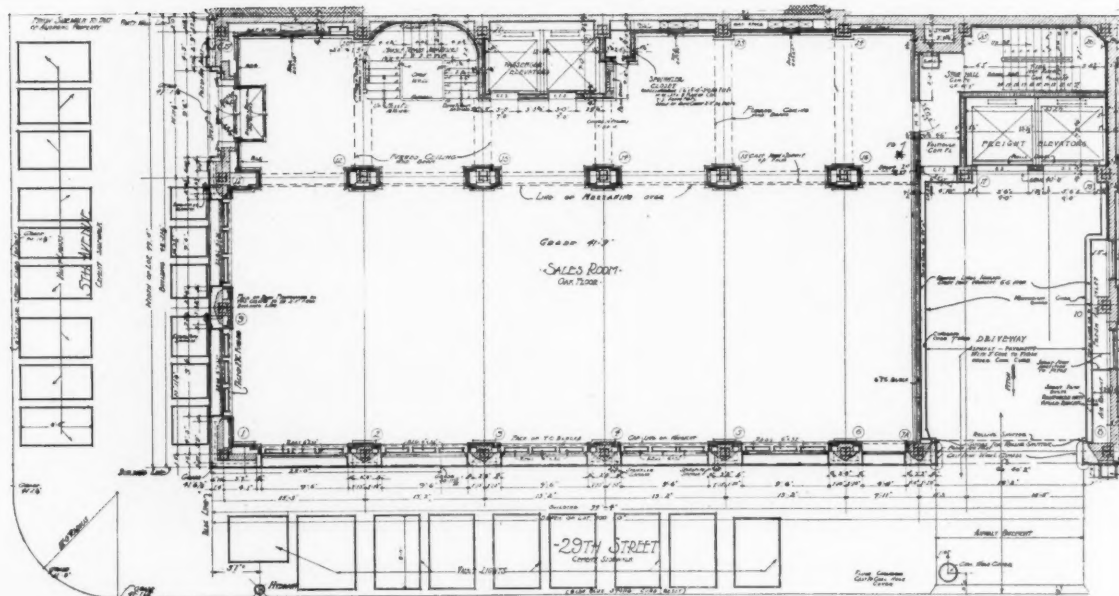
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ROOF PLAN



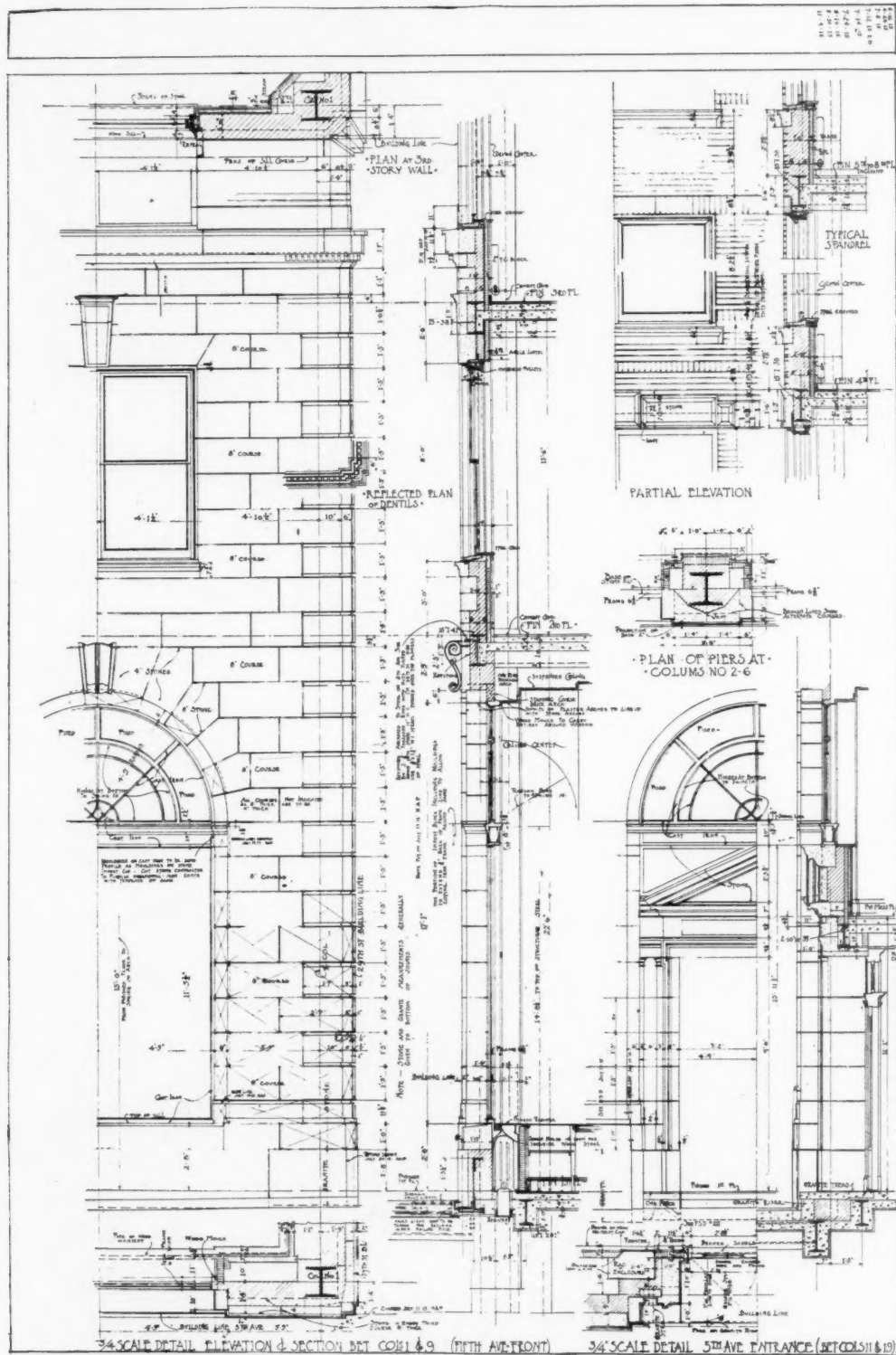
TYPICAL FLOOR PLAN



GROUND FLOOR

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REST ROOM



TYPICAL SALES FLOOR

DRY GOODS WAREHOUSE, BURTON BROS. & CO., FIFTH AVENUE, NEW YORK

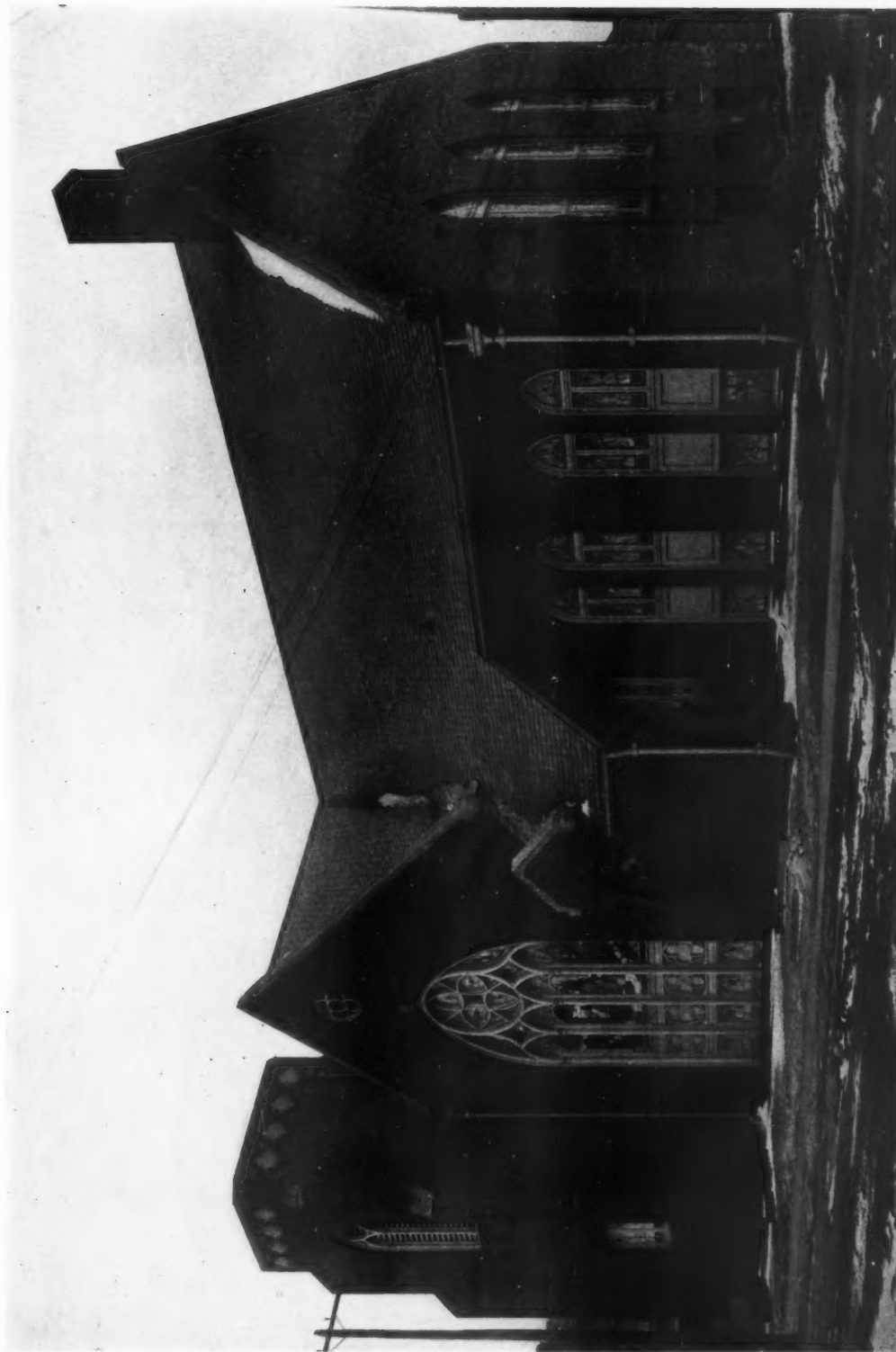
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THE ROOF GARDEN

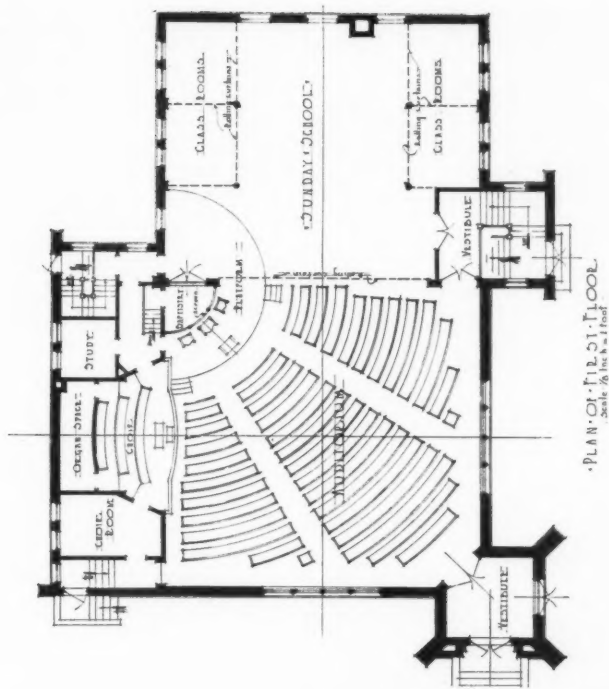
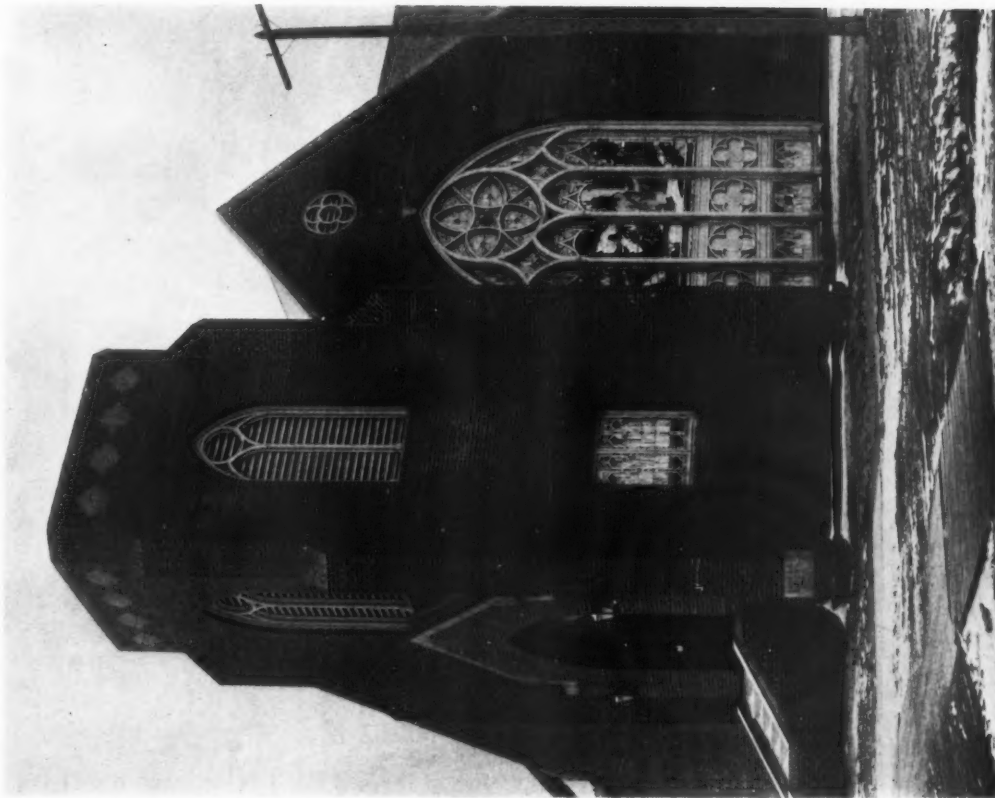
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BURNS AVENUE BAPTIST CHURCH, DETROIT, MICH.

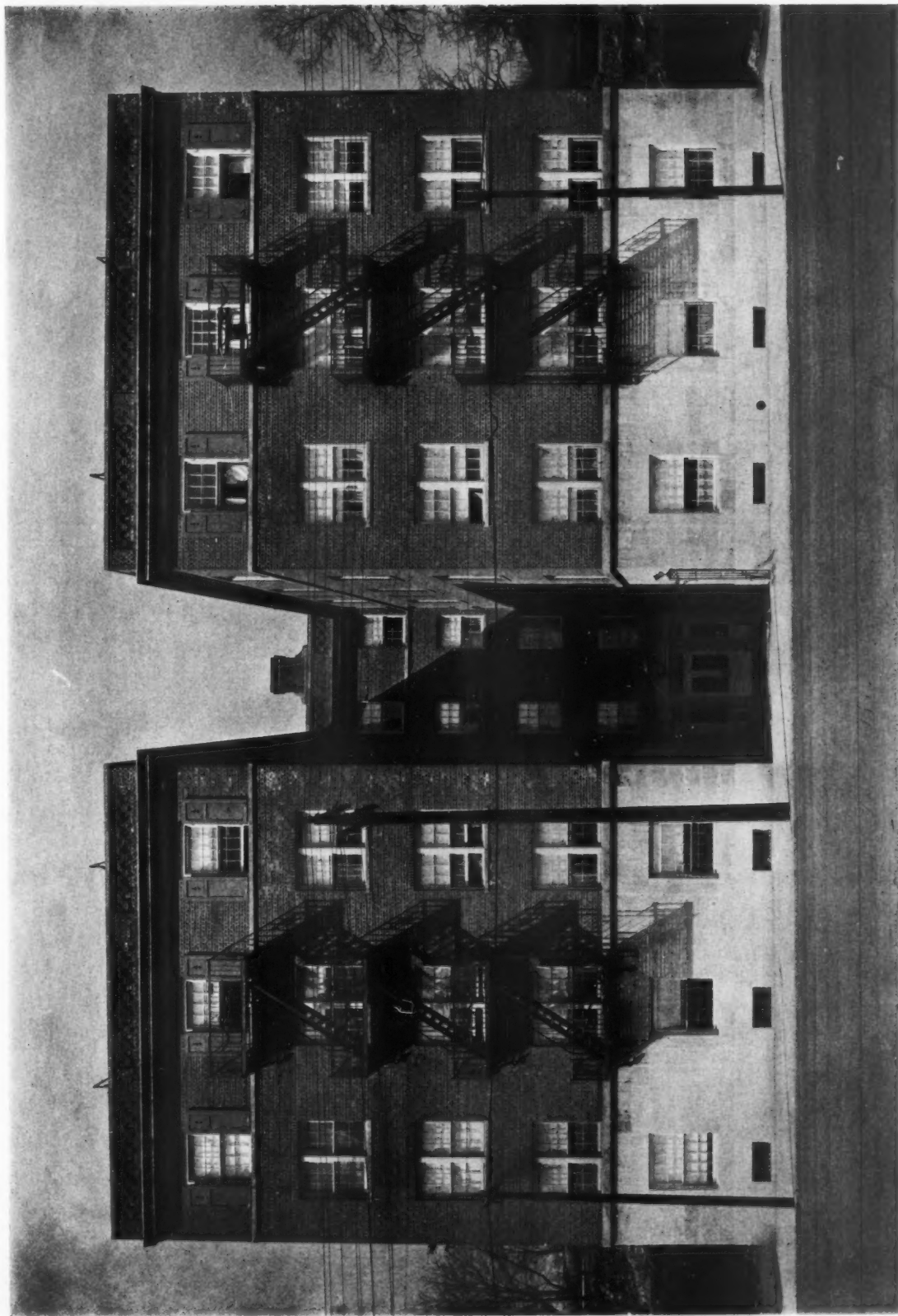
MR. E. R. DUNLAP, ARCHITECT; MR. L. WILLEKE, ASSOCIATE



BURNS AVENUE BAPTIST CHURCH,
DETROIT, MICH.

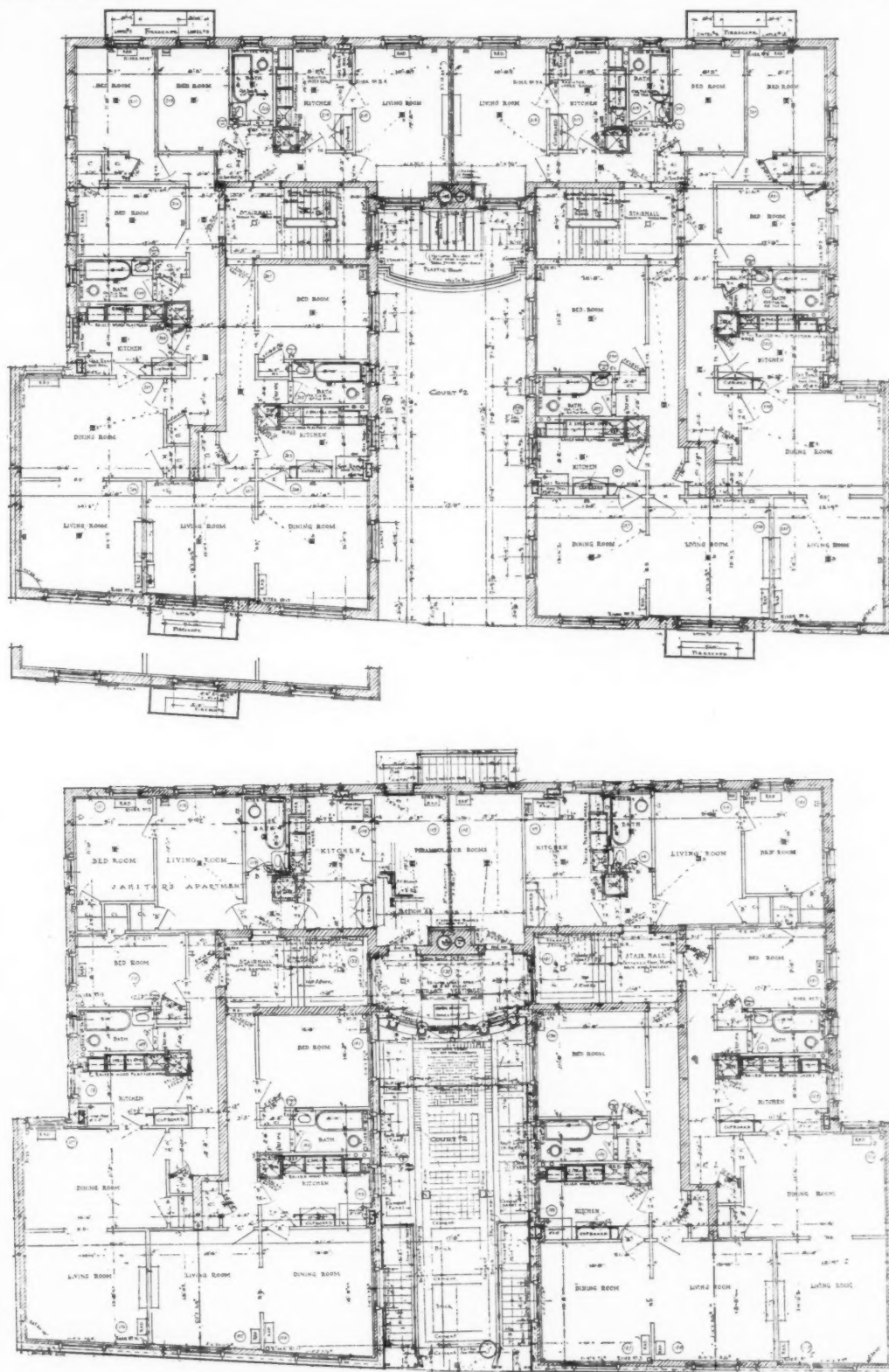
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MR. E. R. DUNLAP, ARCHITECT;
MR. L. WILLEKE, ASSOCIATE



APARTMENT HOUSE, 246TH STREET AND BROADWAY, NEW YORK

Awarded the New York Chapter, A. I. A., 1915 medal
MESSRS. CROSS & CROSS, ARCHITECTS



APARTMENT HOUSE, 246TH STREET AND BROADWAY, NEW YORK

MESSRS. CROSS & CROSS, ARCHITECTS

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THE CAMPAIGN AGAINST THE BILLBOARD

IT is to be hoped that the optimistic reports concerning the growth of the movement to suppress the billboard evil and regulate out-of-door advertising are not in any way exaggerated. That there is a legitimate place and use for the billboard is undoubtedly true, but that it serves no proper function under the conditions which control its utilization in many, in fact, the majority of positions which it now occupies, is equally true. During the past year we have seen an unusual number of ordinances and laws passed, with the object of correcting the misuse of the billboard in many and widely separated sections of this country, and it would seem that their operation, so far as statistics are available, has resulted in a notable diminution of offense to the artistic sensibilities of the public.

In New York where billboards have been permitted to mar many of the most notable parkways and pleasure grounds of the city, the Municipal Art Society and the National Railways Associations division of Municipal Art, are acting in conjunction against the

further disfigurement of the streets, buildings, and vistas by the erection and maintenance of defacing out-of-door advertising. Streets and drives built by the city at public expense for the enjoyment of the people are lined with hideous billboards and gaudy signs until their beauty is hidden and the object for which they were constructed is largely defeated.

In connection with billboards, the question is constantly arising—why should the common welfare be injured or abridged for the benefit of a few? Why, in fact, should out-of-door advertising be tolerated if it is forever to be left to ignorance and selfishness, unregulated and unrestrained? Examples of advertising in foreign cities indicate conclusively that it can be done artistically, and hence much more effectively than it is accomplished here.

This is another example of a condition that can be improved by education, for once the advertising interests are made to understand and appreciate the value that would attach to artistic advertising in its proper place and under proper restrictions, they would be not only willing but eager to accept the regulations now advocated by art societies and others. As great benefit would accrue to the advertisers as to the public.

As a prerequisite to any improvement the widespread impression that the object of advertising is simply to attract attention must be overcome. Unfavorable attention is a detriment to the advertiser, rather than an advantage, and only a favorable impression which can best be created by the artistic display of proper "copy" can, under any circumstances produce favorable results. Among others this axiom seems not to have been accepted by the American billboard advertising interests, up to the present time.

THE OPEN PRICE SYSTEM

PROBABLY the most potent influence opposed to the general and universal adoption of the definite specification by architects has been the fear that the article specified may at times be marketed under a "secret price" arrangement. The obvious result of such conditions would be that the buyer controlled by the necessities of the inflexible specification would be

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likely to pay something in excess of the lowest price at which the materials might be acquired. Shrewd manufacturers have appreciated the potentialities of this situation for some time and have realized that unless some action were taken to assure the architect that his confidence, as shown by the inclusion of their materials or equipment by name in a specification, would not be abused, there was danger of a reversion to the old indefinite clauses with their chances of loss and disappointment to all concerned, but particularly to the manufacturer of high-grade building products. As a result perhaps of this feeling a move has now been made toward the adoption of the "open-price" system, and the initiative, so far as has been brought to our attention, has been taken by a leading manufacturer of brick and tile, with a number of factories in the East. In his announcement, this manufacturer defines the "open-price" system as meaning one price to all, and all prices net, *i.e.*, without discount. The price list submitted will, it is explained, be revised and republished from time to time, in accordance with market conditions, and the cost of manufacture, but until a new list is published, no one can buy these bricks for less and no one will be compelled to pay more.

Of course, there are freight rates and other varying factors entering into the problem of computing the cost of brick delivered at the building site, so the list as published is made to apply to certain territory only; but the basic idea of an open-price is given expression in a way that would seem to merit the moral and material support of architects generally.

With the establishment of this system of merchandising in the building field, the last possible objection to the definite specification is removed, and the way is clear for even those who are fearful of price discrimination under present conditions, to join the ranks of their more progressive brethren in the profession who have already eliminated the "or equal" clause, and all other doubtful and ambiguous expressions from their specifications.

The open-price system has been in successful operation in many lines of trade for years, and there can be no valid reason for failure to adopt it in the marketing of building materials and equipment. Its many advantages, particularly from the standpoint of both the owner and architect will doubtless insure a full share of patronage and resulting prosperity to those manufacturers who become leaders in this new line of progress.



INSPECTORS' FIELD INSTRUCTIONS

(Continued from page 320)

Column forms should be tight at the bottom as accidents have occurred by the fine aggregate seeping out and leaving the column at the base standing on a loose gravel. This is an important point, and many columns when stripped show a tendency to this fault.

Columns and beams should be flushed out with water before pouring to clean the surfaces and improve the bond. Column concrete should be tamped from the top with a long wooden strip, and great care should be taken to see that the concrete flows around the outside of the reinforcing bars and hooping. There is a tendency for the concrete to catch on the horizontal ties and leave voids just beneath same.

A column should be poured slowly so that the process of setting may relieve the hydraulic head and prevent the bursting or warping of the forms.

As to freezing weather, the writer feels that the pouring of reinforced concrete where the temperature is below 32 degrees Fahrenheit or likely to fall below 32 degrees Fahrenheit should never be permitted. In the case of mass concrete the heating of the water, sand or aggregate, or the use of calcium chloride in the water, will permit concreting at temperatures below freezing.

If concrete is frozen before initial set, it will never recover, and should be replaced. If it is frozen after initial set, but before final set, it may recover 80 per cent of its normal strength if it thaws out gradually.

After the concrete has been poured, follow the processes of removing the forms finishing and testing.

This is the danger zone and the following "don'ts" might be suggested:

1. Don't remove forms until the concrete

is thoroughly set and rings like a stone when struck with a hammer.

2. Don't mistake frozen concrete for concrete thoroughly set.

3. Don't remove permanently shores under beams and girders for at least three stories below the next floor to be poured.

4. Don't permit the placing of a cinder fill on the roof until the roof concrete is thoroughly hard.

5. Don't permit heavy sections of ceiling forms to be dropped onto the floor below.

6. Don't permit heavy concentrated loads of material or machinery on "green" concrete floors.

7. Don't accept structural work which exhibits considerable voids or places where the cement and sand is lacking around the coarse aggregate.

If the inspector is in doubt about the quality of a portion of the work he should order a test. This test should be made by a load of at least 1½ times the live load. A beam should not show a deflection of more than one six hundredth of the span.

The test should be conducted with due regard to the safety of all concerned and the writer suggests the use of shores slacked off about ⅛ inch from the beam soffit.

The deflection may be measured by a level or by a lever pointer which will magnify the deflection.

To sum up:

Watch the ingredients.

Watch the mixing.

Check the placing of steel and sizes of forms.

Watch the strength of forms.

Avoid frozen concrete.

Never strip concrete until it gives physical evidence of having set.

Test a doubtful construction or condemn it, and:

Your work will endure with the Pyramids.

CURRENT NEWS AND COMMENT

Le Brun Traveling Scholarship Preliminary Notice

The third bi-annual competition for the Le Brun Traveling Scholarship, founded by Pierre L. Le Brun, will be held in the summer of 1916. It is open to any architect, a citizen and resident of the United States, between twenty-three and thirty years of age, and who is not, nor has been the beneficiary of any other traveling scholarship, and who has had at least three years' experience as draftsman or practicing architect. The amount is \$1,000.00, the period of the scholarship not less than six months.

Each competitor must be nominated by a member of the New York Chapter, A. I. A. who shall certify in writing that the above conditions are fulfilled by the nominee and that in his opinion the nominee is deserving of the scholarship.

All persons who are eligible and desire to compete are requested to send their application to the undersigned before July 15, 1916. Applications must be accompanied by a statement of residence, citizenship, age, experience and general qualifications and by the necessary nomination and certification from a member of the New York Chapter, A. I. A. Those not having the acquaintance of a member of the Chapter may avail themselves of the services of any well known architect who can vouch for them to a member of the New York Chapter, with whom he is acquainted.

Architects throughout the country are requested to bring this notice to the attention of their eligible draftsmen.

BERTRAM G. GOODHUE,
2 West 47th Street, New York City.
*Chairman, Committee on Le Brun Traveling
Scholarship.*

National Hospital Bureau

The National Hospital Bureau, Inc., 8 West 40th Street, New York City, has been formed with a two-fold purpose. First, to maintain a hospital center for the entire country, from which source reli-

able information will be furnished to hospitals in course of construction, those contemplating construction, or those already in operation and needing information of any character; a place to which hospital building committees may go either to have plans revised or criticized, or preliminary plans prepared as a basis for the work of their chosen architect.

Second, to furnish the most direct route from reliable manufacturers to the hospitals by means of a permanent model hospital exhibit consisting of furnishings and equipments selected and standardized by experts; open at all times to the hospital public—a place wherein can be found the most complete and modern equipment and hospital appliances of all descriptions.

How nearly the National Hospital Bureau fulfills this two-fold purpose can be judged by a visit to this exhibit, which occupies an entire floor at the above address.

A program of receptions has been arranged, and May 23 and 24 designated as architects' days. The hours are from 2 to 5 and from 7 to 9 p.m.

The Ruins of Arras

The London Times special correspondent, writing from British Headquarters on the 7th November, and describing the condition of Arras, says:

After the appalling desolation and ruin of Ypres, the town does not at first appear to have suffered so terribly. But this impression is more superficial than real. There are streets, such as the Rue des Grands Viziers, which rival even the famous Rue d'Elverdinghe in Ypres. The Cathedral, always the favorite target for a German gunner, has been shattered beyond repair, and such portions of the roof as still remain hold on precariously to the split pillars of the nave. Even the famous angels, which escaped so long, have now been brought down and lie amidst the piles of white masonry on the cracked pavement; inextricably heaped up with boulders of cornices, vaulting, and walls.

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The old Archbishop's Palace by the side has suffered less, but the handsome private chapel is a pitiful wreck, and not one of all the beautiful stained-glass windows but lies in shattered fragments on the floor or in the courtyard outside. The Hotel de Ville, with its famous belfry, is even more pitiable than the photographs have shown it to be, and one cannot see the *pavé* round the sides owing to the piles of that exquisitely wrought masonry that made this one of the most famous buildings in the world. The huge new station is almost fantastic in its ruin. A time-table, dated 15th August, 1914, still adheres to the wall of the buffet and announces the hour when the last train for Paris will leave the town. Vauban's famous citadel, nicknamed the *Belle Inutile*, justifies the second as completely as it gives the lie to the first of these two epithets.

Meeting of Southern California Chapter, American Institute of Architects

The Ninety-fifth meeting of the Chapter was held April 11, 1916.

The minutes of the Ninety-fourth meeting were read and approved.

For the Board of Directors the Secretary reported a meeting held on March 31, at which meeting the Secretary was authorized to send a copy of the proposed By-Law amendment to all Institute members.

For the A. I. A. Sub-Committee on Competitions, Mr. J. E. Allison read a telegram

relative to the Merced High School competition.

For the Committee on Ethics and Practice, Mr. P. A. Eisen reported on a meeting held by the Master Builders of Los Angeles, at which he and Mr. J. C. Austin were present.

Communications from various associations were then read.

A communication from the San Francisco Chapter A. I. A. advised that the competition for the Merced High School did not conform to the Circular of Advice on Competitions.

From Mr. B. F. W. Russell relative to a matter of Institute Public Information. This communication was referred to the committee on Public Information.

A letter was next read from the Board of Public Works expressing a desire to obtain information as to the advisability of granting an amendment to the city building ordinance covering the kind of wire which may be used in spiral reinforcement of concrete columns. The Chapter voted to indorse a substitute amendment to overcome the difficulty, which was to be framed by Mr. A. C. Martin, Mr. J. J. Backus, and the Secretary.

A call was rendered on the Chapter members relative to the sale of books belonging to the late Fernand Parmentier.

On the conclusion of the business Mr. J. C. Hillman gave a talk on a recent trans-continental motor camping trip. This talk was most entertaining and was greatly enjoyed by all present. Upon its conclusion a vote of thanks was rendered Mr. Hillman.





· HOTEL · PENNSYLVANIA ·

MESSRS. McKIM, MEAD & WHITE, ARCHITECTS

The Proposed New Hotel Pennsylvania in New York

The Pennsylvania Railroad Company makes this announcement of the plans for the hotel to be erected on Seventh Avenue, between Thirty-second and Thirty-third Streets, New York City, to be known as the Hotel Pennsylvania.

The Hotel Pennsylvania will be directly opposite the Pennsylvania Station, with which it will be connected by an underground passageway for the use of patrons of the hotel and the Pennsylvania and Long Island Railroads. It will also be connected with the important express station on the Seventh Avenue Subway (between Thirty-

second and Thirty-fourth Streets) and is within half a block of the Hudson & Manhattan Railway, the Sixth Avenue Elevated and the new Broadway Subway, now under construction.

The Hotel Pennsylvania will occupy the property fronting 200 ft. on Seventh Avenue and 400 ft. on Thirty-second and Thirty-third Streets. It will be set back 15 ft. within the building line of Seventh Avenue to widen the sidewalk and avoid future overcrowding around the hotel and station.

The first section on Seventh Avenue will be twenty stories in height and contain 1000 bedrooms, each with a bathroom or shower. The eastern section of the hotel

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will be three stories in height, but so constructed as to permit the construction, when necessary, of twenty additional stories, thus providing 1200 additional rooms, making a total of 2200 rooms.

The plans have been prepared by Messrs. McKim, Mead & White, who were the architects for the Pennsylvania Station, thus insuring harmony of design with that beautiful building. Ample courts, exceeding 40 ft. in width, the longer ones facing the south, will provide sunshine and the benefit of the prevailing southerly winds to most of the rooms.

As the Pennsylvania Station building does not rise above the first bedroom floor, the Hotel Pennsylvania will be exceptionally favored for sunshine and air. Provision is being made for open-air dining-rooms in the summer on the twentieth floor, facing Seventh Avenue and the Hudson River. Large rooms will be provided for meetings, conventions and other public gatherings. The hotel will have eight large passenger elevators, in two banks, all opening from one corridor; convenient and rapid room service to all the rooms will be insured by a separate bank of four elevators.

Book Notes

REINFORCED CONCRETE. A condensed practical treatise. By Walter Loring Webb, C.E., and W. Herbert Gibson, B.S., C.E. 256 pp., pocket size, flexible leather. 123 illustrations. Price, \$1.50. Chicago: American Technical Society.

It has apparently been the intention in the preparation of this volume to present the subject of reinforced concrete in such a simple and concise manner as to be of value to those not versed in higher mathematics. As a result the work commends itself to a wide circle of users of this material.

Probably no feature of building construction has had greater additions to its literature during the past ten years than reinforced concrete.

The present volume will on account of its condensed form and accuracy of statement serve a useful purpose, especially to architects who will find in its arrangement and convenient size a handy reference volume.

THE STRENGTH OF MATERIALS—A TEXT-BOOK FOR ENGINEERS AND ARCHITECTS. By Ewart S. Andrews. With numerous illustrations, tables and examples. Full cloth, 600 pp., 5 $\frac{1}{4}$ x 8 $\frac{1}{2}$ inches. \$4.00 net. New York: D. Van Nostrand Co.

This work aims to supply to architects and engineers a knowledge of the principles underlying the design of machines and structures from the standpoint of their strength, in as simple a manner as it is believed by the author is consistent with accuracy.

Scientific methods applied to modern architectural and engineering problems, have very largely added to the complexities of practice, and the architect or engineer who successfully carries forward work in his profession will need to know the physical characteristics of the materials he uses.

For these reasons, a book of this nature will be found useful. Its preparation has apparently been so carefully undertaken as to insure reliability.

To Restore Independence Hall

A recent resolution of the Philadelphia Chapter of the American Institute of Architects, urging the city to place Independence Hall in the exact condition that it was during the revolution, was indorsed by the executive committee of the Chamber of Commerce.

Personal

It is announced that Mr. Paul T. Cahill, Cleveland, Ohio, and Mr. Kyle W. Armstrong, who has been associated with Mr. Cahill, have formed a partnership for the practice of architecture and engineering, with offices at 621 Hippodrome Building, Cleveland, Ohio, under the firm name of Cahill & Armstrong.

Mr. John Henri Deeken, architect, announces that he has established offices for the practice of architecture, in the Union Central Building, Cincinnati, Ohio, and would be pleased to receive manufacturers' catalogs and samples.

INDUSTRIAL INFORMATION

Terra Cotta Roofing Tiles

The Ludowici-Celadon Company, 104 South Michigan Avenue, Chicago, Ill., has recently published a new book which is designated as "A Detailed Reference on Roofing Tiles." This takes the form of a loose-leaf book containing over one hundred plates illustrating in detail the various more common shapes of roofing tiles manufactured by this company, and the manner of their proper use. The plates are preceded by text giving suggestions for specifications covering the preparation of roofs to receive the tile, as well as the manner in which the tile should be laid. It would seem as though this book contains a sufficient amount of authoritative information on the subject of tile roofs to commend it to practically every architect in the profession. It will be sent to those desiring it upon request.

Southern Yellow Pine

The Southern Pine Association of New Orleans, La., has recently issued a pamphlet on southern yellow pine timbers, including definition of the new density rule. It has been recognized for many years by both the manufacturers and consumers of southern yellow pine, that a constructive and simple method for classifying various classes of southern yellow pine for structural purposes would find wide application.

The three botanical species of yellow pine frequently intergrade so far as their density is concerned, and much misunderstanding has resulted from time to time because of the lack of a practical method for determining whether any particular class of yellow pine was adapted for the purpose intended.

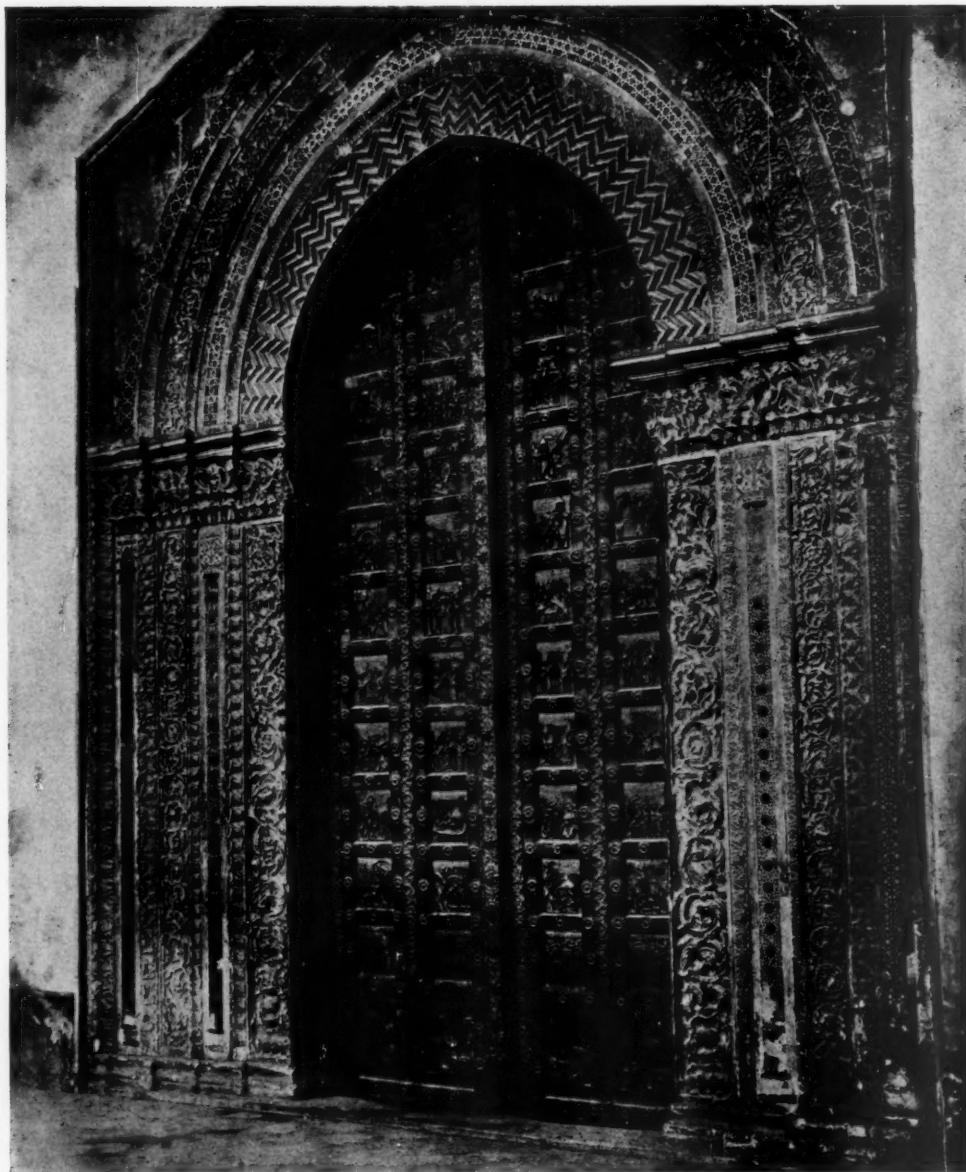
As a result of careful study of many trees of all species, a method has been devised during the past year by the United States

Forest Service, which was adopted by the Southern Pine Association in January, 1915, and was presented in detail to the American Society for Testing Materials, at their annual convention, and subsequently adopted by the society as standard in August, 1915. Based on this new density rule, a new classification for structural yellow pine timbers has been established, which eliminates the names "longleaf," "shortleaf," and "loblolly" pines. The new rule provides two classes: dense southern yellow pine and sound southern yellow pine. Dense includes the best pieces of what has hitherto been known as long leaf pine, and excludes the occasional pieces of inferior quality for structural purposes. It also includes those pieces of shortleaf pine, Cuban pine and loblolly pine, which because of their density and strength are in every way equal to high grade longleaf pine.

In the pages of this pamphlet are found reprinted the designation for southern yellow pine as adopted by the American Society for Testing Materials, and also in Appendices I and II the detailed reports of the United States Forest Service, showing the bases upon which the new rule was formulated; also there is printed the rule as adopted by the Southern Pine Association, giving the classes of pine and methods for determining same, and the various grades of timbers as they are now offered by the manufacturers of southern yellow pine. All manufacturers and dealers are invited to brand their timbers in accordance with the grades and classifications which are contained in this pamphlet.

It would seem as though the information here collated and printed would be of great value and service to architects and engineers engaged in the design or supervision of construction work, in which southern pine is used. Copies may be had upon request.

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II—6 BRONZE DOORS, MAIN PORTAL, THE CATHEDRAL, MONREALE
BONANNUS OF PISA, ARCHITECT. PERIOD, LATE 12th CENTURY.

(Note—Bonannus Was First Architect of Leaning Tower of Pisa)