THE AMERICAN ARCHITECT

VOLUME CV WEDNESDAY, APRIL 15, 1914 NUMBER 1999

STALLS AND SCREEN, FIRST BAPTIST CHURCH, PITTSBURGH, PA.

CHANCELS, THEIR ARRANGEMENT AND FURNITURE

With Illustrations from the Churches of the New York Office of Cram, Goodhue & Ferguson

By ROGER SPELMAN

BEING PART II OF A SERIES OF ARTICLES

IT is the greatest pity here in America that so little use is made of chancel screens. Nothing so perfectly marks the transition from nave to chancel, or so adds to the dignity of the celebration of the Eucharist. They destroy the feeling of bareness so frequently felt in our chancels, give a play of light and shade, an interest to the space beyond, and create a sense of mystery that is unbelievable unless seen. Many a simple parish church of England owes its charm to its chancel screen. Where there is a great east window, the screen and towering loft make its glare bearable; and, curiously enough, they always seem to add to the length of the church;—to see a few good examples in place is to be convinced of their value. And the English version of the prayer book distinctly says, "The chancels shall remain as they have been in times past."

As in every religion the sanctuary has been shut off from the profanation of the multitude, it is only reasonable to suppose that some sort of rail or barrier existed from the earliest times in Christian churches; and we have many references to early rails to confirm this. But no very early example remains, and we can not be sure what form the division took.

After explaining the use of the veils in the Jewish tabernacle, which separated it into three parts for the Holy of Holies, the priests and the people, Mr. Bligh Bond states that our earliest detailed accounts of Christian churches show that these

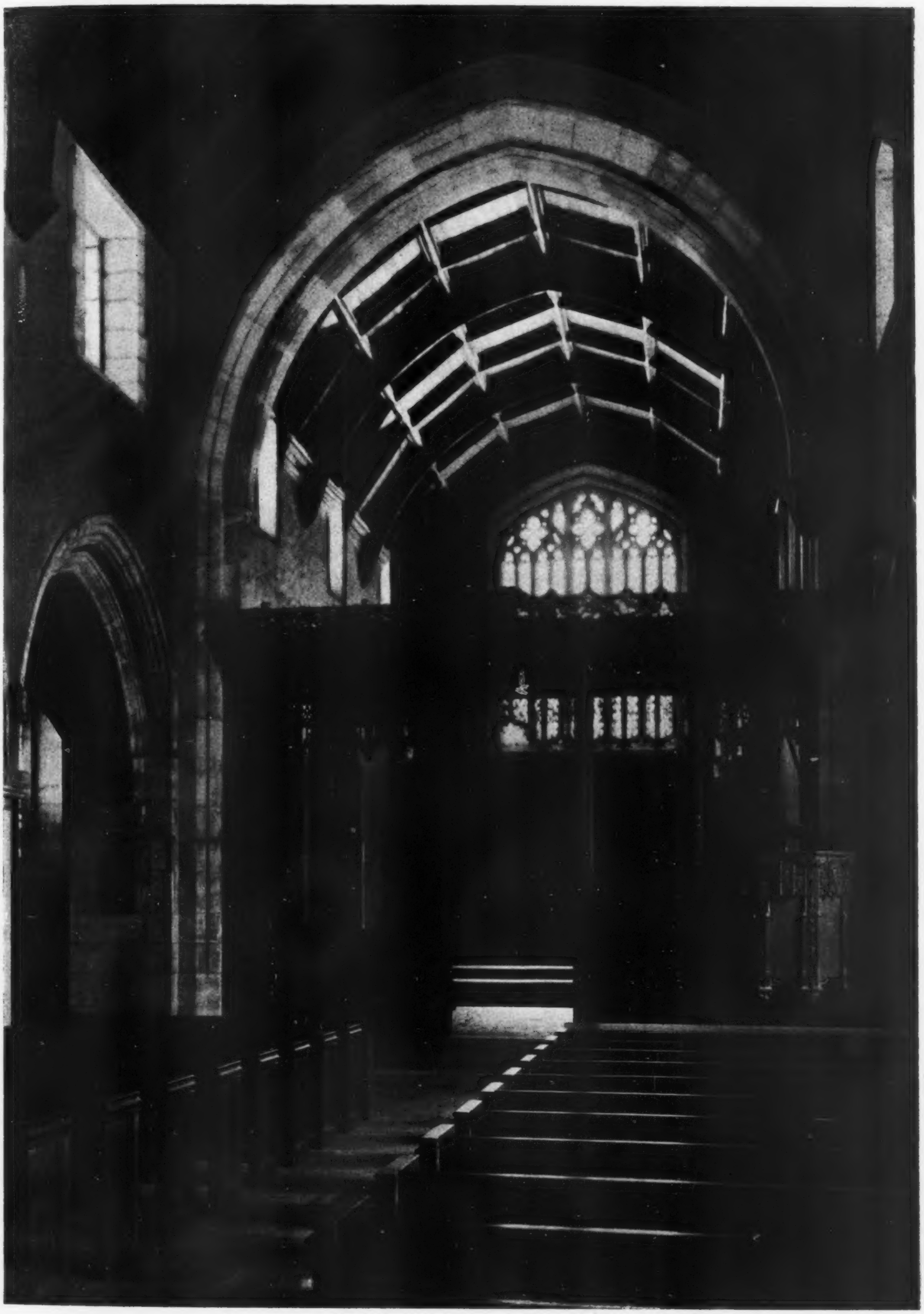
DETAIL OF LOWER STALLS, TRINITY, CHAPEL, BUFFALO, N. Y.

were also divided primarily into three areas, separated by screens or veils. He continues—"These, like the Jewish veil, had a symbolic aspect. When, at the hour of the Crucifixion, the veil of the Temple was rent asunder, this event received its symbolic interpretation, in the sense that a direct avenue was now revealed between the soul of man and his God, and the way was open to all. Thus in the use of the veil, as we find it perpetuated in the early Christian Church, there is this modified symbolism, and the veil, although still suggestive of a barrier (that of physical death) was not stretched permanently before the Sanctuary, but was parted down the middle, to allow of its being withdrawn at certain times, thus suggesting the idea of a spiritual unity." "Their symbolic meaning and ritual use is indicated by Chrysostom in the following passage:—'When the sacrifice is brought forth—when you see the veils withdrawn, then think you see the heavens opened, and the angels descending from above.' It seems clear, then, that the symbolic or ritual use of veils was well nigh universal in the primitive church, and was esteemed of great importance. At first, it is probable, the veil pure and simple formed the barrier plus such framework or pillars as may have been necessary for its support." Though "veils remained in use until long after the days of Constantine, .often in the form of tapestry or a curtain, by degrees regular screen-work took their place." But, in the thirteenth century, Durandus, who wrote most fully on the symbolism of all things pertaining to the church, makes no mention of screens; which would seem to indicate that they were used rarely, if at all.

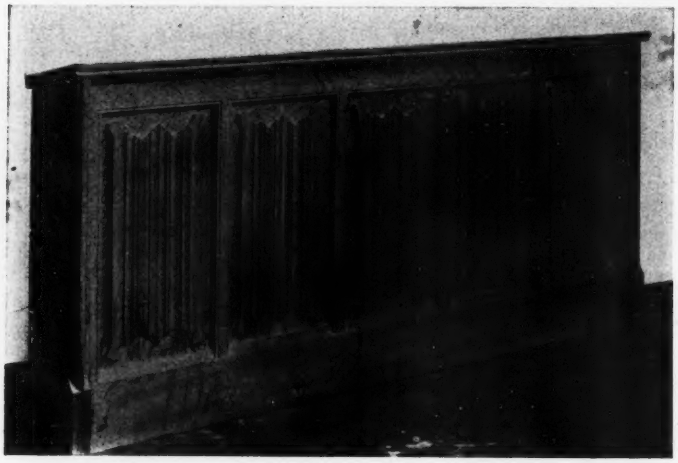
And indeed it is probable that rails had at first more of a practical than a symbolic use. The earliest barriers were apparently low parapet screens of stone, or were rails. If space permitted it would be interesting to trace, as far as possible, the development from these to the colonnade, which formed the next step; and still later to the Iconostasis, with its blaze of painting, gold and jewels; and to the English screens, those marvels of carved and painted woodwork, which first arrest and then hold the attention of all who enter the churches possessing them.

In the description of the Constantine's Basilica at Jerusalem we read "the 'apse' was 'surrounded' by twelve columns, equal in number to the Apostles, and adorned on

DETAIL OF PARAPET, TRINITY CHURCH, TRINITY PARISH, BUFFALO, N. Y.



CHANCEL SCREEN, ST. MARK'S CHURCH, MT. KISCO, N. Y.



BOOK REST, ST. PAUL'S CHURCH, DULUTH, MINN.

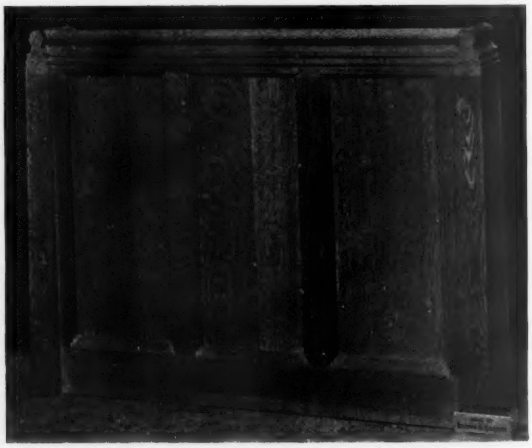
the summit with great bowls of silver." The use of an architrave as a support for hanging lamps, for bowls and candlesticks containing lights, for reliquaries, veils, and, most important of all, for a cross or later a crucifix, may have been the reason for the almost universal use of colonnades. Or the columns may have been merely the development of those supports which the length of the rood beam made necessary, examples of which we know existed in very early times. The triumphal arches were frequently so wide that the beam, without support would have sagged, or would even have been impossible. This beam may have been itself for the support of lights rather than to carry a crucifix. Whether the rood beam suggested the architrave or *vice versa*, it is impossible to say.

In the early church when the choir was placed in the nave this also was separated from the public space by low parapets. When the choir was placed in the apse, and the whole formed the chancel, screen and parapet were combined and formed either a colonnade resting on a parapet, or a colonnade with marble slabs between the columns, as in the famous example at Torcello. Though the colonnade was not the final form in England, there are sufficient remains to show that there were examples of colonnades here, and these occur in the earliest churches of which there are any remains today. This would seem to mean that our screens of light woodwork were derived from the same source as the solid stone Iconostasis of the east.

There is still one other reason for the screens being used everywhere, and that is that they served as reredoses for the nave altars. Nearly all English parish churches seem to have had three altars, of which two were placed in front of the screen, on either side of the entrance. When aisles were added to the churches, these altars were naturally moved to the ends of the aisles, and placed in separate chapels.

The origin and reason of the rood loft is more difficult to determine than that of the screen. It has been suggested that they represent merely a connecting, by a gallery, of the two great ambos; but we do not find rood lofts in Italy where the ambos were used everywhere and "there is no record of the use of ambos in England." Lofts were found in practically every church in England. The elaborate ritual of the cathedrals and collegiate churches perhaps required them—but why were they built in even small parish churches?

The lofts were usually about six feet wide, though they varied from five to eight feet and in some cases were even wider. Usually they were balanced and kept in place above the screen by groined vaulting,



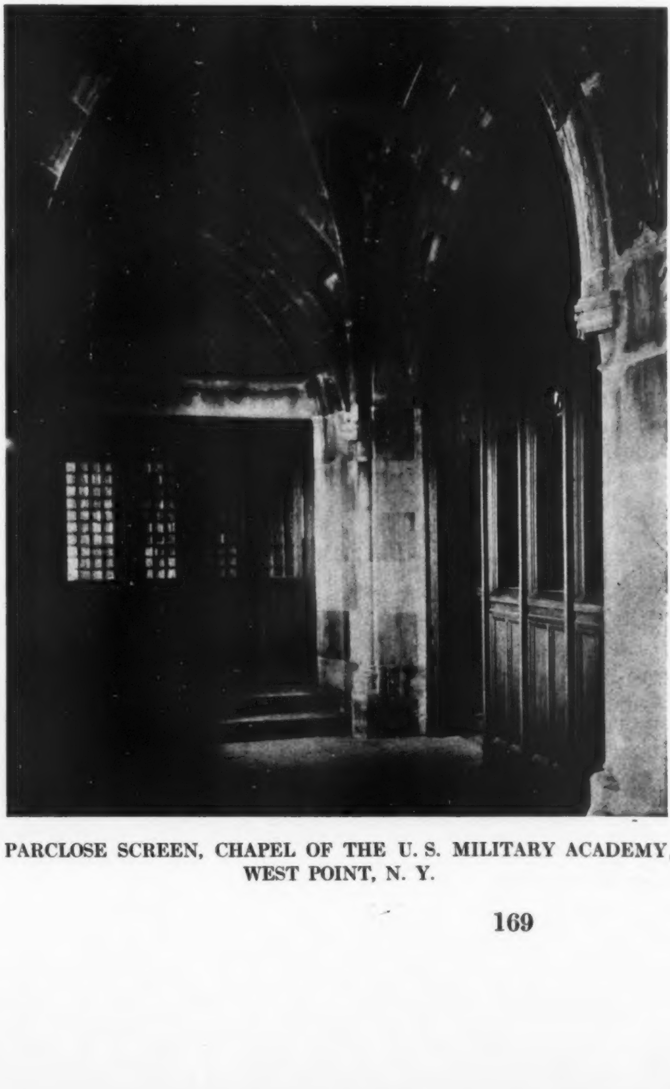
BOOK REST, ST. THOMAS'S, NEW YORK

ST. PAUL'S CHURCH, DULUTH, MINN.

but the wider examples were also supported by additional beams. They were protected by richly ornamented galleries or parapets about three feet six inches high, on top of which was usually placed the great rood, with its attendant figures of Mary and John. This faced the nave. Sometimes the great rood, or as it was called "high rood," "good rood," "high cross," "great cross," "greatest cross," etc., was placed on a beam above the gallery. (The Chapel of the Intercession was designed to have a great hanging rood to mark the transition from the nave to the chancel, but this has not as yet been put in place.)

But what was its use? We do know that the loft was used to read and preach from, but the stairs leading to it, usually built in the thickness of the aisle wall, in the form of a "vise," were frequently so narrow that a vested priest could not comfortably mount. The name "Jube," as these lofts were called in France, and sometimes in England, denoted one use, for the reading of the Gospel was always preceded by the benediction "*Jube Domini benedicere.*" They were also much used as singing galleries and for those musicians who were hired to come in for all great festivals. In many of the large churches they also carried the organ. Some lofts, even contained pews and many had altars. The rood loft in Santa Sophia was large enough for the Byzantine emperor to be crowned on it: and at Rheims Cathedral the French kings were crowned on the Jube.

Beautiful and effective as these lofts are, their interest to us is almost solely archæological, though in the case of Halifax Cathedral, there will be a fully equipped rood loft over the screen. This loft also has an unusual form of rood, the two



PARCLOSE SCREEN, CHAPEL OF THE U. S. MILITARY ACADEMY, WEST POINT, N. Y.

thieves' crosses being added to the crucifix supported by the Virgin and St. John. Examples of the three crosses still exist in many places in Brittany as at Fiacre-le-Faouet. But with the screens the interest is vital and the old examples richly repay study.*

The screens were very substantially constructed, dowelled and oak pegged. The vertical mullions were framed into heavy sills at the bottom and supported a heavy beam at the top. These sills frequently ran through from side to side, making it extremely awkward at the entrance. The transom rail was usually from three feet six inches to four feet above the floor. Both sill and transom were delicately moulded and frequently painted. The lower part of the screen was filled with solid panels and tracery. These, as well as the panels of the loft above, were often painted either in diaper patterns, similar to those in the choir gallery front at Pittsburgh, or with figures of saints and virtues. Above the transom rail, the screen was kept open, so as not to obscure the view of the altar. The mullions were moulded, buttressed and sometines carried small figures. The upper portion of each division was filled with tracery, usually gotten out of the solid and from two and one-half inches to four inches thick, though later this was thinned. As large an area as possible of the tracery was gotten from a single board, a remaining example measuring thirteen inches wide by six feet long. Above this tracery, which was usually rather simple, came the cornices of great variety and most splendid richness.

CHOIR STALLS, SAGE MEMORIAL CHURCH, FAR ROCKAWAY, N. Y.

In these cornices are the finest examples of foliage of the whole Gothic period, showing splendid feeling for balance of light and shade. The bands of ornament appear to be cut from a single piece but are almost invariably built up and the carving set into deep coves to give a maximum depth to the shadows.

We may not hope today to rival the finest of the Devonshire screens, the very richness of the carving would make their cost prohibitive in this less religious age. And today, when we have to search the entire country and then find only a few craftsmen capable of executing such work, it is sad to reflect that the old screens were not made by imported workmen, but by the village carpenter; and that this was the rule all over England.

Two, four, six, or even more, candlesticks on the rood loft are in conformity with ancient custom and look most impressive if the churches are kept in proper shade; but probably most impressive of all is the single great crucifix on the screen. Screens make very perfect memorials, giving ideal opportunities for the sculptor and painter.

The photograph of the interior of St. Mark's, Mt.

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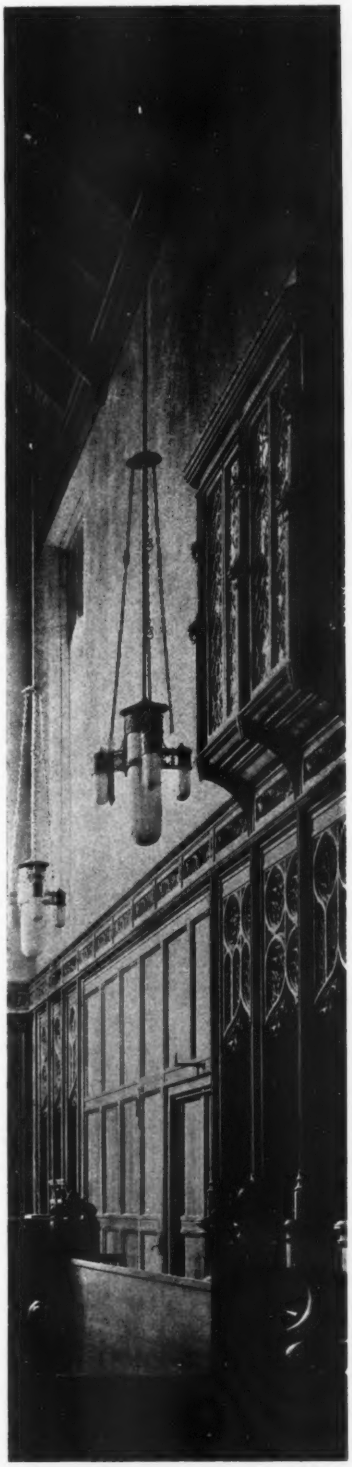
*Mr. Francis Bond's books "Screens and Galleries," "Stalls and Tabernacle Work," and "Misericords," as well as Mr. F. Bligh Bond's book, "Roodscreens and Roodlofts," are most interesting and superbly illustrated. The latter work is rich in measured drawings and scale details.

Kisco, is unsatisfactory, both in lighting and because of the lack of any permanent furniture behind the screen. The screen itself is one of the most successful in the country; simple, in keeping with the church, rich and very lovely. The shields on the back bear the symbols of the Passion.

The screen at St. Paul's, New Haven, separating the chapel from the baptistry is simple but very effective. As it is now, it suggests those tympanic screens of England where the space between the screen and roof was deilberately filled in with match boards or plaster work, on which was painted "The Doom," and later the ten commandments, the royal arms or some allegorical scene. Eventually on this tympanum will be placed a small organ, when the whole will form a very beautiful chapel end. The stalls form the base of the screen as they would in a screened choir having returned stalls, and are combined with the screen somewhat after the Welsh manner.

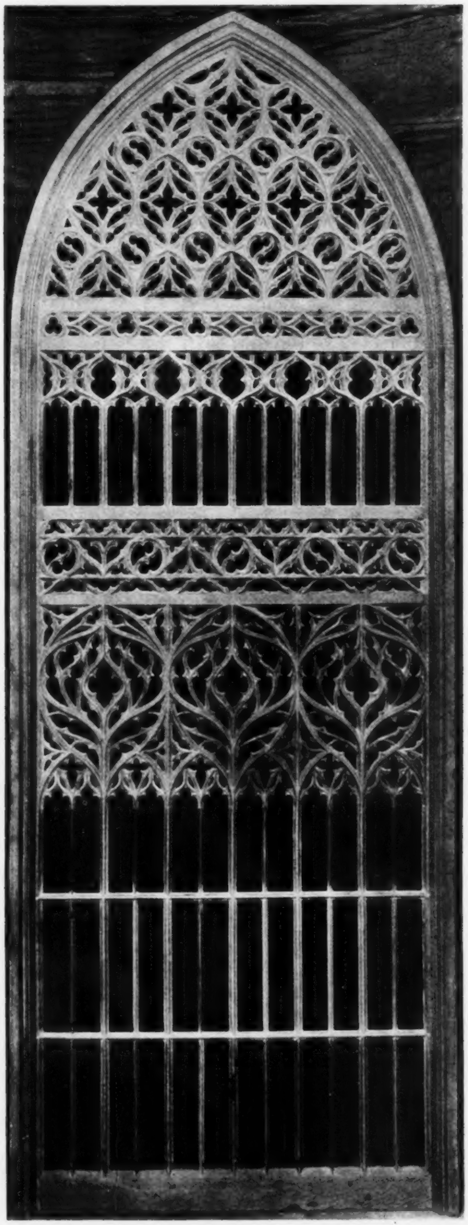
The narthex screens at the Chapel of the Intercession and South Church, show a particularly successful treatment of entrance vestibules with galleries placed above them. Here, as in the rest of the Intercession woodwork, the carving will become richer with age as the dust accumulates and it loses its uniform color. Perhaps, however, the bands or ornament here are not undercut as deeply as they might be. The photograph of the first screen gives just a suggestion of the interesting character of the beautiful modern glass.



STALLS AND NUN'S GALLERY, ST. JOHN'S CHURCH, WEST HARTFORD, CONN.

Where there are chancel aisles, parclose screens are necessary to shelter the clergy from the draught and to serve as a protection. The very inadequate photograph of the West Point screen, the entire upper part of which is filled with tracery, and that of South Church show examples. The organ screens at St. Thomas's Church also belong to this type. Any richer form of organ case, where there are so many openings, would have overpowered the chancel. Mr. Goodhue explained that he wanted these to be very inconspicuous, giving simply a rich texture. This effect is gained by the soft natural gray of the wood as well as by the lack of projection; and they will form a most effective background for the canopies of the stalls. The tracery of the nun's gallery, the Chapel of the Intercession, forms a kind of stone parclose screen — very different in treatment from the nun's gallery above the stalls at St. John's Church, West Nartford. Also at the Intercession, the morning chapel screens are so good and the carvings have been kept in such admirably flat relief that is seems worth while to illustrate them by details. A very interesting parclose screen terminating in a font separates the morning chapel sanctuary from the aisle at St. Thomas's Church.

A parapet is the usual modern method of separating the chancel and nave. This may be of stone, as at St. Thomas's and the Chapel of the Intercession; or of wood, as at Hartford and Duluth. It should be solid, not open and high enough to screen the stalls and benches but not to hide the altar and should leave a clear view of the chancel from the nave. There is always some change of level between the nave and chancel but there should not be more than from one to three five-inch steps. As a rule, these steps should not be recessed into the choir but should come on the nave side of the entrance, as at Mt. Kisco.

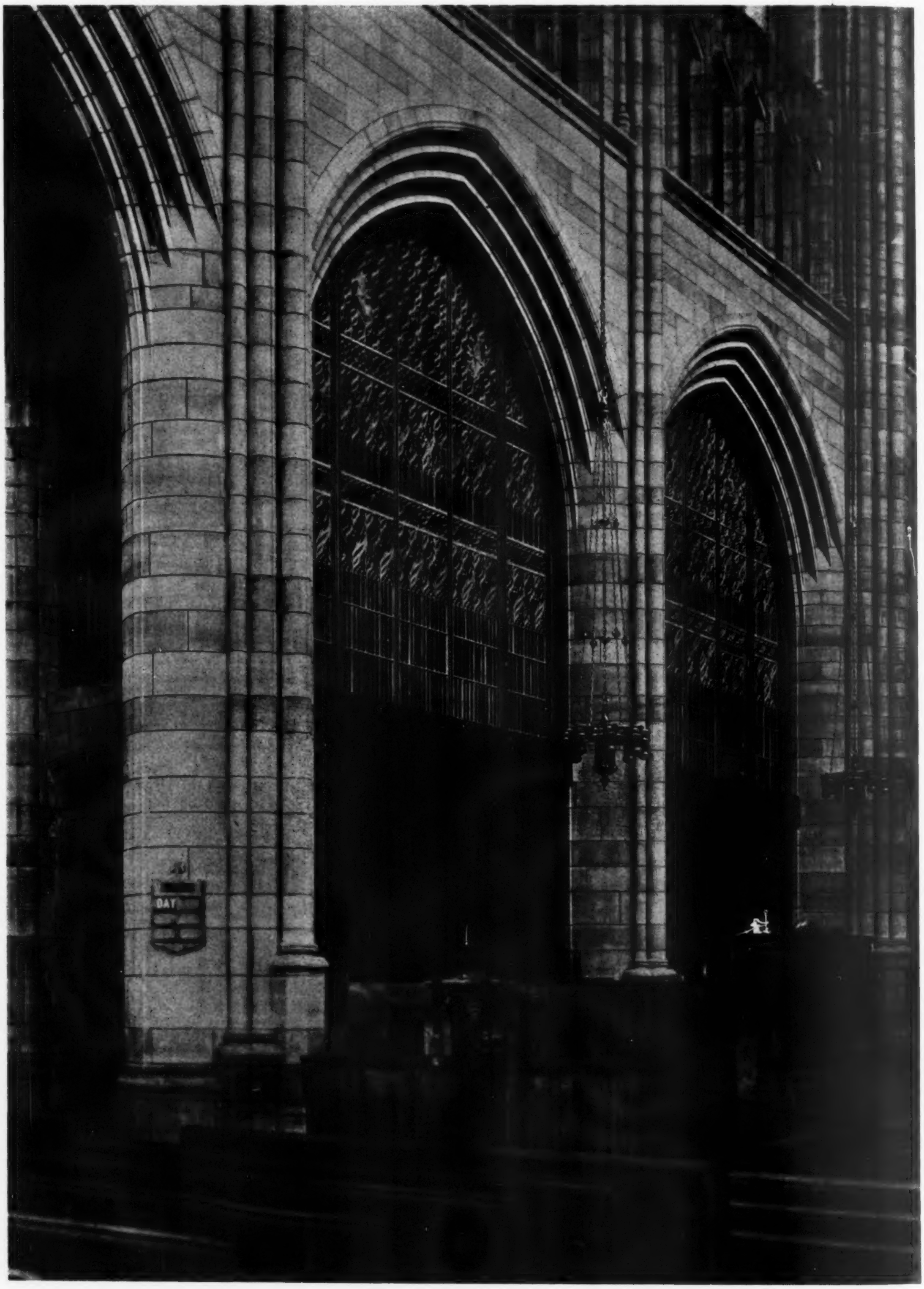


SMALL ORGAN SCREEN, ST. THOMAS'S CHURCH NEW YORK

If space permitted, it would be extremely interesting to consider at length the different locations of the seats of the clergy and the reason for these changes, but even a brief outline may be worth while. In general, the earliest churches were planned with the apse toward the west. This apse was usually a semi-circle, on whose chord was placed the altar. Around the wall of the apse, back of the altar, were the seats of the clergy, with the throne of the Bishop in the centre, raised high above the other seats; these still exist at Torcello. With this arrangement, the officiating priest faces both the east and the congregation. But it was most desirable that the congregation also should face the east. Probably in the fourth century, the church plans were reversed, the apse now facing the east. With this arrangement both officient and congregation faces in the same direction. The clergy sat in the nave as they now do at San Clemente and other Roman churches. In the ninth century the sanctuary was lengthened so it would include both altar and clergy, but the clergy being seated in the sanctuary about the altar detracts much from the dignity of the service. From this arrangement it was a natural step to the familiar modern plan of nave, choir and sanctuary, each division distinctly marked.

It is probable that all ancient arrangements included returned stalls and there is every reason for going back to this practice in parish churches; especially where there are screens, it seems a pity not to set the clergy stalls against them. Among other advantages, they assist in the convenience of the clergy and differentiate them from the choristers; they make it unnecessary for the clergy to stare at the congregation and enables them to obtain much more perfect supervision of the choir boys; the priest faces east, as he should, and leads the congregation in song and prayer, and when he

(Continued on page 175)



ORGAN SCREENS, ST. THOMAS'S CHURCH, NEW YORK

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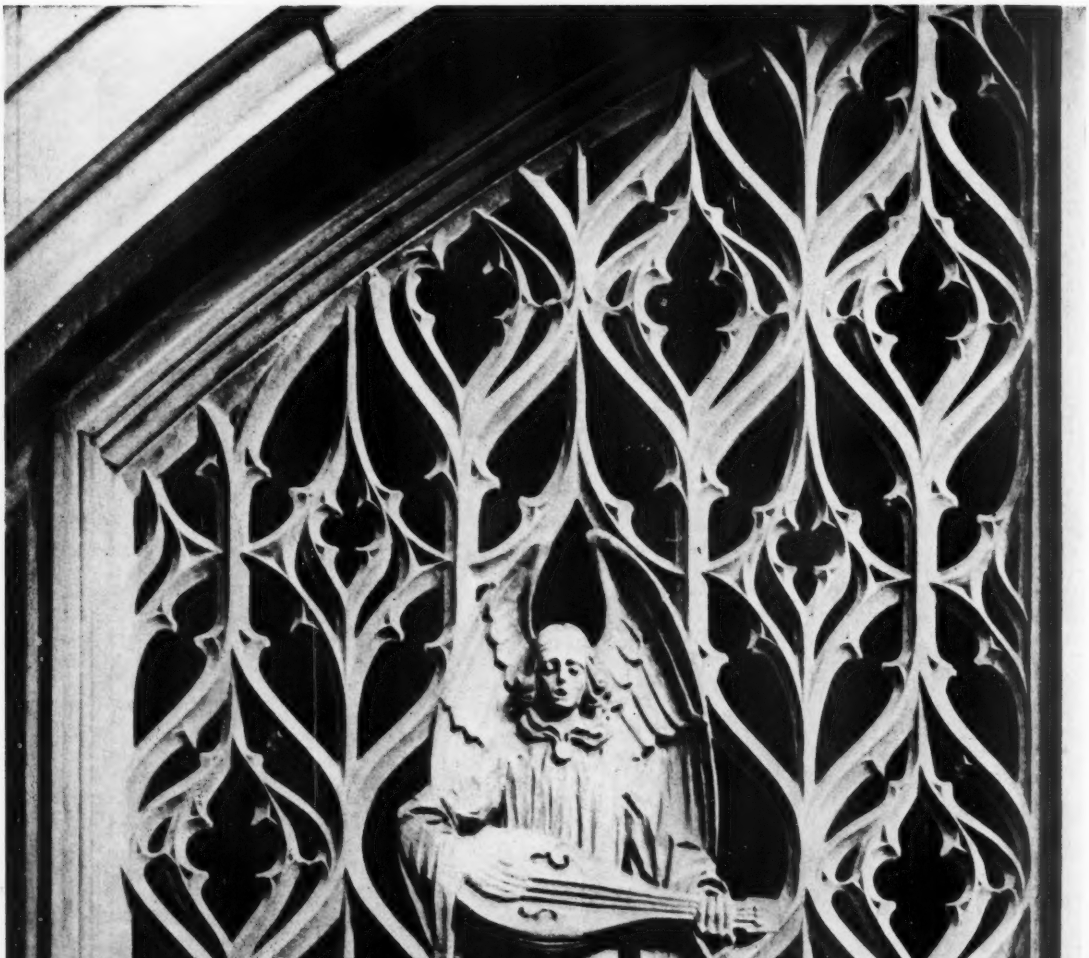

DETAIL OF ORGAN SCREEN, ST. THOMAS'S CHURCH, NEW YORK

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NUN'S GALLERY AND RECTOR'S STALL, ST. THOMAS'S CHURCH, NEW YORK

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STALLS, TRINITY CHAPEL OF TRINITY PARISH, BUFFALO, N. Y.

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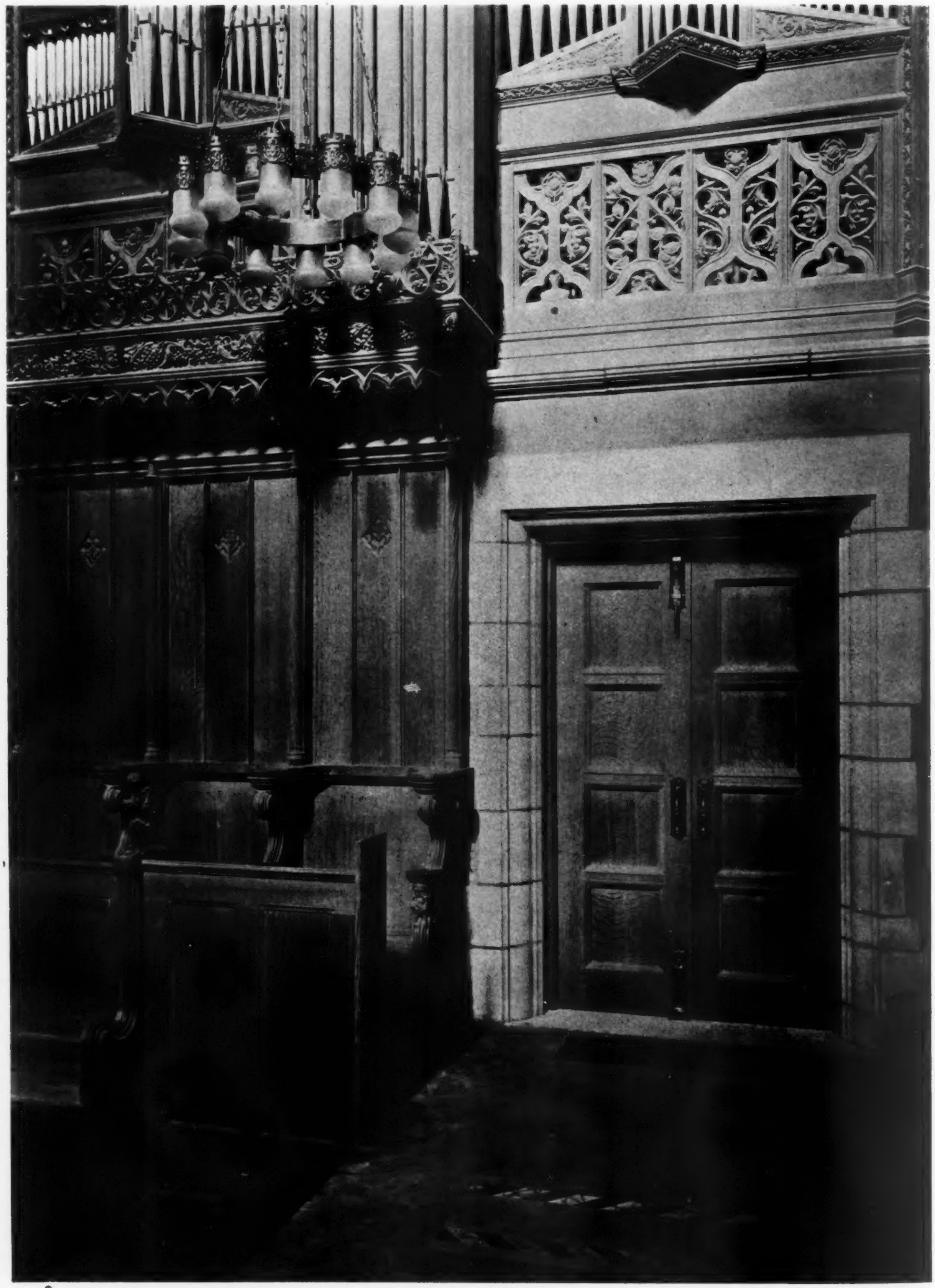

CHOIR STALLS, CHAPEL OF THE INTERCESSION, NEW YORK

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VICAR'S STALL, ST. THOMAS'S CHURCH, NEW YORK

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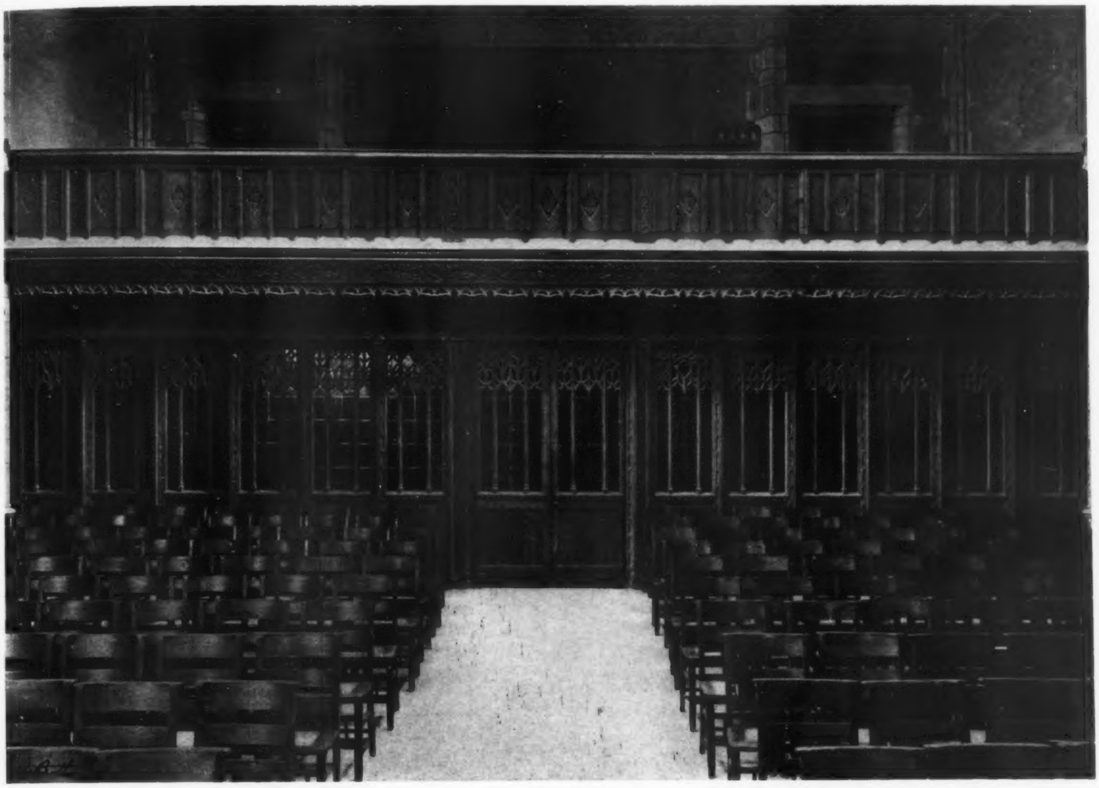
DETAIL OF SCREEN IN MORNING CHAPEL, CHAPEL OF THE INTERCESSION, NEW YORK

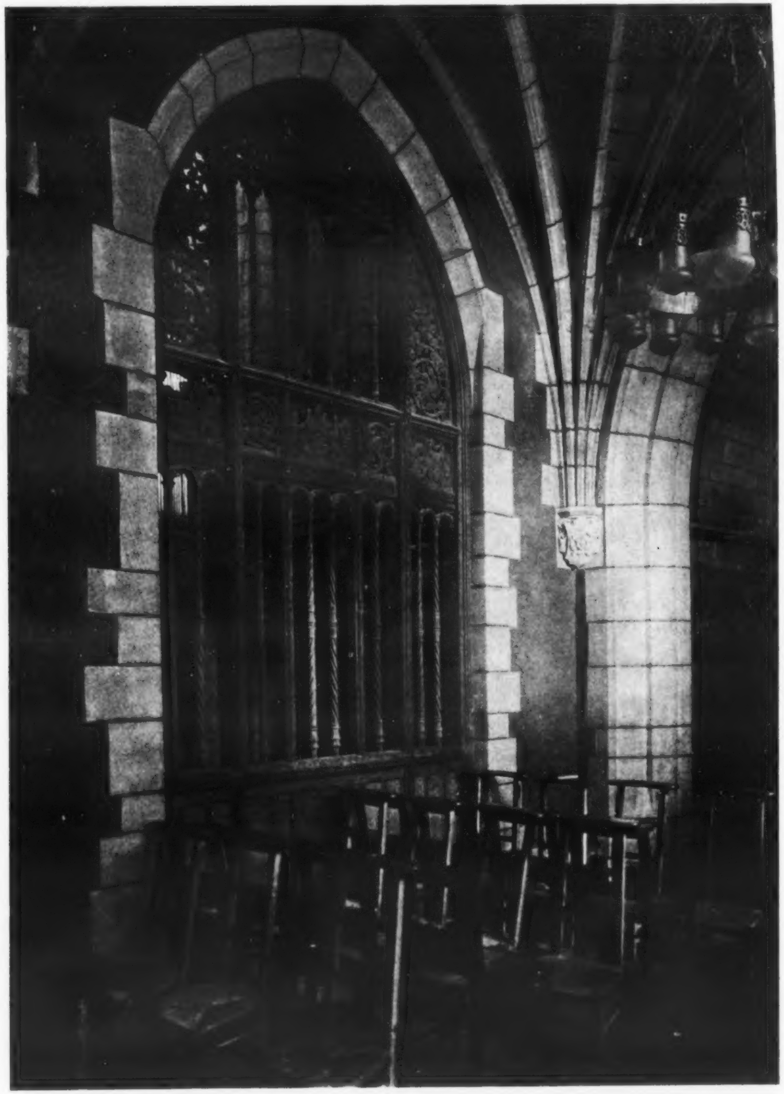
STALLS, ST. JOHN'S CHURCH, WEST HARTFORD, CONN.
MESSRS. CRAM, GOODHUE & FERGUSON (NEW YORK OFFICE), *ARCHITECTS*



NARTHEX SCREEN, CHAPEL OF THE INTERCESSION, NEW YORK

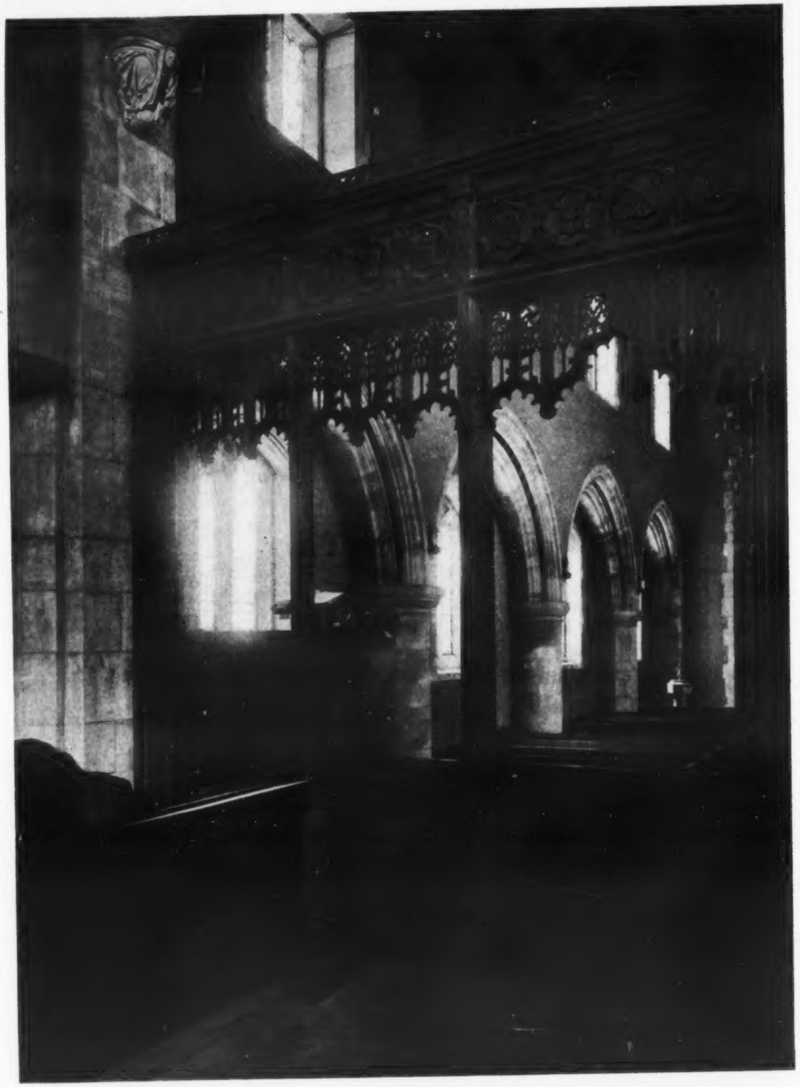
NARTHEX SCREEN, SOUTH CHURCH, NEW YORK
MESSRS. CRAM, GOODHUE & FERGUSON (NEW YORK OFFICE), *ARCHITECTS*

ST. PAUL'S CHURCH, NEW HAVEN, CONN.



MORNING CHAPEL, CHAPEL OF THE INTERCESSION, NEW YORK

MESSRS. CRAM, GOODHUE & FERGUSON (NEW YORK OFFICE), *ARCHITECTS*



SCREEN, CHANCEL SIDE

SCREEN, NAVE SIDE

ST. MARK'S CHURCH, MT. KISCO, NEW YORK

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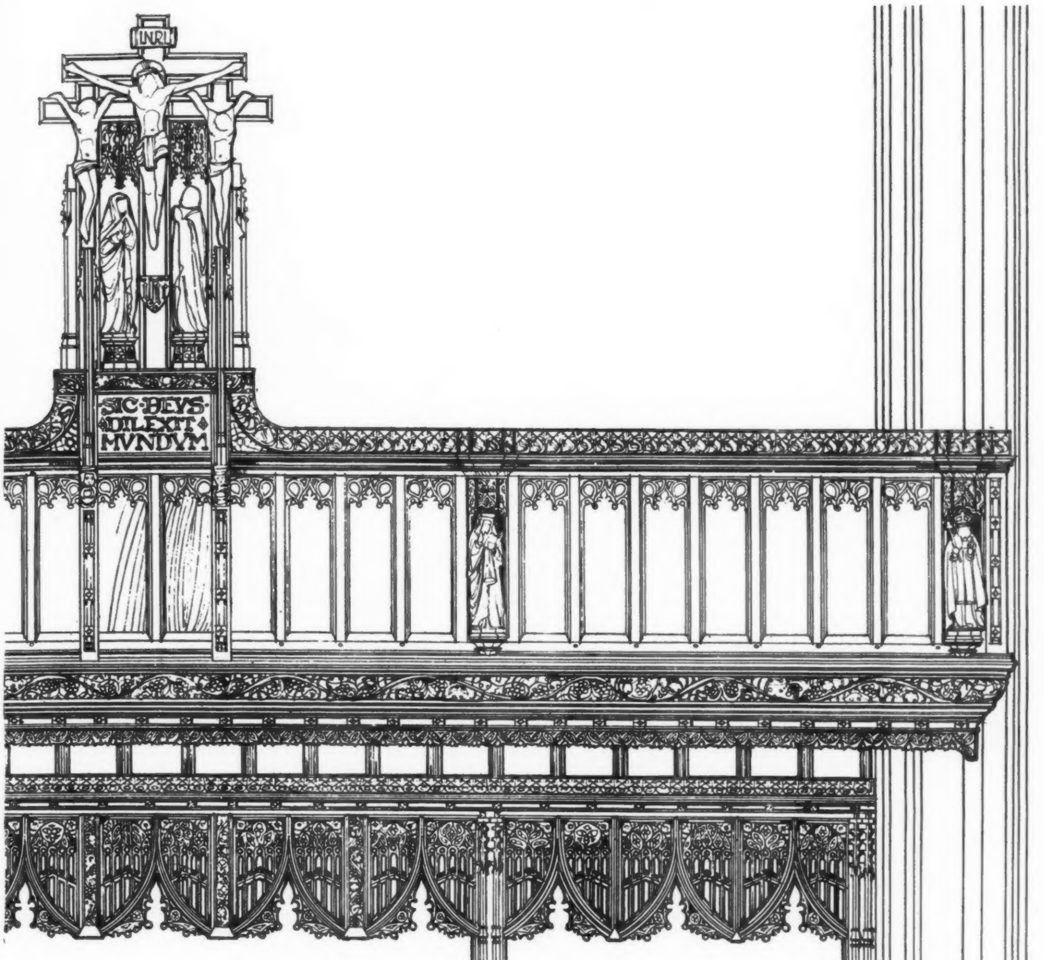
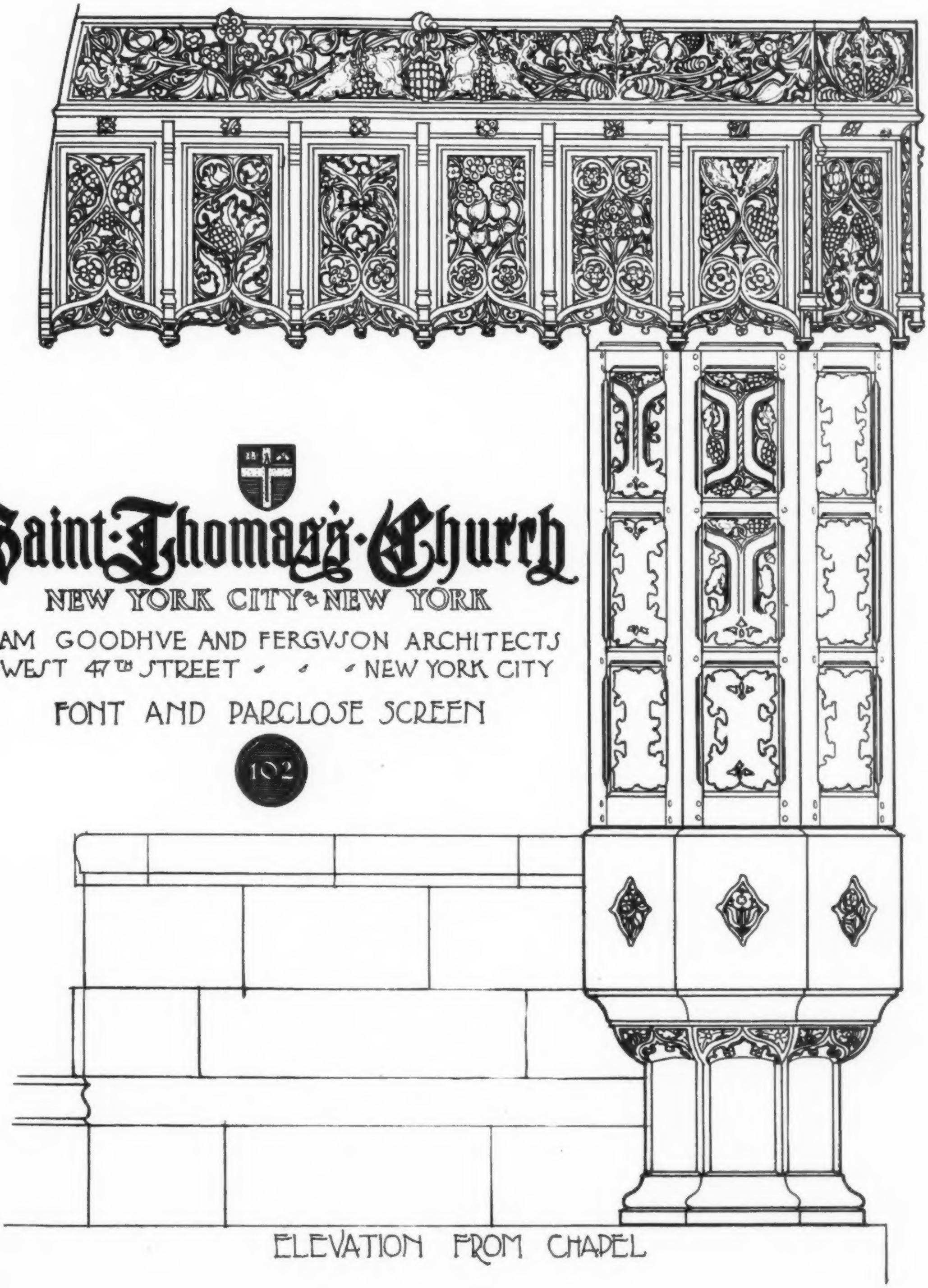


ELEVATION.

ROOD SCREEN AND LOFT, ALL SAINTS' CATHEDRAL, HALIFAX, N. S.

MESSRS. CRAM, GOODHUE & FERGUSON (NEW YORK OFFICE), *ARCHITECTS*


Saint·Thomas's·Church
NEW YORK CITY NEW YORK
CRAM GOODHUE AND FERGUSON ARCHITECTS
2 WEST 47TH STREET NEW YORK CITY
FONT AND PARCLOSE SCREEN
102
ELEVATION FROM CHAPEL

THE AMERICAN ARCHITECT
Founded 1876
PUBLISHED EVERY WEDNESDAY BY
THE AMERICAN ARCHITECT (INC.)
No. 50 Union Square, New York
(Fourth Avenue and 17th Street)
G. E. SLY, President
E. J. ROSENCRANS, Secretary and Treasurer

Address all communications to "The American Architect"

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SINGLE COPIES (Regular Issues), 25 CENTS

CHICAGO OFFICE, Hearst Building
Page A. Robinson, *Western Manager*
Entered at the Post-office, New York, as Second-class Matter

Vol. CV APRIL 15, 1914 No. 1999

A TECHNICAL SERVICE BUREAU

The members of the profession of architecture in this country have recently been informed, through the medium of a four-page advertisement which appeared in "An Architectural Monthly," that a number of individuals more or less intimately identified with the profession have formed a "Bureau of Technical Service" with the avowed purpose of "performing the architect's function for him," especially that portion of it relating to the specification of materials, devices and equipment. According to a statement by the chairman of the Institute's Committee on Contracts and Specifications, "the Bureau springs from the idea that few architects are able to employ specialists capable of preparing accurate and scientific specifications for all the many materials, methods and devices employed in modern construction, but that many architects by combining might employ a corps of such men."

If we assume, as the Bureau does in its advertisement, the incompetence of architects as a class to perform efficiently a service for which they are employed, a system of service guaranteeing efficiency and built with sincerity upon a proper plan would seem to be of very great value, not only to the profession—for the benefit of which it is presumably primarily intended—but also to the client.

To those, however, who would like to believe that the corps of technical experts now, or hereafter to become, connected with this Bureau is employed to give disinterested professional advice to the architect, it is somewhat disconcerting to find that all practicing architects, the putative employers of this service, "are invited to enroll with the Bureau and to avail themselves of its facilities, absolutely without cost or obligation of any sort." The expense of the Bureau, including salaries for the six managing directors, and for the investigators employed or to be employed by them, will be defrayed for the present, at least, wholly by the manufacturer, or his agent, whose products are investigated and recommended for the use of the architect.

Under such a system of "expert professional service," it is obvious that even a manufacturer whose goods have stood the test of long service, and who employs the best technicians, in constantly increasing the efficiency of his product, would be obliged to pay a fee to the architect's expert, or be ignored by him in his recommendations. Certainly, as one of its promoters stated to the writer, the Bureau, if successful, will be possessed of a very efficient means of influencing manufacturers' patronage. This is the system of service that, it appears, is intended by the newly formed Bureau, which now seeks to vindicate its ethics by enlisting the support and co-operation of the American Institute of Architects. It is inconceivable, however, that this professional body could even tacitly countenance in a Bureau a system of practice against which it has so often cautioned its own members. When, in the past, an architect has not had a Bureau to "perform his functions for him," he has endeavored to recommend to his client a material or device which, in his opinion, is most suitable to the conditions imposed. But, in its code of ethics, the Institute has stated as a cardinal principle, that the architect should not receive any commissions or any substantial service from a contractor, or from any interested person other than his client. This admonition by the Institute is obviously intended for the protection of the client, and the maintenance of professional honor by the practitioner.

Also, if an individual architect were to employ an individual expert to investigate several brands of a given material with the intention of selecting meritorious makes for possible use, the expert would not only be expected to receive compensation from his employer for any service rendered, but he would be considered by most persons grossly dishonorable to his trust if he investigated and recommended to his employer only those materials produced by manufacturers who consented to pay him, directly or indirectly, a substantial fee.

The Bureau, as a professional adviser to the architect, becomes in effect his employee, or member of his corps of assistants. It would seem, therefore, that the Bureau should partake of the same relations to the client as its employer, the architect. No architect of standing would knowingly permit a member of his organization to accept, directly or indirectly, anything of value from a manufacturer.

It appears, therefore, that the Bureau's plan of operation is fundamentally wrong in the matter of "means of support." Should the Institute in any wise countenance or co-operate with a theoretically professional organization depending in whole or in part for its maintenance upon commissions or substantial service from any interested party other than its client, the architect, the Institute would be placed in a position at once illogical and detrimental to professional honor.

The chairman of the Institute committee on Contracts and Specifications admits "it appears to most architects a defect of the Bureau's system that it depends for its operation upon the financial support of manufacturers. Its position would be more independent and stronger if it were maintained solely by architects, but those in charge of it feel that, until the Bureau has demonstrated its value to the profession, they cannot ask architects to bear any part of the expenses of its operation; but they hope that, when its usefulness is recognized, architects will be glad to pay for its services."

To state that at some future time the Bureau expects to change its plan of operation and secure its support from the architects who make use of its services, is as immaterial to present judgment of the organization as would be a statement of an offender against the laws that he expected to reform when be became fifty years of age. If, however, the Bureau would now at the beginning of its career revise its plan of operation and secure its maintenance strictly in accord with the idea stated by the chairman of the Institute's Committee on Contracts and Specifications, and in entire harmony with the Institute's own code of ethics, it should find a very broad field of service and merit the support of the entire profession.

RECENT LEGAL DECISIONS

SUPERINTENDING REPAIRS—COMPENSATION

An owner requested a builder to give him an estimate in writing as to what it would cost to make certain repairs on his house. The builder agreed to do this work for a certain sum. The owner then told him to go ahead and do the work. He started upon it, and a few days afterwards the owner instructed him to make other changes and alterations. It was held that the builder could not recover a commission for superintending the work which he had estimated for, though he could recover a commission for superintending the additional work ordered.

Beggs v. Shelton (Mo.), 155 S. W. 885.

LIABILITY OF OWNER ON CONTRACT

An owner who has fully complied upon his part with the terms of a valid building contract cannot be compelled to pay anything in excess of the contract price. When such an owner completes the building in accordance with the original plans, because of abandonment by the contractor, he must, under California Code Civ. Prc. ‡1200, be allowed credit for what he has necessarily and reasonably expended in so doing.

Growall v. Pacific Surety Co., California Supreme Court, 131 Pac. 83.

(*Continued from page* 172)

addresses his people, he has merely to turn in his stall. The present position of the officiating minister behind the chancel arch tends to blanket his voice, making it impossible for him to really lead the congregation.

As to the order of precedence in the stalls: —the rector occupies the first stall, on the right, or decani, as you enter the choir; the first seat on the left, or cantoris, is occupied by the curate, the second seat on the right by the assistant curate and so on alternately. The precentor occupies the last stall on the decani side.

The number of stalls will, of course, depend on the size of the church; but in general, our choirs are unnecessarily large. If we were sufficiently musical to have good congregational singing, we should need very small choirs indeed; but even where we cannot depend upon the congregation, a small, well trained choir, with plenty of space in the chancel, is infinitely to be preferred to a crowd.

The wall stalls should be elevated several steps above the choir floor for æsthetic as well as acoustic reasons. Where there are two rows, the lower stalls may be elevated one step; but where three rows are necessary, it is better to have the first row on the choir floor level.

At Durham the first row of stalls is set up one step, the second up four steps. At Lincoln, the third row is two feet six inches above the floor. At Henry VII's Chapel the wall stalls are raised six steps above those on the floor; and the book rests of the wall stalls form the canopies of the front row of stalls, but canopied lower stalls are rare. Usually they are long pews with no division from end to end,—the decoration is concentrated on the ends which were made as rich as funds permitted. Here, as in the misereres, the mediæval carvers allowed their fancy to play, and the tops were frequently surmounted by figures. On the ends of the Buffalo stalls are carved the four patrons of church music: St. Gregory, St. Ambrose, St. Augustine of Canterbury and St. Wilfrid. The book desks also were enriched. But ordinarily there is only money enough to add ornament to the wall stalls, leaving the book desks plain. Duluth is a good example of a simple form.

The book desk should be generously wide, eleven inches if possible, not a book rack; and there should be a second shelf to hold all books not actually in use. It is more convenient if this can be divided into sections, one for each chorister, for each chorister should have his own book, these being plainly stamped Decani 1, Decani 2, Cantoris 1, etc., the boys being only allowed to use books stamped "Boys." The desk for boys should not be higher than two feet four inches, or, at most, two feet six inches; for men, two feet, nine inches. Where the choir is crowded the boys' desks may be omitted, a strip of dark matting being placed for them to kneel on. The boys should not sit crowded together, twenty inches per boy being the minimum. Twenty-two inches for the men, and twenty-four for the clergy is as little as can be allowed. The seat should be from fourteen to sixteen inches deep. If possible the benches should not be nearer than three feet back to back, the stalls three feet three inches. No metal or sharp corners should be permitted that may catch the vestments. It is a pleasure to run your hand over the baskets of fruit which ornament the parapet posts at Buffalo, so smooth are these.

The wall stalls are individual, separated by arms; and were usually canopied. In poorly warmed churches, with a strong down draught from the cold triforium, these canopies were necessary to protect the heads of the clergy during the long hours of service. The seats are usually about one foot four inches above the floor and should be generously spaced. Those of the Intercession are two feet four inches on centre and seventeen and one-half inches deep. The arms are usually about three feet six from the floor and frequently slope down toward the back to add to their comfort. There is sometimes a small leaf or animal placed lower down that forms a hand rest. The backs also were given a marked slope for comfort's sake.

The Intercession stalls are capped by an elaborately carved continuous canopy, the strongly marked horizontal shadow of which carries the eye back into the chancel. At the entrance to the chancel this is topped by more elaborate canopies, marking the rector's and vicar's stalls. The canopy of the rector's stall, that adjoining the pulpit, is supported by delicately moulded colonettes and traceried side shields. On the backs of these stalls are carved the arms of Trinity Parish and of its Chapel of the Intercession. Each of these stalls are also provided with separate kneelers. It was not possible here to have the misereres elaborately carved as they were in the Middle Ages, but under the hand rest of each stall is carved supporting figures, masses of foliage, etc., each differing from the others. It is unfortunate that the lower stalls from the old church had to be used, so different are they in character from the rest of the woodwork; but this is a temporary arrangement. Being intended for a chapel the canopies of the Buffalo stalls are less formal in character and for that reason are perhaps more interesting. The conventionalized vine detail is especially good.

The final development of the English stalls show each surmounted by its own canopy. In Manchester, Henry VII's Chapel and Windsor, these were amazingly complex and beautiful; and the effectiveness of this lace-like carving cannot be overestimated. But unhappily we can hardly hope to take advantage of their inspirations today, because of the expense. It is difficult for the modern man to realize what a vital part the church played in the life of all classes in the thirteenth and fourteenth centuries, or to appreciate how they lavished their wealth upon it. Mr. Bond gives some interesting figures as to the cost of various stalls taken from actual records, the money values of the thirteenth century being translated into dollars. The canopies alone for St. George's, Windsor, cost $400 each. The stalls for Kings College Chapel cost $60,000; as did those for Henry VII's Chapel, being $475 each. The stalls of Wells cost $90,000, while those of Amiens cost $100,000. The chancel fittings of Exeter Cathedral, not one of the large cathedrals by any means, cost $150,000. How can we hope to rival these today with the cost of production infinitely increased?

DETAIL OF SCREEN, CHAPEL OF THE INTERCESSION, NEW YORK

THE WONDER OF WORK, AS DESCRIBED BY JOSEPH PENNELL

When Mr. Joseph Pennell, on a certain occasion addressed the Architectural Association of London on "The Pictorial Possibilities of Labor," we printed in these columns, as an example of splendid descriptive phrasing and a just tribute to the artistic possibilities in this country, a copious extract from Mr. Pennell's address.

On March 16th last, Mr. Pennell again addressed the Association, taking for his topic "The Wonder of Work," which in a sense supplemented the earlier address.

Combining with rare execution as an artist, a scholarly appreciation and ability to see things in their most artistic phase, Mr. Pennell, as will be inferred, stirred his hearers to a high point of enthusiasm.

Referring to his recent visit to the Panama Canal, he spoke in part as follows:

"I went to Panama because I believed that in the making of the greatest work of modern time I should find my greatest inspiration.

"The day I landed in Colon I found it. I had seen great cranes at Pittsburg and Duisberg, but nothing like that which stretched its great arm, with great claws, over the sad, silent swamp of Mount Hope—the end of De Lessep's dream. I had seen in New York, as I sat on the thirtieth story of the Metropolitan Building, a chain come up from below with a man clinging to it. But I had never imagined anything like the group of figures which rose out of Gatun Lock at dinner-time. I had looked into chasms and gulfs, but I never imagined anything so terrific as the gates of Pedro Miguel. I had seen the greatest walls of the oldest cities, but I never imagined anything so imposing as the walls of Miraflores Lock. I had seen the great aqueducts and great arches of the world, but I never imagined anything like the approaches to Gatun and the spring of Pedro Miguel, made by army officers and civil engineers mainly to save material. For there are no architects, no designers, no decorators on the Panama Canal—just engineers and organizers—Goethals, Gaillard, Gorgas, Williamson, Bishop, and more. But the engineers at Panama are great designers, and great work is great decoration.

"Almost before I left the canal, artists, architects, and decorators were on their way there. I hope it may interest them half as much as it interested me.

"On the canal I found the subjects I wanted—subjects I shall never find again—and it will always be a delight to me that I went—went on my own initiative and not at anyone's bidding. I shall probably never see the canal again, but I have seen it and drawn it as well as I could, and I am glad I went, for it is the most wonderful Wonder of Work in the world.

"We have recently been told that art will disappear in fifty years (by a person who says he will call his last book—with possible appropriateness — 'Vale'). But, though he will disappear, and Post-Impressionism will be swallowed up in shopkeeping, and though the mustard pot has gone with the soulful doggie, and the tearful baby rival of the Dresden Madonna, the artist who has something to say in his own way about his own time, and can say it, will live, and his work will live, with Rembrandt, Velasquez, Franz Hals, Meunier, and Whistler—artists who painted and drew the work and life about them, carrying on tradition and never regretted the past. And art which shows life and work will never die, for such art is everlasting, undying—'The Science of the Beautiful.' "

SAFETY OF ANTWERP TOWER THREATENED

It has been discovered that the tower of the Gothic Cathedral of Antwerp, 400 feet high and an architectural landmark, is in an insecure condition. The work of renovation, which will be both difficult and hazardous, has been entrusted to a commission of experts. It has not yet been definitely determined whether the structure can be repaired from the interior, or if it will be necessary to demolish the belfry and rebuild it.

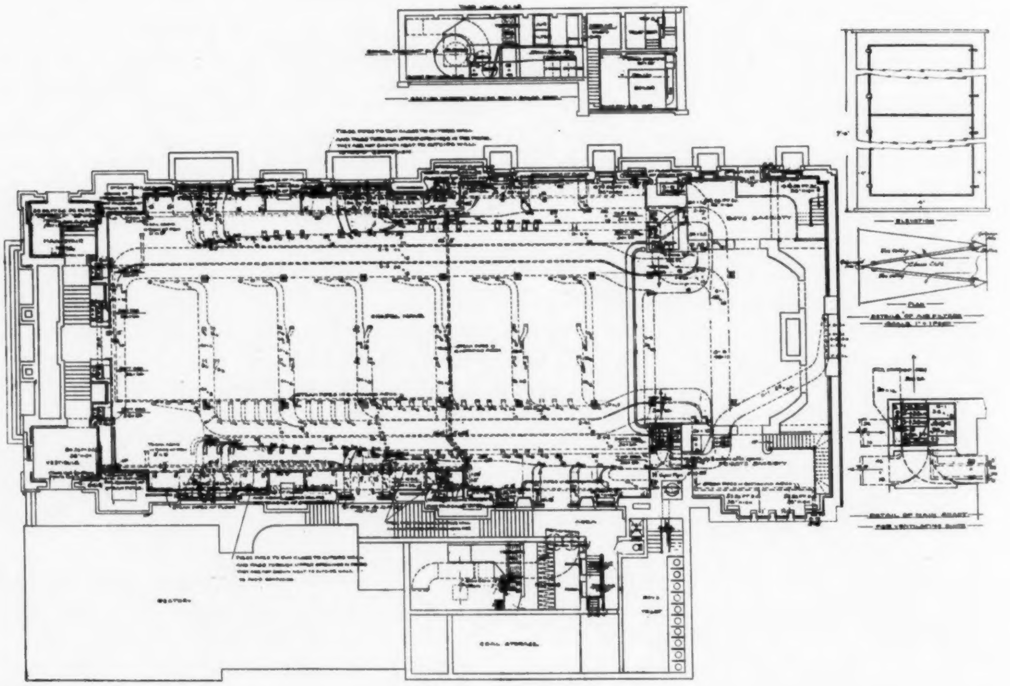
While the restoration of this historic landmark will be costly, the spirit of local public pride dictates that no efforts shall be spared to preserve so splendid a specimen of fourteenth century work.

ENGINEERING AND MECHANICAL DEPARTMENT

VENTILATION OF ST. PATRICK'S CHURCH, PHILADELPHIA

The ventilating system installed in St. Patrick's Church, Philadelphia, consists of a fresh air supply for the church and chapel, which is secured by means of a fan in connection with a tempering coil, located in the basement of the building, and exhaust ventilation for the above rooms by means of a disc fan located in the roof space.

The system of fresh air supply as laid out comprises two distinct units. The largest of these consists of a set of tempered air ducts and flues which connect the outlet of the fan with the air supply registers in the church proper and with the recesses below the church windows.



BASEMENT PLAN

The other unit supplies fresh air to the registers in the chapel through a similar set of ducts and flues.

The blast wheel of the fresh air fan is six feet six inches in diameter by three feet six inches wide. The fan is encased in a steel plate housing, designed with special inlets and outlets to meet the space conditions, and is driven by a direct-connected nine horse power motor at a maximum speed of 180 revolutions per minute.

The tempering coils used in connection with the fan are of the mitre type containing 914 square feet of heating surface made up of seven two-row sections, six feet six inches wide by five feet high, the coils having a total depth of fourteen rows.

The sections are made up of one-inch pipe, screwed into separate cast-iron headers, six inches wide, on steam and return ends, so arranged as to secure a positive circulation of steam.

A jacket of steel plate, No. 10 gauge, encloses the tempering coil, extending from the fresh air room to the inlets of the fan. A number of air filters, consisting of galvanized iron netting covered with cheese cloth set in wooden frames of convenient size, are employed in the fresh air chamber for the purpose of filtering the incoming air. These filters have a total area of 675 square feet. The wooden frames are supported by a frame work of galvanized iron fastened to the floor and ceiling of the fresh air chamber, so as to resist air pressure.

The exhaust fan, which is located in the roof space, is a sixty inch diameter disc fan set in a circular frame. The fan is driven by a seven horse power direct-connected motor at a maximum speed of 300 revolutions per minute.

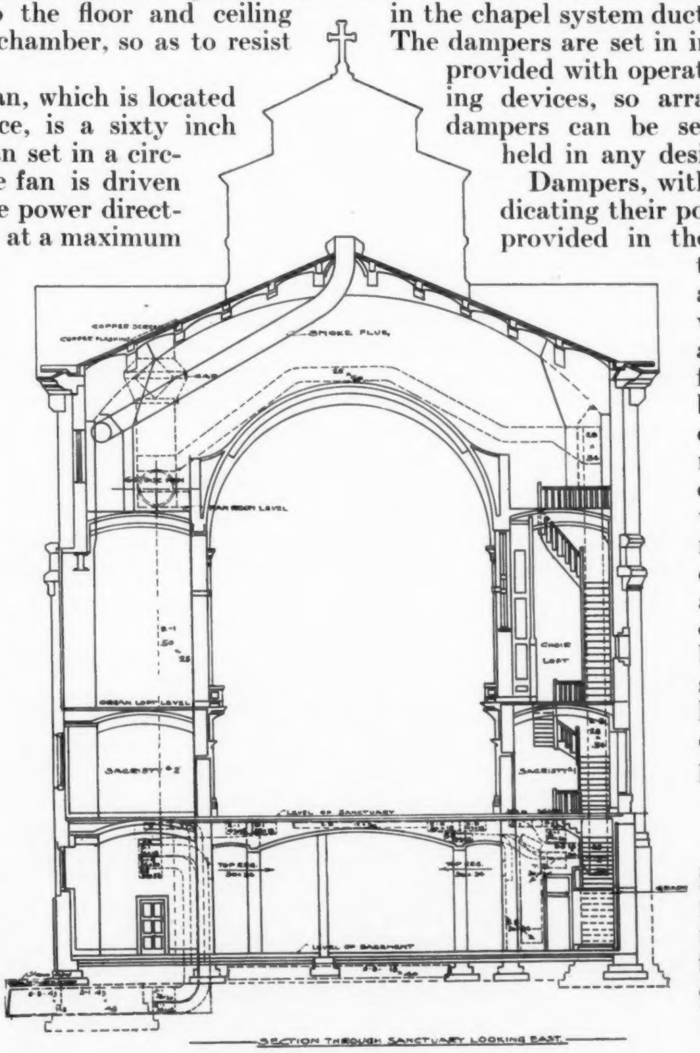
This fan and motor are supported on a special foundation frame, consisting of a six inch thick plank frame set on two layers of compressed cork, each two inches thick, which is fastened to the building construction in a manner designed to prevent the transmission of sound and vibration.

The air discharge duct extending from this fan terminates with a protective hood of No. 20 gauge galvanized iron. This hood, which is located below the roof, is specially constructed and is provided with a twenty-four ounce copper extension and gutter, having soldered water-tight joints.

The ducts are designed with curves and bends so as to effect an easy flow of air. Steel plate double dampers are placed in the main fresh tempered air supply ducts leading to the church and chapel, and in the main ducts from the church and chapel exhaust systems.

These dampers are connected together in such a manner that the damper in the church system duct will be opened with the same motion which closes the damper in the chapel system duct, and *vice versa*. The dampers are set in iron frames and provided with operating and fastening devices, so arranged that the dampers can be set and securely held in any desired position.

Dampers, with quadrants indicating their position, are also provided in the duct connections leading to and from individual supply and exhaust flues and branches, except in those run in the tile construction, which cannot be reached. In addition, adjustable slide dampers are provided back of the air supply registers located in the ends of the pews.



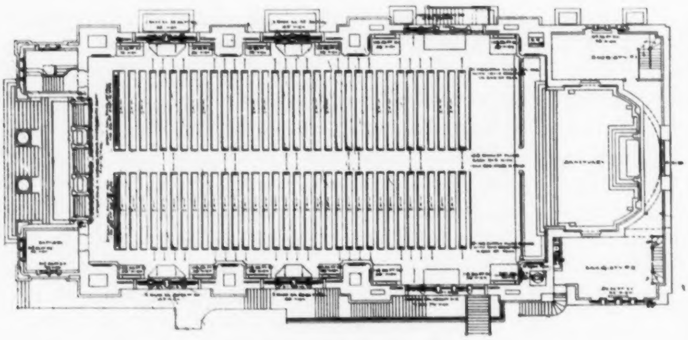
SECTION THROUGH SANCTUARY LOOKING EAST

HEATING

The building is heated by means of two forty-eight inch fourteen-section cast iron steam boilers.

The piping system is ar

ranged so as to secure the return of the water of condensation to the boilers by gravity. The horizontal return mains are run below the water level of the boilers, so as to obtain a sealed return for the branches from risers; any dry returns and branches at ceiling or in trenches are run separately to a point below the water level.



FIRST FLOOR PLAN

Radiator connections from risers are run under the finished floor, except the connections for the radiators in the chapel connecting with exposed mains, and such radiator connections as are run in the arches of the tile construction.

Radiator connections underneath concrete, mosaic or similar floors are run in trenches.

The temperature of the church is controlled by a system of temperature regulation, there being forty-three heat sources controlled by fifteen thermostats.

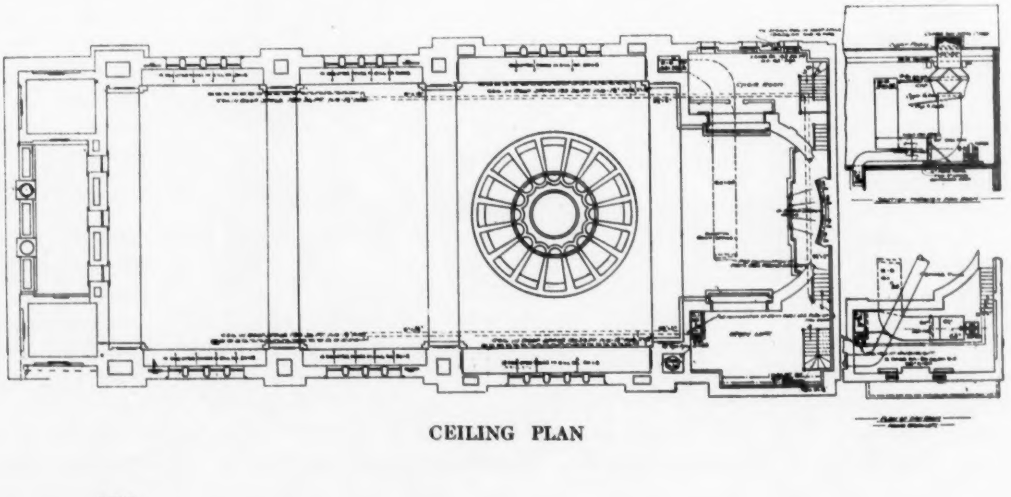
The direct heating surfaces in the rooms are controlled by diaphragm valves on steam and return ends of radiators, coils, etc.

The coils over the entrance and the radiators in the recesses below the church windows are controlled by a cold air thermostat exposed to the atmosphere. This thermostat automatically shuts off the diaphragm valves on the steam and return pipes when the external air rises to a certain degree, and again opens the valves when the temperature drops below this degree; thus securing a continuous heating effect for the purpose of counteracting down drafts in the coldest weather.

The four inside sections of the tempering coils are controlled by a hot air thermostat, located in the tempered air duct, automatically operating the diaphragm valves on the steam and return pipes as required to maintain the temperature of the air in the duct at the desired degree.

The three outside sections of the tempering coils are controlled by a cold air thermostat, located in the fresh air inlet, which operates in a similar manner.

The church was designed by La Farge & Morris, architects. The consulting engineers for the heating and ventilating work were Nygren, Tenny & Ohmes.



CEILING PLAN

CURRENT NEWS AND COMMENT

BROOKLYN CHAPTER, A.I.A.

A recent exhibition by the Brooklyn Chapter of the American Institute of Architects was held in the room of the Brooklyn Club on Remsen Street. The exhibition was well attended and the outcome satisfactory to those who promoted it. The chairman of the committee in charge of the exhibit was Mr. John B. Slee.

A PROPOSED COMPETITION

We learn from a local paper that it is proposed to hold, in the early future, a competition for a group of hospital buildings to be erected in Paterson, N. J.

The city officials, it is stated, are in conference with the officers of the New Jersey State Chapter of the American Institute of Architects, and it is the expectation that a programme will be outlined and a competition conducted under the rules of the Institute.

At present the matter is in indefinite shape. Any information must be secured by reference to the Hospital Commission, Paterson, N. J.

CLAIMS CRAFTSMANSHIP IS DYING

William L. Price in a recent paper read before the Philadelphia T-square Club, described the trend of modern architecture as toward diagrams and away from craftsmanship. There was a tendency, he claimed, in studying the work of the Old World architects, to find out what they did, rather than what they wrought. He said: "We lack sincerity in our present day expression. We detail our high buildings as if every foot were directly before us, while we should consider that the base, to be successful, must be treated to be seen from across the street, and the towering top from across the city.

"And what of our ornament? It is to produce color and values, and we add ornament and projections simply to obtain the color resulting from the contrast of light and shade. Yet even this process fails when these details are so far removed from the eye that the effects are lost through atmosphere. The forms become unintelligible and the color dissipated. Then why not, to get the effect we strive for, adopt the use of ceramics? It is true that at a distance color and fine detail will not combine, and detail alone is lost in indefiniteness. Color alone we can fall back upon. Then when we make use of this judiciously, applying it in such mass and tones as successfully combine to produce a harmonious feature in design, we will arrive at a successful architectural treatment of our high structures. There is vast opportunity still to express our architecture as a living art. The educated man's idea of art is to pursue the art that has been, while the artist and craftsman are forever searching for the art that is going to be." —*Exchange.*

THE RESPONSIBILITIES OF CUSTODIANSHIP

The Builder of London, referring editorially in a recent issue to the incident of the slashing of Valesquez's Rokeby Venus, comments on the inadequacy of the laws in England to protect works of art from damage or total destruction, comments as follows:

"We notice that the judge at the London Sessions in sentencing a woman to six months' imprisonment for damaging the Rokeby Venus is reported to have said that he quite realized the sentence was thoroughly inadequate to the crime, but that it was the maximum sentence prescribed by the law for damaging works of art. Had it been a window he could have passed a sentence of eighteen months' imprisonment. It is not quite clear what occurs when the damaged work of art happens to be a window, also, as was the case at the church in Smith-square, Westminster, where antique stained glass was damaged by explosion. If the perpetrator of this senseless outrage should ever be discovered it is to be hoped that he or she will be charged with damaging a window and not a work of art, and punished accordingly. But it is time that the law was altered, and that works of art were given protection more in accordance with their value to humanity. In this matter we are not only acting as owners of property valuable to ourselves, but also as trustees for the whole civilized world and for future generations as well."

CALIFORNIA STATE BOARD OF ARCHITECTURE TAKES STEPS TO PREVENT ILLEGAL PRACTICES

The first arrest by the California State Board of Architecture, for illegal practice, has occurred, and the case is now in court. It is stated that the State Board intends to make a thorough investigation of the architectural field, and will weed out all illegal practitioners. The attorney to the commission has received instructions, it is stated, to proceed vigorously against all persons practicing architecture without the necessary certificate issued by the State Board.

PERSONAL

Messrs. Foote & Headley, architects, Rochester, N. Y., announce their removal to new offices in the Carter Building, corner of State and Church Streets.

E. T. VonKnopke, architect, and J. M. O'Donnell, structural engineer, have formed a copartnership, and will practice their professions with offices in the Scherer Building, Detroit, Mich.

They desire to receive manufacturers' samples and catalogues.

BOOK NOTES

AMERICAN STUDENT COMPETITIONS, 1912-1913. Thirty-six plates, size eight by twelve inches, printed in half-tone on heavy dull-coated paper. Twelve pages of competition programs contained in paper portfolio. Philadelphia: Stanton and Mann. Price, $2.50.

The work of American schools in architectural design has reached a degree of merit that challenges comparison with the work of students of similar experience in any other country. In this first issue of a projected series of portfolios, the publishers have presented many of the premiated designs submitted in the more important student competitions of the last school-year. These plates represent the best efforts of students who have benefited by the instruction of eminent French and American critics, and are therefore to be regarded as representative examples of academic design.

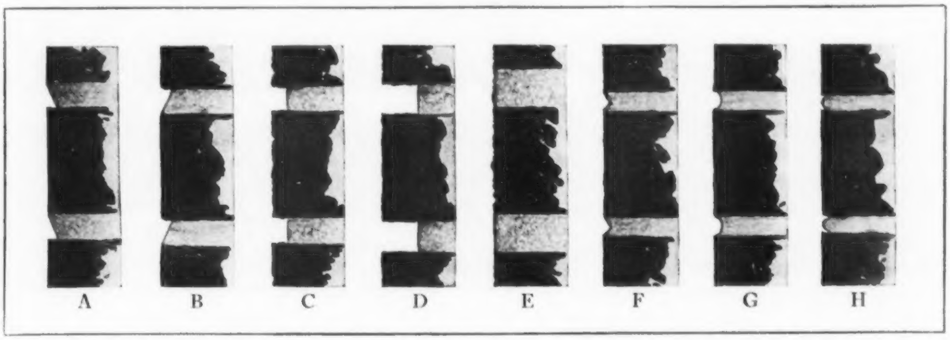
The competitions illustrated were those held in 1912-13 under the auspices of the American Academy in Rome, the Interscholastic Architectural Federation, the Society of Beaux-Arts Architects for the Tenth Paris Prize, the Warren Prize, the Pupin Prize, and for some of its regular problems in design. Several problems studied by individual schools are also included.

UNDERWRITERS' REQUIREMENTS. By Dana Pierce, B.A. Cloth, 170 pages, five and one-half by eight inches, illustrated. American School of Correspondence, Chicago, Ill., 1913. Price $1.00.

It is well known that the fire insurance companies in America by demanding that all specifications for electric installation be drawn according to the electric code of the National Board of Fire Underwriters have been able to bring about a uniformity of practice, a quality of workmanship and a degree of safety which probably could not have been accomplished in any other way.

The author of this explanatory treatise, by virtue of his connection with the underwriters' laboratories, appears to speak with exceptional authority, and by his comments has clarified many important points in the rules of the code, and has shown the reasons for their adoption. The copious examples and photographic illustrations issued in connection with the text would seem to offer a valuable guide to the best practice in electric wiring installation of all kinds.

INDUSTRIAL INFORMATION

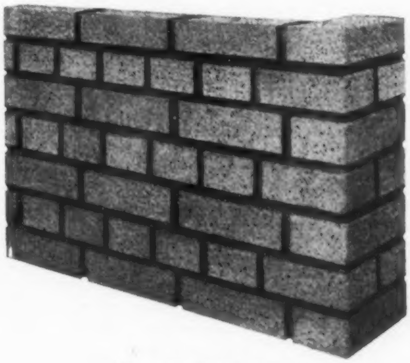


A AND B—STRUCK JOINTS. C—RAKED JOINT. D—SET-BACK OR STRIPPED JOINT. E—ROUGH CUT FLUSH JOINT. F—V-SHAPED. G—ROUNDED. H—BEADED.

BONDS AND MORTARS IN THE WALL OF BRICK

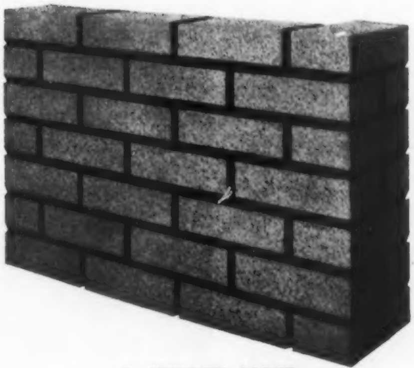
Among all the changes that have taken place in methods of merchandising during recent years there is probably none more apparent, nor for that matter more important than the change in character of "copy" employed in advertising and trade literature. The day of the flamboyant advertisement or pamphlet presenting exaggerated claims of superiority for the product exploited, can be said to have definitely passed wherever the subject has received the careful study and attention to which it

E—ROUGH-CUT FLUSH JOINT



C—RAKED JOINT

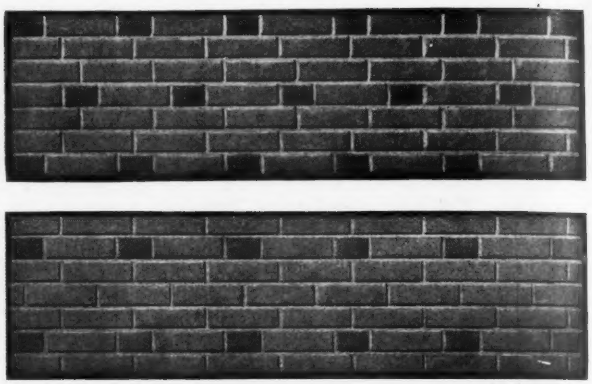
B—WEATHERED JOINT



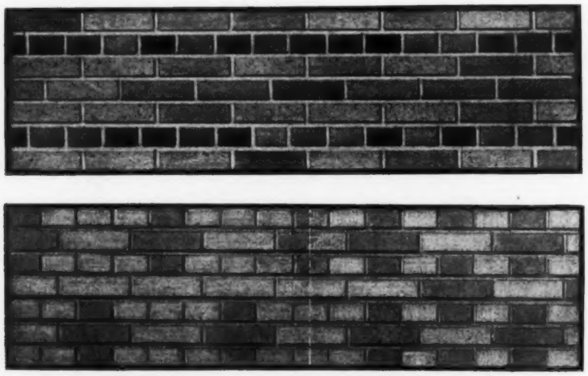
A—STRUCK JOINT

is entitled; and in its place we have the helpful and highly educational advertisement clothed in a variety of forms.

Perhaps a better example of the modern tendency in advertising copy than that presented by the Hydraulic-Press Brick Company, of St. Louis, Mo., in their new booklet entitled "Bonds and Mortars in the Wall of Brick," could not be selected. Here is a work which a few years ago would doubtless have been considered a strictly technical production devoid of advertising value, and yet, judged by present-day standards, we would say that it is valuable to its publishers in exactly the proportion that it is valuable to the users of and designers in brick, which indubitably places it well to the fore among all the really efficient means that have heretofore been employed as an aid to the introduction and further use of any product.



ABOVE—FLEMISH COURSES ALTERNATING WITH TWO COURSES OF STRETCHERS; BELOW—FLEMISH COURSE ALTERNATING WITH THREE ROWS OF STRETCHERS

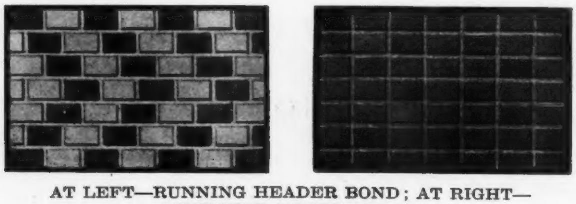


ABOVE—HEADER COURSES WITH THREE INTERVENING STRETCHER COURSES; BELOW—ENGLISH BOND

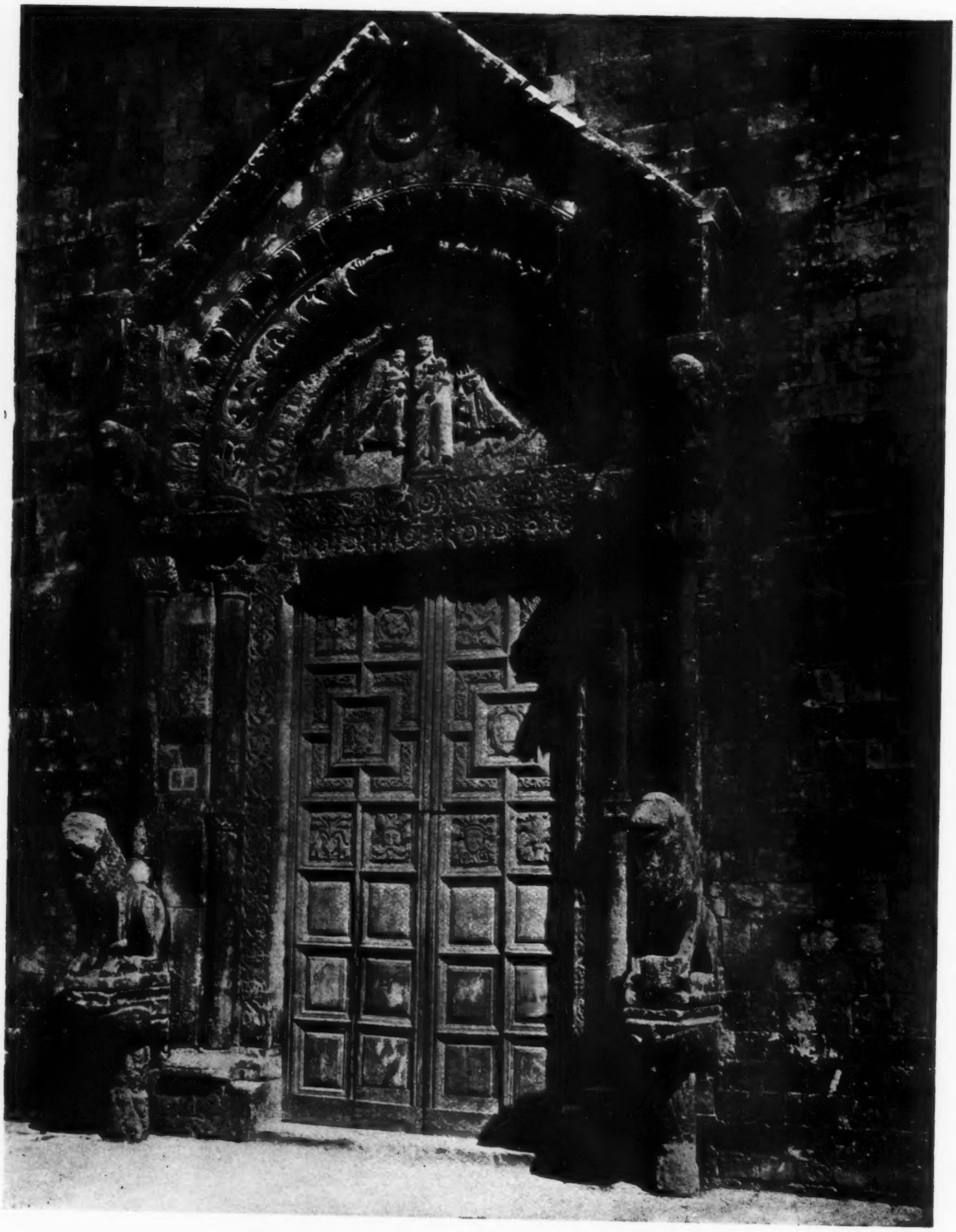
To be specific, the booklet, which consists of some twenty-six pages eight and one-eighth by eleven and one-quarter inches in size, describes and fully illustrates practically every known bond in brickwork with pertinent comment on the advantages or defects of the various forms from a structural viewpoint. Then follow in order illustrated articles on "Bond Pattern Units," "Bond Units in Pattern," "A Bibliography of the Subject of Bonds and Patterns," "Structural Uses of Mortar," "Artistic Effects," "Kinds of Mortar Joints," and "Methods of Using Colored Mortar." The article devoted to "Kinds of Mortar Joints" is illustrated by cuts of eight brick piers laid up with as many varieties of joints. The joints are further shown by detail sectional drawings, and the designation of each is given. Only a few of the illustrations are reproduced herewith.

Taken all in all the work would seem to form an almost indispensable adjunct to an architect's working library. Its use will not only lessen materially the actual labor involved in brick designing, but it will also tend toward the elimination of certain impractical forms and so-called bonds that are unfortunately sometimes evolved through lack of care or study of the subject.

To architects making application to the Hydraulic-Press Brick Co., St. Louis, Mo., the booklet will be sent without charge.



AT LEFT—RUNNING HEADER BOND; AT RIGHT—"CHECKER BOARD" BOND



PRINCIPAL ENTRANCE, CATHEDRAL, CONVERSANO