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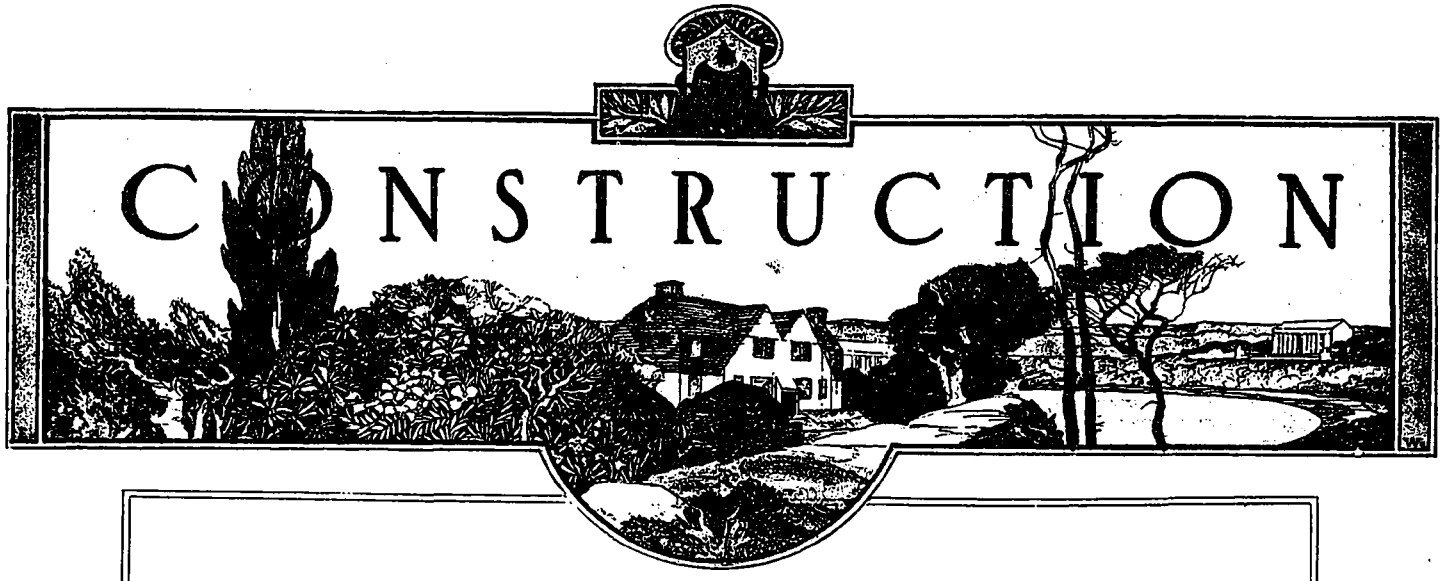

December, 1916 Vol. 9, No. 12

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Full Page Illustrations

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CHURCH OF ST. FRANCIS OF ASSISI, TORONTO, ONT.

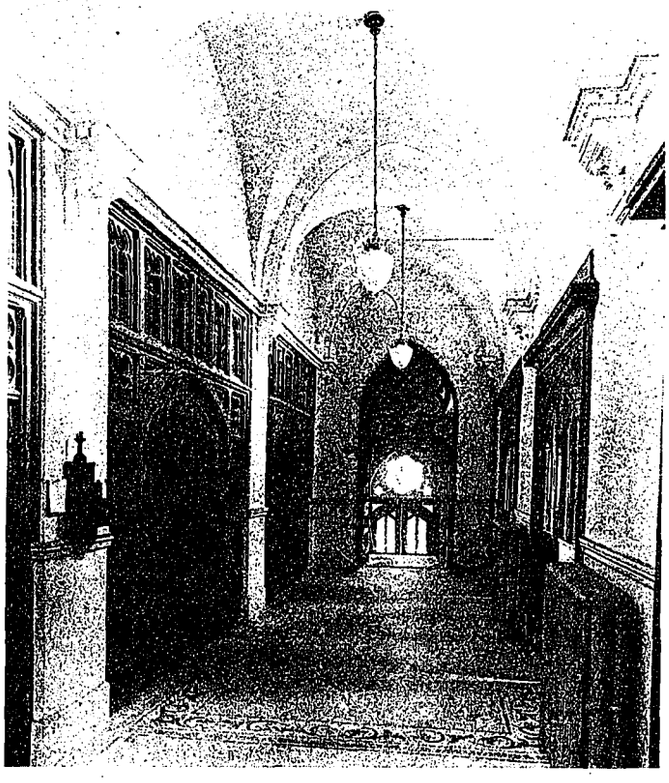
ARTHUR W. HOLMES, ARCHITECT.

Church of St. Francis of Assisi, Toronto, Ont.

THE new Church of St. Francis of Assisi, situated on the corner of Grace street and Mansfield avenue, Toronto, was built to take the place of the smaller brick church at the corner of Grace and Arthur streets, which was erected fifteen years ago by the present pastor, the Rev. W. McCann.

The new church was completed and dedicated by Archbishop McNeil in October, 1915.

The main entrances, facing west, consisting of three large portals, with double doors, lead into a spacious narthex, having marble mosaic floor and vaulted ceiling. From narthex, leading to the nave, are three double swinging doors, corresponding to the main entrance doors. From the narthex is a similar double door, leading into tower, in which are stairways leading to the choir gallery, and also to basement. Two entrances facing Mansfield avenue, and two more on the north, enter on the street level to vestibules, with stairways leading to church, basement and sacristies. The choir gallery is immediately over the narthex.



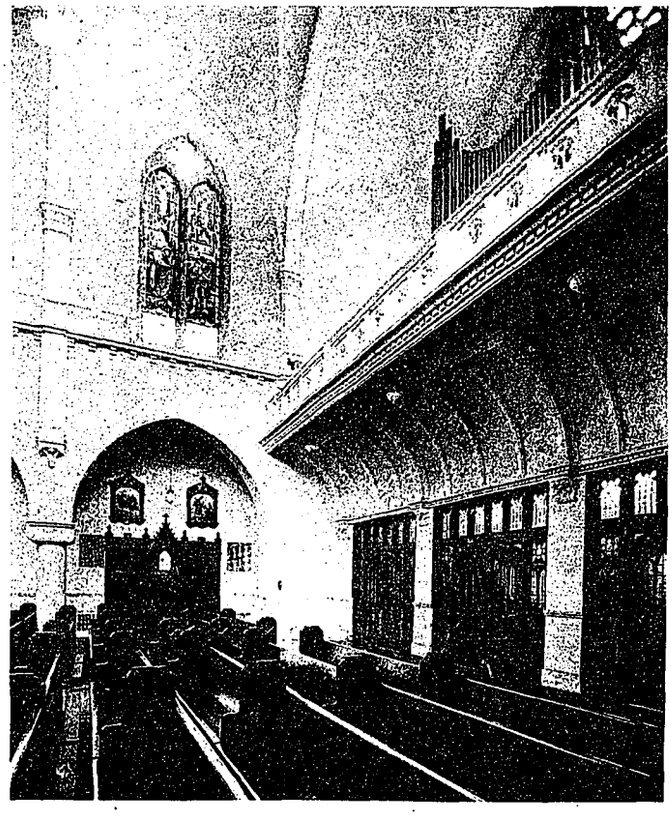
NARTHEX, CHURCH OF ST. FRANCIS OF ASSISI, TORONTO, ONT.

The nave is 40 ft. wide, with a 6 ft. centre passage; the aisles, used for passages only, are 5 ft. wide. The width of church at transepts is 71 ft., and the total length of the church is 156 ft.

The ceilings are vaulted throughout, and are constructed of steel framework suspended from the steel roof trusses, and covered with metal furring and lath.

The wall and ceiling finish is in rough stucco, and the ornamental shafts, arches and groin ribs, corbels, string courses and niches, etc., of "staff."

The niches in the sanctuary contain statues of the four doctors of the church, and the main groin ribs at crossing of the transepts are supported by emblems of the four evangelists.



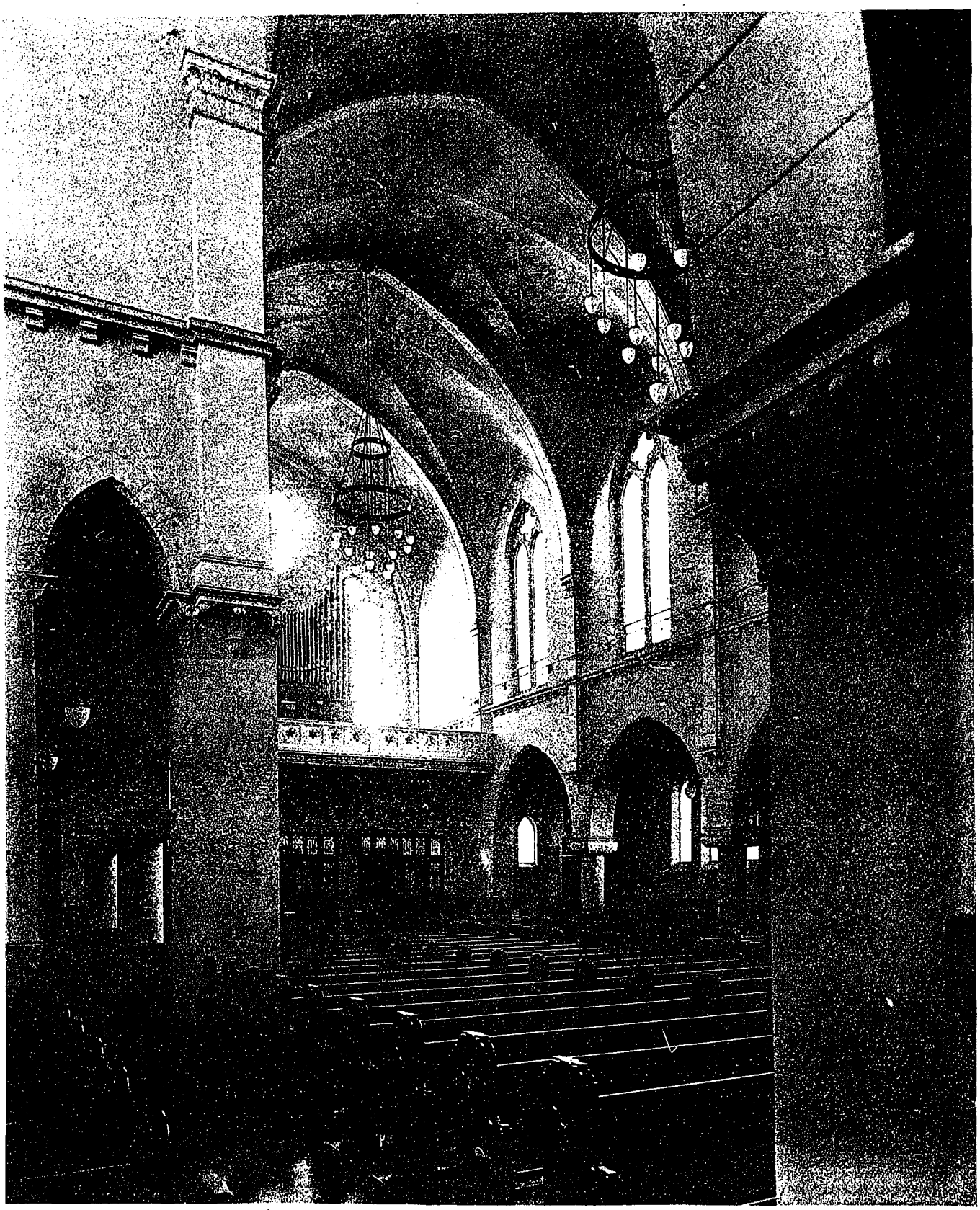
VIEW OF ENTRANCE FROM NAVE, CHURCH OF ST. FRANCIS OF ASSISI, TORONTO, ONT.

An ambulatory around the sanctuary forms communication between the clergy and boys' sacristies.

The tower is 21 ft. square, and 120 ft. high, with an open belfry.

The accommodation of the church is 900, and that of basement, which is used as a parish hall, is of similar capacity. The portion under the sanctuary is utilized for the heating apparatus.

Credit Valley stone is used throughout, with



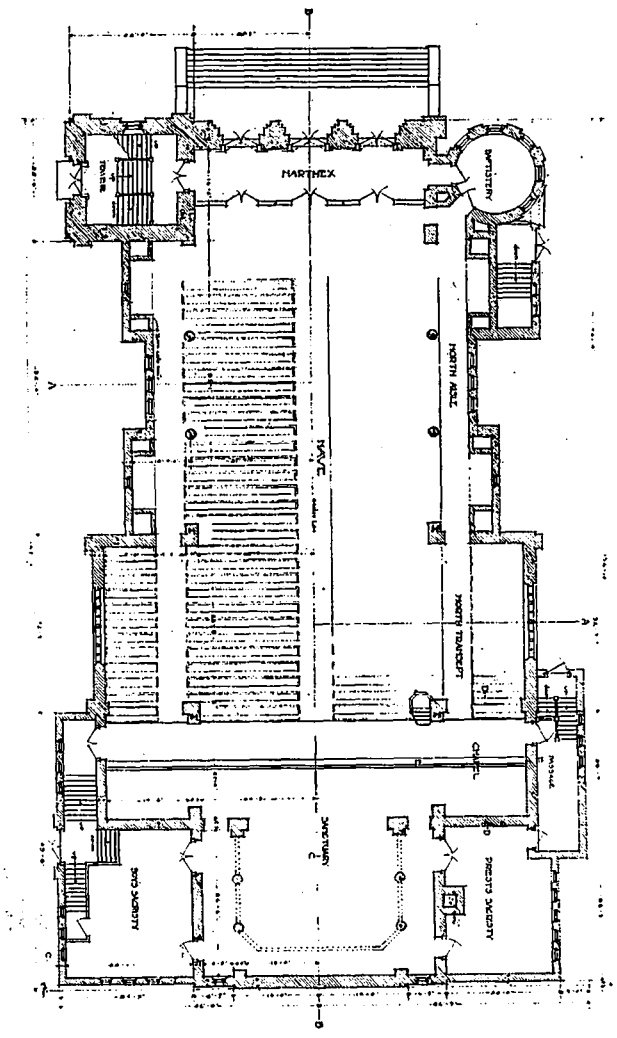
VIEW OF NAVE, AISLE AND GALLERY, CHURCH OF ST. FRANCIS OF ASSISI, TORONTO, ONT. ARTHUR W. HOLMES, ARCHITECT.

Indiana limestone dressings and interior columns, and Roman stone for the window tracery and pinnacles and the niche and statue of St. Francis.

The caps of the interior columns are left rough for future carving.

Protection of Buildings Beyond Established Building Lines

To those who have given attention to the attitude of the courts regarding the question of encroachment of buildings upon streets or public property, it must have become apparent that

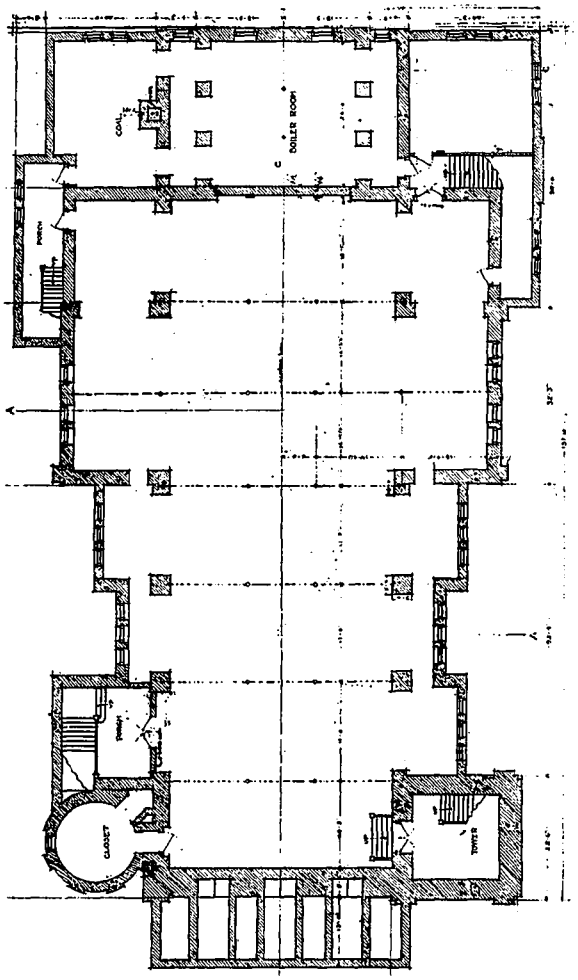


FLOOR PLAN, CHURCH OF ST. FRANCIS OF ASSISI, TORONTO, ONT.

such encroachments are now viewed as of much more serious moment than they were a score of years ago. In fact, it is probably not more than fifteen or twenty years since the city building which did not in some form or manner project beyond the established building line, was the exception. Architects were then in the habit of designing buildings with projecting porticos, bay windows, and even base courses, and these were permitted, in some cases by a lax enforcement of municipal laws, in almost every city of the country. There were, of course, instances where such practice involved the owners, and indirectly the architects, in difficulties that were, for the time at least, embarrassing, but usually an owner or architect confronted with objections on the part of the city was able to carry his point by calling attention to numerous other instances where equally flagrant violations of law had been permitted by the same or preceding administrations without molestation or hindrance of any active character, and demanding equal privileges.

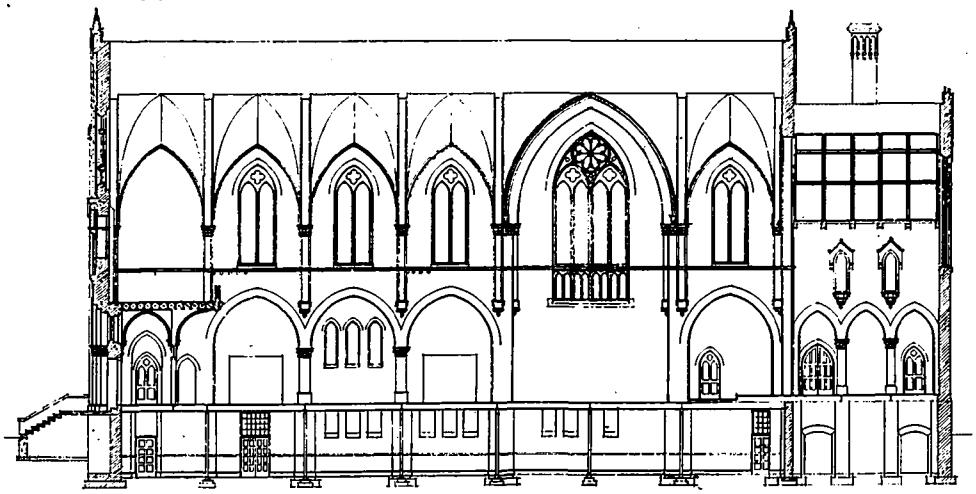
Of course, such practices are always liable to be carried to a point where they cannot longer be tolerated, and this seems to have been the case with the street encroachment abuse. Some half dozen years since, the streets of New York and certain other cities of the country became so congested with traffic that measures for relief seemed to be imperative, and the obvious method to pursue was that of reclaiming the entire street width from building line to building line, a considerable percentage of which was no longer available by reason of various projections beyond the building line, and countless obstructions which had been permitted to accumulate and increase from year to year. In the beginning, efforts to reclaim the streets for the purposes for which they were originally intended, met with much opposition, and instances where owners refused to remove projections previously allowed by the city and tolerated for years without legal action, were numerous, and the cause of much delay and litigation. Gradually, however, the requirements of the public service have been recognized by a majority of property owners, and, as a consequence, less opposition is shown to the widening of streets by the removal of projections each year, and new structures are now being designed and erected well within the property lines established.

The ingenuity of architects, apparently always equal to the requirements, has provided entrances and other features affording all necessary facilities without in any way encroaching beyond the building line, and, moreover, with-



BASEMENT PLAN, CHURCH OF ST. FRANCIS OF ASSISI, TORONTO, ONT.

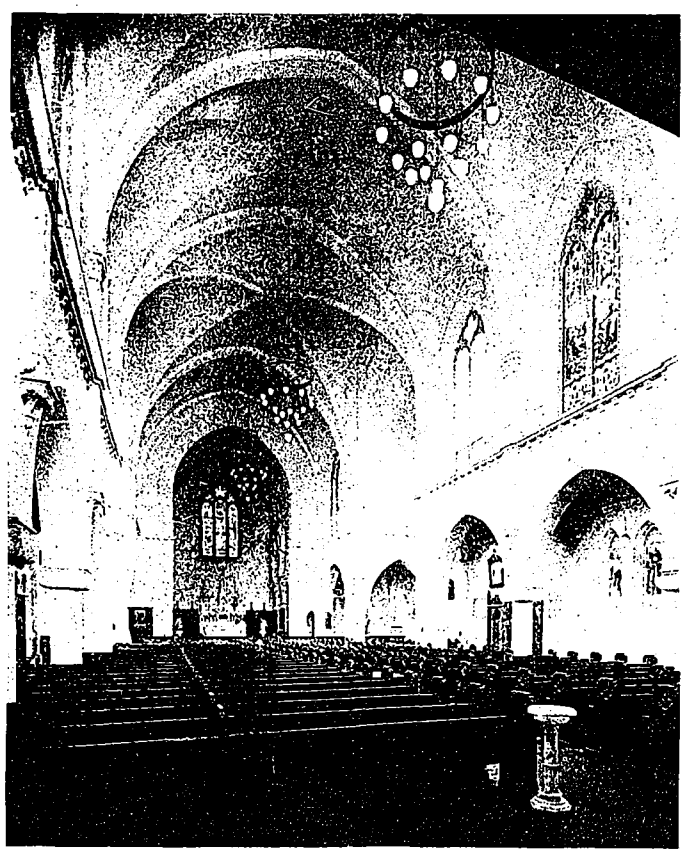
out sacrifice of artistic appearance. The serious view which the courts now take of any encroachment beyond the building line is well illustrated by a decision of the Appellate Division of the Supreme Court of New York, involving title to a piece of realty in that city. It appears that contract for the sale of this property was made some years ago, and a deposit paid on account of the purchase price, subject to the deliverance of a clear title. Upon search being made, it was discovered that there were balcony, bay window, stoop and portico encroachments beyond the building line, and the purchaser declined to take



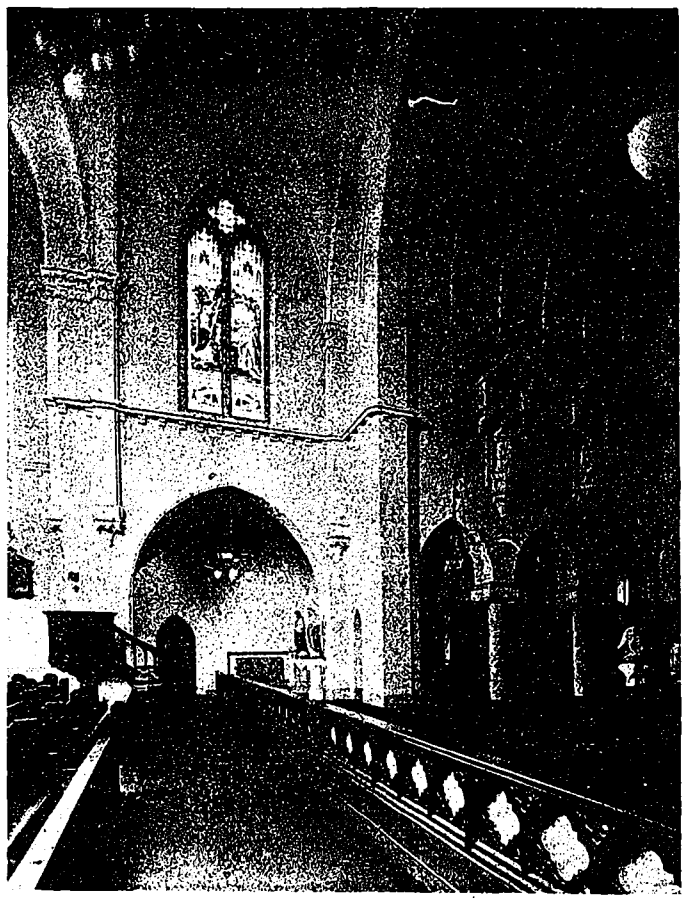
LONGITUDINAL SECTION B-B

CHURCH OF ST. FRANCIS OF ASSISI, TORONTO, ONT.

title unless these encroachments were removed. The sellers refused to make alterations and brought action against the buyer to carry out his contract. In the first trial of the case the referee decided in favor of the plaintiff. The case was then appealed, and, in reversing the decision, the Appellate Division held that the projection of bay window, stoop, portico and balcony constituted undeniable encroachments upon the street which must be removed on notice from the city; that the city has recently ordered the removal of long standing similar encroachments in wide residential and business districts; that the plaintiff on the date set for performance could not deliver a good and marketable title, and that the rights of the city and its recent policies are such that the existence of the projections constitutes a cloud upon the title, since there is a present and continuing risk that the owners of the property may be subjected to action by the city and compelled to remove the projections.



NAVE, CHURCH OF ST. FRANCIS OF ASSISI, TORONTO, ONT.



VIEW OF SANCTUARY, CHURCH OF ST. FRANCIS OF ASSISI, TORONTO, ONT.

Northern Congregational Church, Toronto

SITUATED on the corner of Glen road and East Roxborough street, the handsome stone building of the Northern Congregational Church, which was completed in the fall of 1914, stands opposite a park which marks the centre of North Rosedale, and into which converge a number of streets.

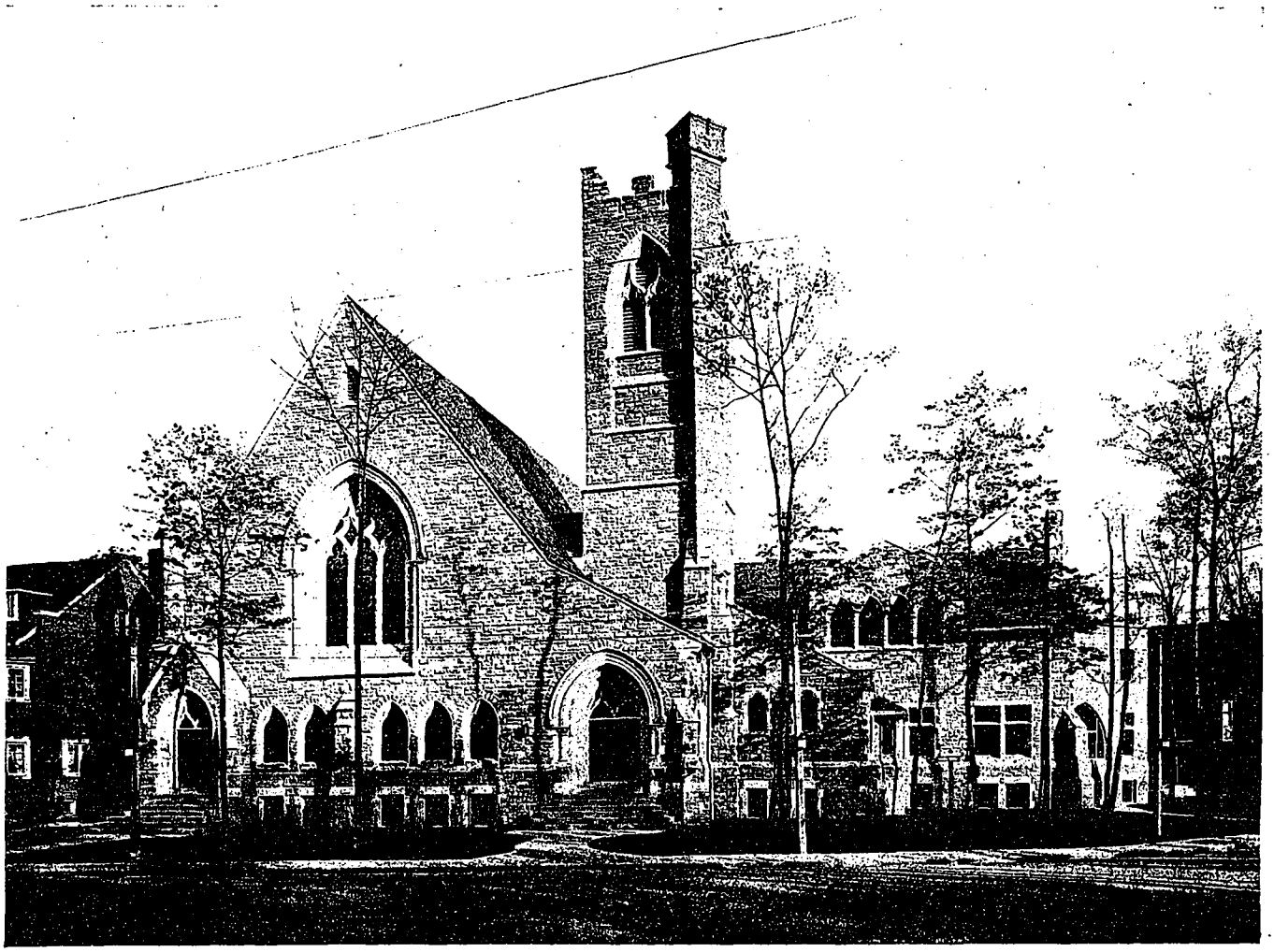
The site was selected after consultation with the Joint Committee on Co-operation of the Methodist, Presbyterian and Congregational churches of the city, a committee that had its origin in the feeling that closer co-operation should exist between the three denominations negotiating for church union, in order to prevent overlapping, and to more fully cover the ground.

The architectural style of the new building, which has been admirably adapted to the shape of the lot by the architect, the late Mr. John Gemmel, is early English Gothic.

The exterior finish of all sides is random coursed Credit Valley Ashlar stone of grey color, with flushes of reddish brown in some stones. The trimmings of the doors, windows, plinths and buttresses, are rubbed cut stone. The window frames are stone, with leaded glass cemented into grooves of the stone frames, mullions and tracery, receding mouldings to the large front windows and doorways, and carved capitals to the pillars, and carved bosses finishing the drip moulds of the main north windows and doorways.

Many handsome and costly memorial windows have been placed in this building by individual parties and families to the memory of those who were at one time connected with the church.

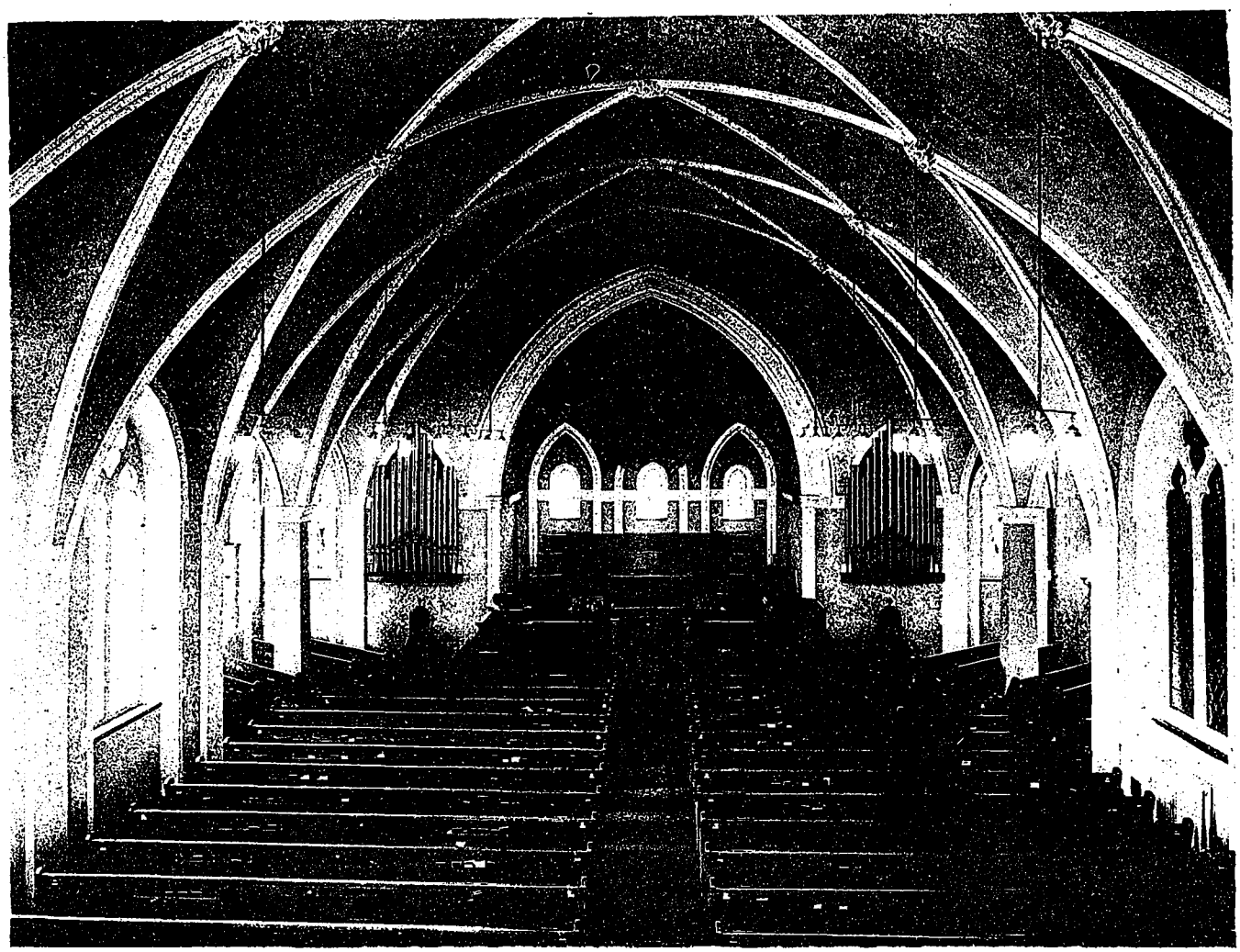
The interior of the main auditorium will seat in the neighborhood of nine hundred. It is of the usual style of a Gothic church, with nave, transepts, chancel, centre and side aisles, ceiling groined and walls finished in grey plaster, with woodwork of quarter-cut oak.



NORTHERN CONGREGATIONAL CHURCH, TORONTO, ONT. JOHN GEMMEL, ARCHITECT.

The main entrance to the auditorium, parlors, minister's vestry and the Sunday School, is from Roxborough street, through a wide corridor, trimmed in oak, with beamed ceiling and tiled floor.

There are two large, commodious parlors, with folding doors between, beamed ceilings, and hardwood trim throughout, fire place with suitable mantel.

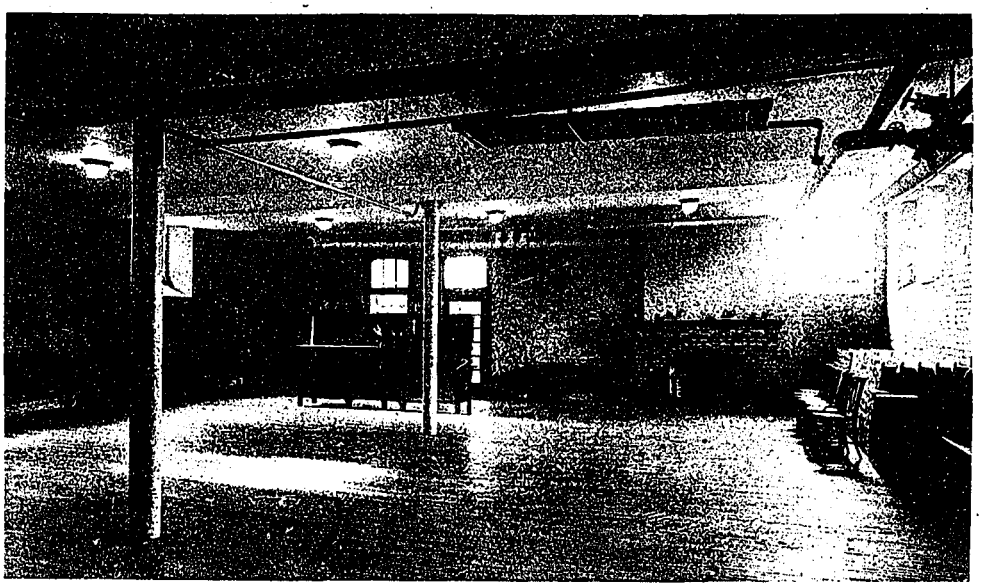


AUDITORIUM, LOOKING FROM GALLERY, NORTHERN CONGREGATIONAL CHURCH, TORONTO, ONT. JOHN GEMMEL, ARCHITECT.

PARLOR, NORTHERN CONGREGATIONAL CHURCH, TORONTO, ONT. JOHN GEMMEL, ARCHITECT.

The minister's vestry is situated at the end of the main corridor, provided with suitable fire place and fitted with all the latest requirements.

The primary department is one of the most attractive rooms in the building, exceptionally well lighted, trimmed in Georgia pine, painted white and enamelled, with walls decorated in suitable colors to harmonize with the surroundings, and furnished with white enamel furniture.



SUPPER ROOM, NORTHERN CONGREGATIONAL CHURCH, TORONTO, ONT.

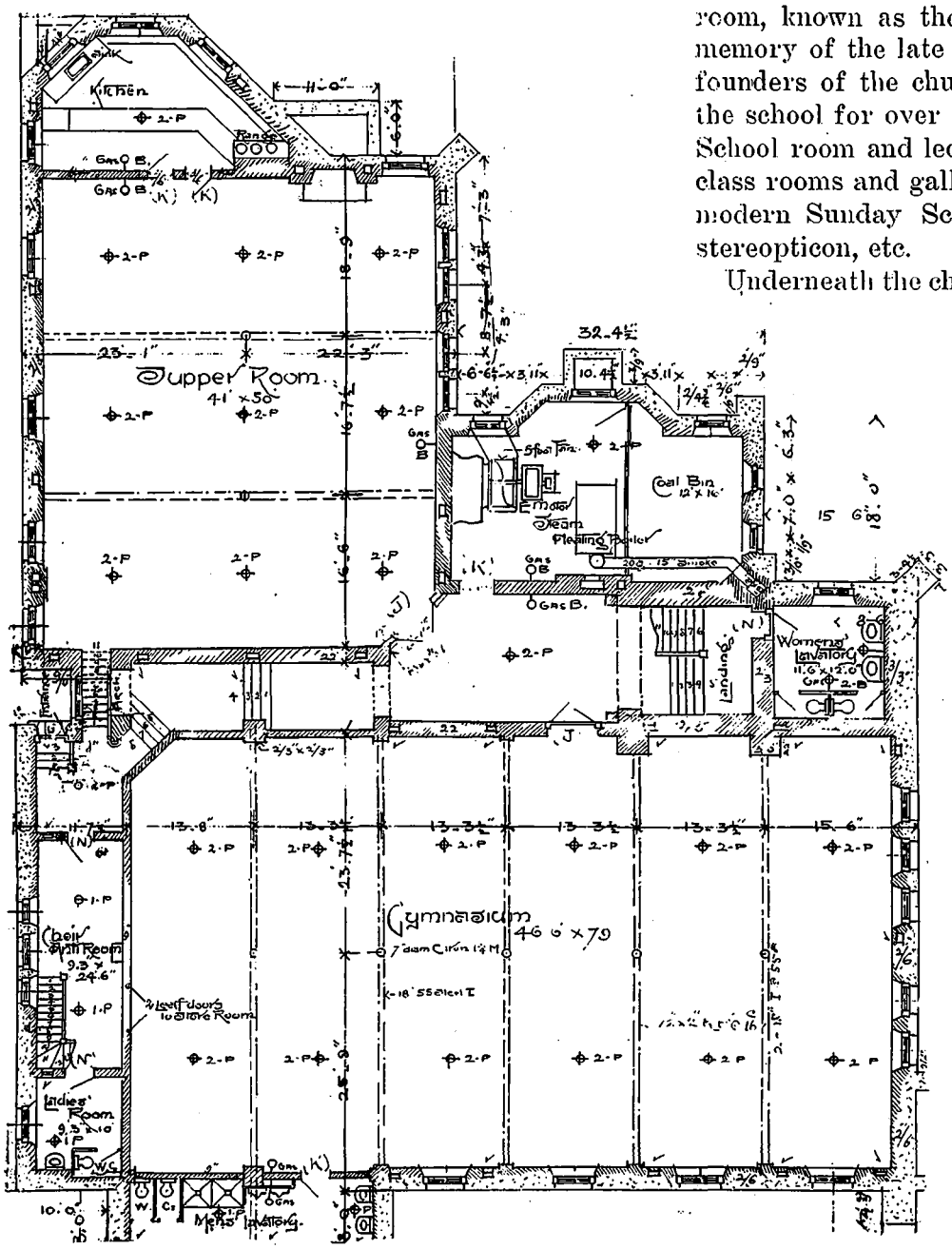
The second floor, which is reached from the main corridor by a wide oak staircase, is the main Sunday School and lecture room, known as the Clark Memorial Hall, in memory of the late Henry J. Clark, one of the founders of the church, and superintendent of the school for over thirty years, which Sunday School room and lecture room is fitted up with class rooms and gallery, fully equipped with all modern Sunday School requirements, electric stereopticon, etc.

Underneath the chancel and connecting directly with the minister's vestry is a commodious choir room.

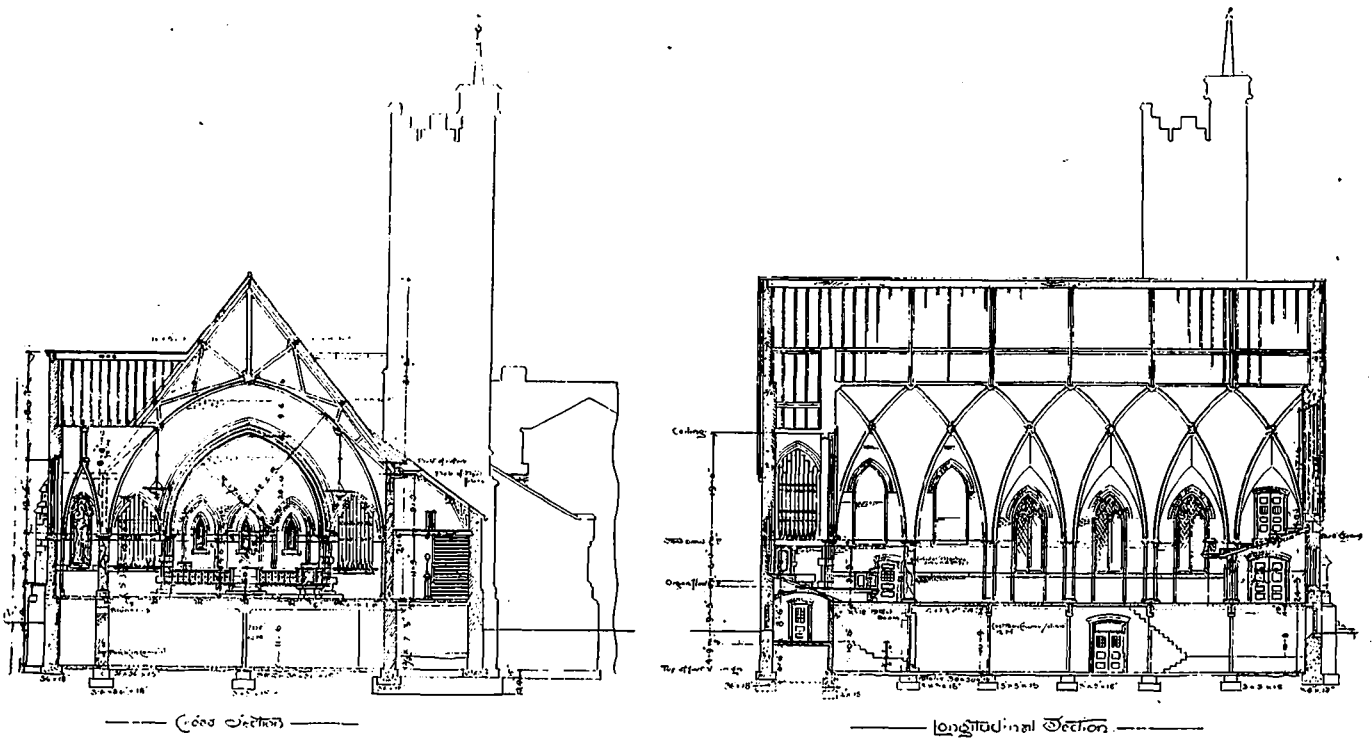
Special care has been taken in the construction and the arrangement of the basement to make it lofty and bright. It is reached by two wide main staircases, and one exterior staircase. One large room is used as a recreation room and bowling alley, and other indoor games, with large lavatories off, provided with shower baths, etc.

There is also a well-appointed supper room, with large fireplace, also a large, well-equipped kitchen, likewise large furnace room equipped with steam boiler and fan and exhaust fan, so that the air of the building can be constantly changed without having to open windows or doors, thus making the best possible ventilation.

The organ is built on each side of the chancel,



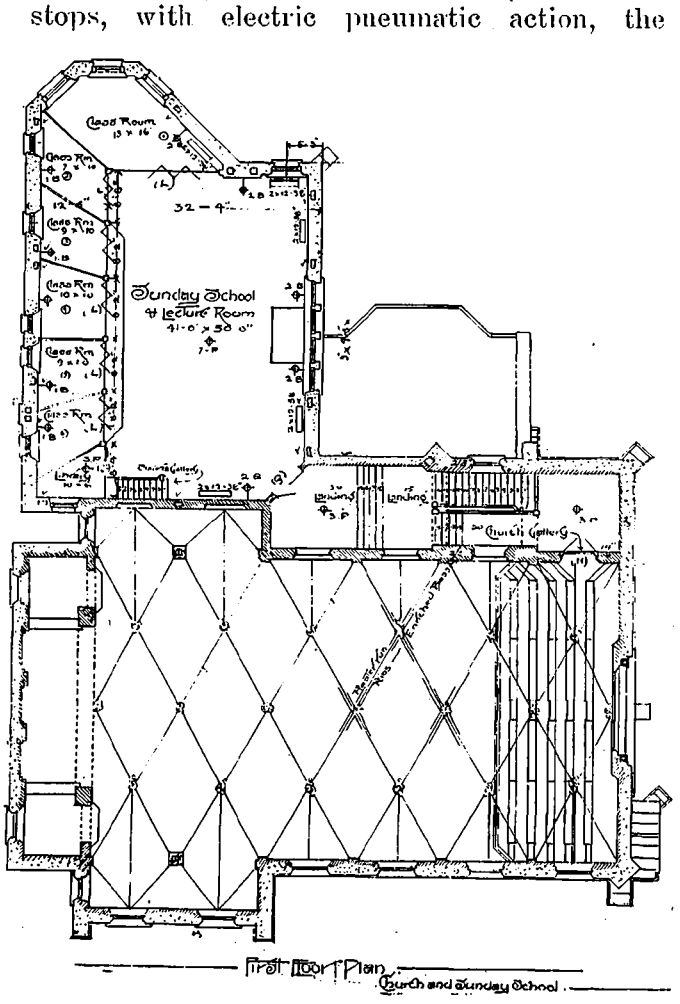
BASEMENT PLAN, NORTHERN CONGREGATIONAL CHURCH, TORONTO, ONT. JOHN GEMMEL, ARCHITECT.

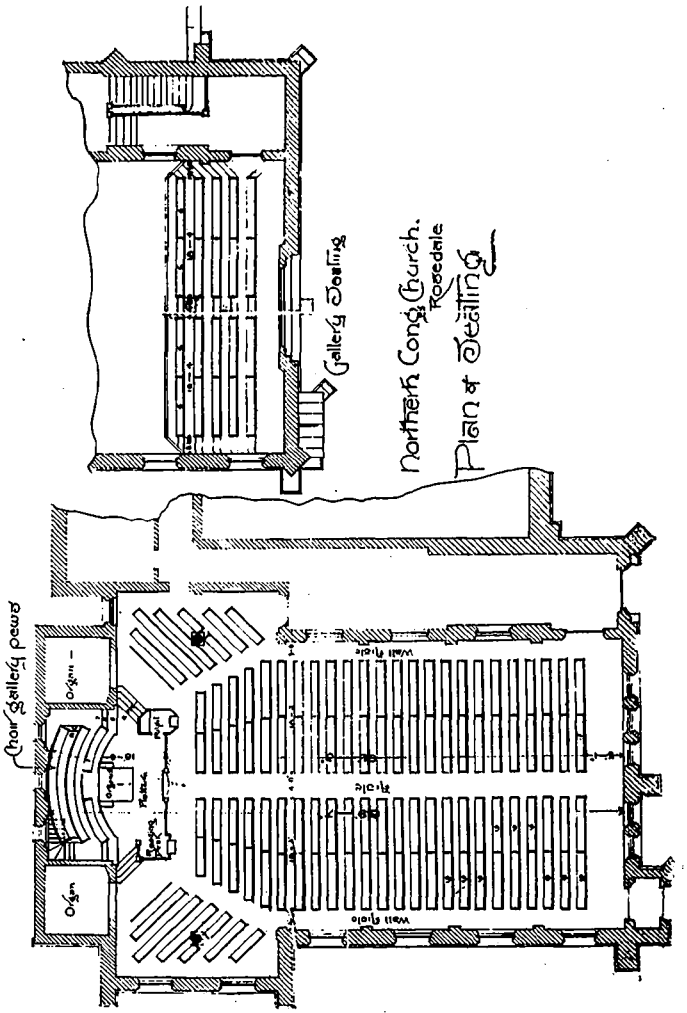


NORTHERN CONGREGATIONAL CHURCH, TORONTO, ONT.

with the console between, and display pipes both within and on the outside of the chancel, and contains three manual instruments, with thirty-eight speaking stops, which, with couplers and combinations, make a total of fifty-five draw stops, with electric pneumatic action, the wind being supplied by electric Orgo-blow.

The furnishings throughout have all been kept to harmonize with the interior finish, and the hardwore throughout is of the best quality and special design for a church building.





NORTHERN CONGREGATIONAL CHURCH, TORONTO, ONT.

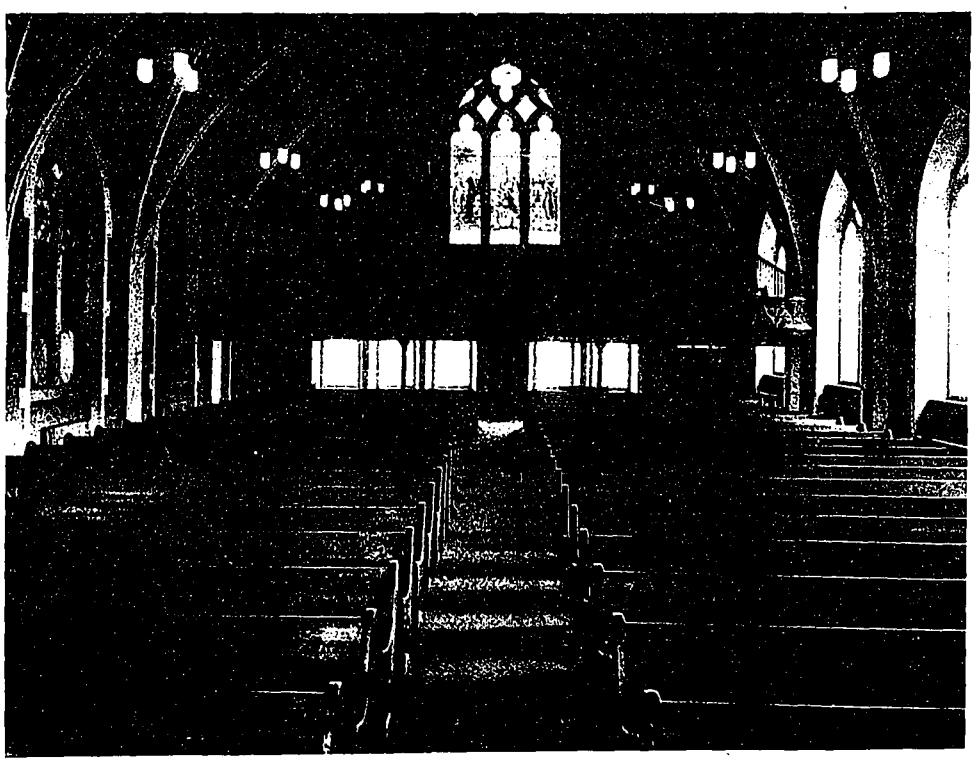
Some of the Difficulties Besetting the Practice of Architecture

PASTOR'S STUDY, NORTHERN CONGREGATIONAL CHURCH, TORONTO, ONT.

The practice of architecture is generally classed among the professions, and the architect is now ordinarily accorded an equal rank in modern social life with the lawyer and physician. Most of the products of the architect's professional activities have, however, always been regarded by educated people as works of art, and the architectural monuments of the past belong, in the largest sense, to what may perhaps be considered the most important phase of the fine arts.

It will be realized on a little reflection that architecture at its best possesses a dual importance, artistic and utilitarian, and that the architect plays a double role in the affairs of life; a role which adds greatly to the difficulties of his work, since it demands both artistic and business ability in its performance.

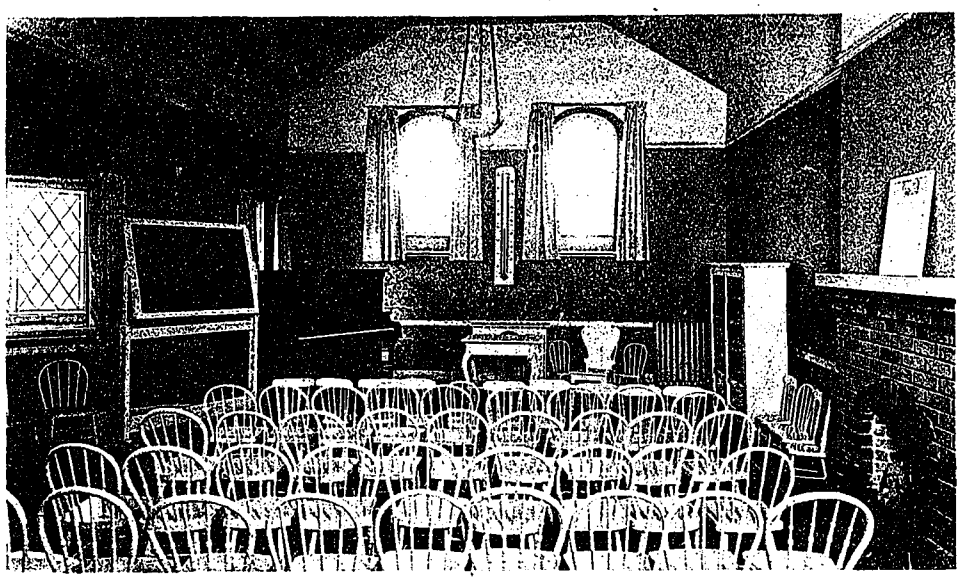
In the practice of the sister arts of painting and sculpture the finished product, which is after all the true objective of the artist, is within the possible attainment of the individual mind and hand. Painting requires only the skilful use of canvas and oils, and the painter is able to see his conceptions take shape under his own hand without the intrusion of any foreign and possibly unsympathetic influence into his work. The sculptor is equally able to translate his ideas into stone or marble, and even if he relies upon the help of a third party, it is only to perform a mechanical part of the work, and this element could be dispensed with at will. The client or person who will ultimately possess the work does not enter strongly as an influence into either of these arts, and if he is known and an influence at all, he is usually a person with some previous knowledge of or interest in artistic matters.



AUDITORIUM, LOOKING FROM PULPIT, NORTHERN CONGREGATIONAL CHURCH, TORONTO, ONT.

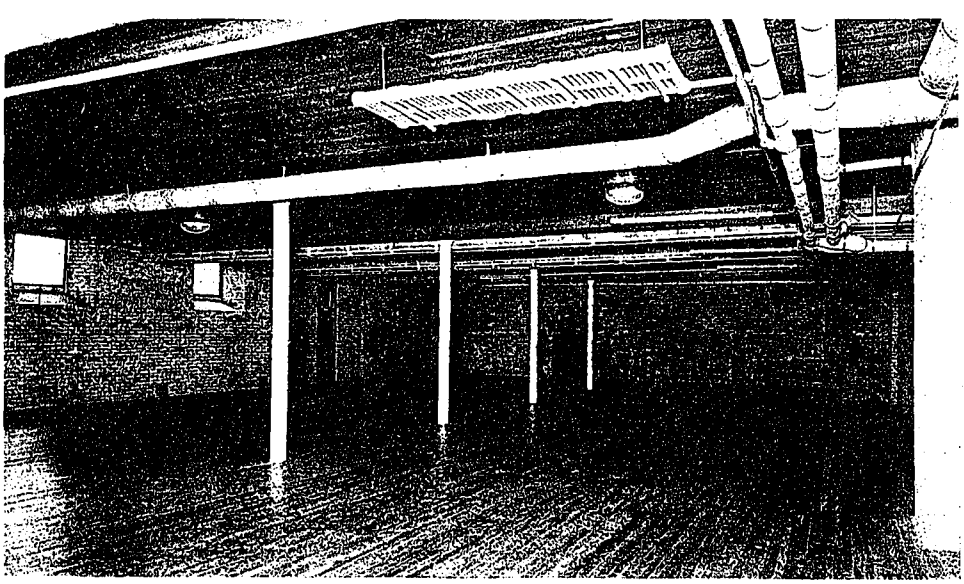
On the other hand architecture, by its very nature, demands not only that the architect depend wholly upon such artisans and workmen as may be available, to translate his ideas from the abstract to the concrete, but he is also dependent upon the client who furnishes occasion and fixes definite limits to the ideas.

The client of the architect may have no acquaintance whatever with architectural matters, and frequently employs the architect, not in the capacity of



PRIMARY ROOM, NORTHERN CONGREGATIONAL CHURCH, TORONTO, ONT.

SUNDAY SCHOOL, NORTHERN CONGREGATIONAL CHURCH, TORONTO, ONT.



GYMNASIUM, NORTHERN CONGREGATIONAL CHURCH, TORONTO, ONT.

artist, but rather that of director of building operations.

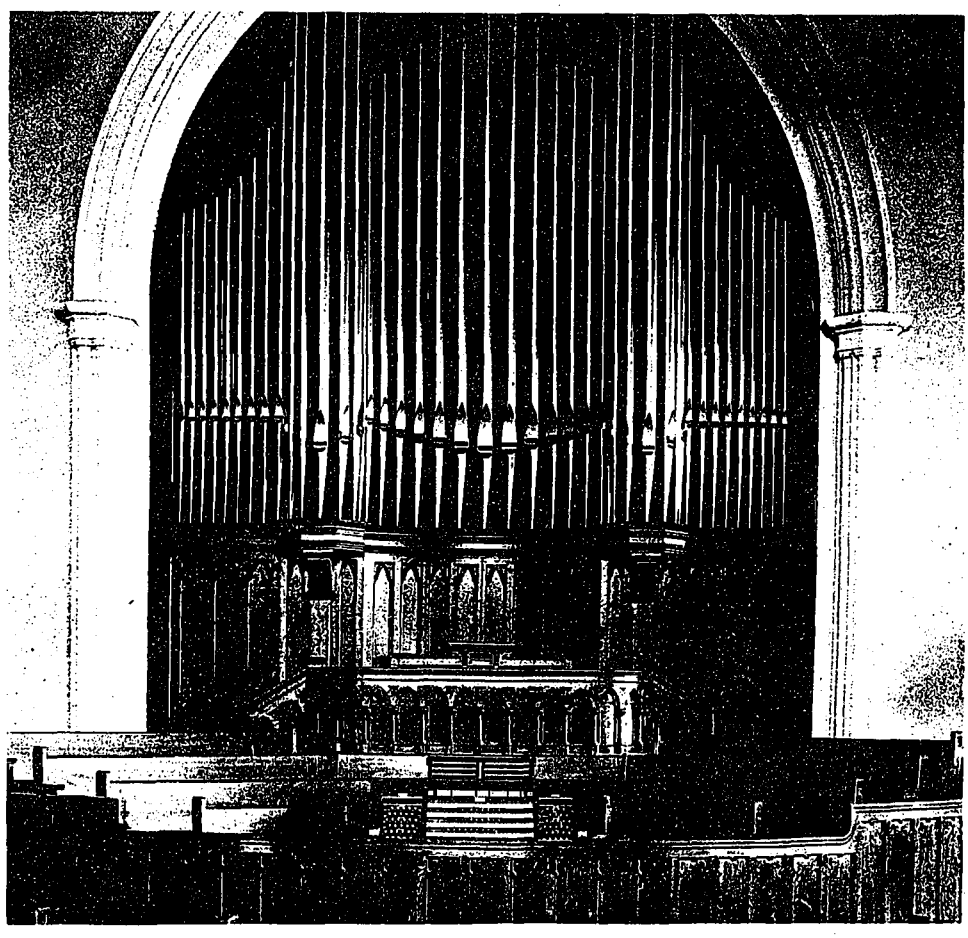
Within the legal and medical professions, the interests of the client and the professional man are usually and properly identical, but the architect is sometimes, in the case of uneducated clients, forced to, in a sense, serve two masters, and to seek a nice compromise between the duty and desire on one hand to create a beautiful building, and on the other the obligation that he owes to his client to meet his wishes and plan an intensely practical and economical structure, omitting all else. He is even forced in extreme cases almost to the point of insincerity to preserve the integrity of his design, by such expedients as drawing the attention of his client away from the cost of purely artistic features.

Regardless of the moral aspect of the questions involved in such a course, and without attempting to pass on matters that must be decided by each practitioner for himself, it is this dual nature of architecture that has given rise to many popular misconceptions that in themselves hamper and thwart the architect. The profession has always recognized the difficult role which its individual members are forced to play, and has endeavored by the maintenance of a high ethical standard to serve both the interests of the public and those of art with strict fidelity to both.

Only by a slow and gradual process of education can these two interests ever be made identical, and until that time the practice of architecture in its highest form will probably continue to consist largely of a liberal use of tact and discretion, accompanied by a highly-developed sense of values that can effect a compromise between the practical and the artistic, without too great a sacrifice to either one of them.—*American Architect.*

St. Andrew's Presbyterian Church, Moose Jaw

WESTERN cities, on account of their rapid growth within the past five years, have undergone a development and improvement in all lines of civic life, and the increase in church membership, not merely in church attendance, is an unmistakable sign of the stable development of a community. In 1882, St. Andrew's Presbyterian Church, Moose Jaw, had a membership of 9; thirty years later it was 900, having in the meantime outgrown the confines of three buildings, and making necessary the construction of a building which might reasonably be expected to provide a church home against subsequent growth for some years. To-day the church membership is in excess of 1,200, and the members are housed in the most complete church edifice west of the city of Winnipeg.



PULPIT, ST. ANDREW'S PRESBYTERIAN CHURCH, MOOSE JAW, SASK.

The building is of pure Gothic construction, its high windows, great vertical height, narrow faced buttresses terminating in slender floriated pinnacles harmonizing completely with the main body of the church. Built throughout of Bedford stone, it has every appearance of dignity and delicate massiveness. The main doorway is approached by a broad stone staircase, having an easy rise, with a rest midway. The auditorium is almost square, 71 x 75 ft., the floor and gallery having a seating capacity of 1,200. The arches are of dark oak, massive in appearance, having a clerestory of 50 ft. above the auditorium.

Adopting the custom of older churches, the pulpit is entirely enclosed; constructed of delicately wrought oak, it is a replica of Old St. Andrew's, Toronto. The choir gallery, with its complement of fifty-five voices, is in front of the pulpit, and around this is placed the elders' platform. The color scheme is quiet and dignified; the ceiling is a light buff, the walls a harmonizing green, while the pillars and structural portions are grey. The lighting is entirely indirect, all lights being cornice concealed. Behind the auditorium, on the ground floor, is the minister's study, the board room and quarters for the choir and deaconess. Beneath these rooms are the heating and ventilating plants, and adjoining in the basement is a large social hall, with a seating capacity for 600.

The organ, built by Casavant Bros., St. Hyacinthe, is the second largest in Canada, and installed at a cost of $13,000. It consists of great, swell, choir, solo, echo and pedal organs, with fifty-two speaking stops and forty couplers. The pistons are adjustable, double acting and reversible. The chimes of the echo organ, placed in the south-west tower, are beautifully voiced. The pipes are finished in brown, and cast in quarter-cut oak. There is electric action throughout, and sounds are instantaneous with mechanical effort. The organ is blown by a 5 h.p., and the echo organ by a 1 h.p. motor. All the work was done to the specifications, and under the direction of Luther Roberts, Mus. Bac., Tor., organist and director.

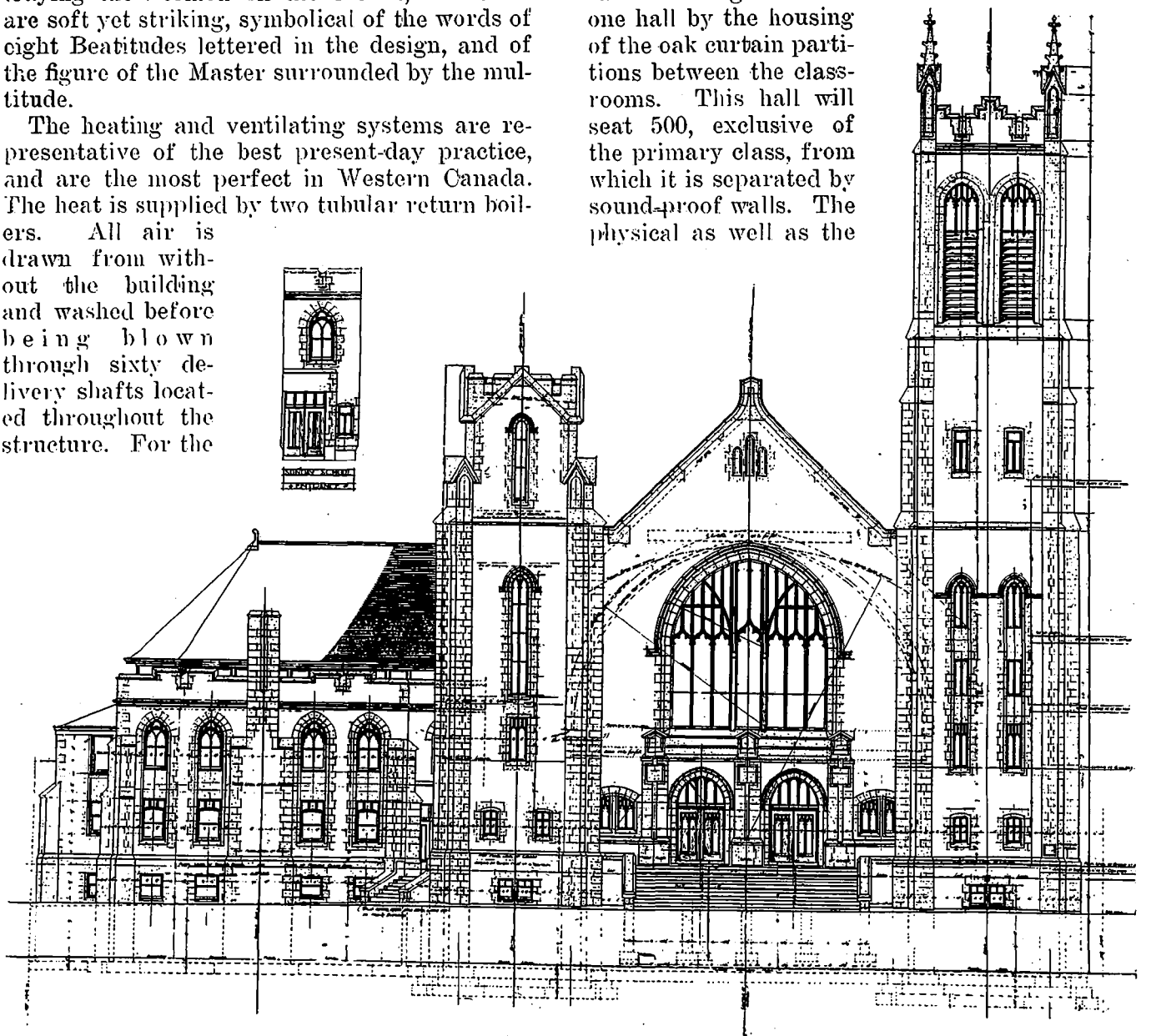
The glass and windows deserve special attention, more particularly that of the memorial window above the main entrance to the church. A product of the Lyon studio, of Toronto, it is, in its perpendicular style, one of the most artistic and aesthetic in Western Canada. Por-

GALLERY, ST. ANDREW'S PRESBYTERIAN CHURCH, MOOSE JAW, SASK.

traying the Sermon on the Mount, its colors are soft yet striking, symbolical of the words of eight Beatitudes lettered in the design, and of the figure of the Master surrounded by the multitude.

The heating and ventilating systems are representative of the best present-day practice, and are the most perfect in Western Canada. The heat is supplied by two tubular return boilers. All air is drawn from without the building and washed before being blown through sixty delivery shafts located throughout the structure. For the added comfort of church attendants, the air can be ice cooled in warm weather to any desired temperature, and is renewed once in twelve minutes. An acousticon with nine outlets is a novel and useful adjunct to the church's equipment.

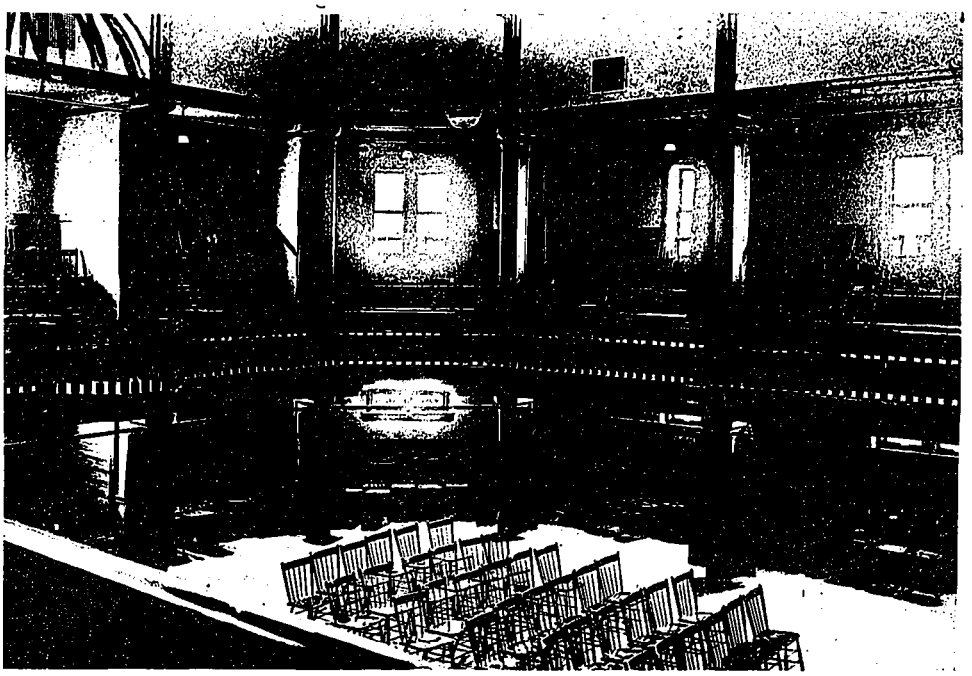
The Sabbath School is situated to one side of the church, a wide corridor giving them a common entrance. The class rooms are arranged in two semi-circular tiers, ten above and eight below, all visible from and communicating with the superintendent's desk. The ground floor can be converted into one hall by the housing of the oak curtain partitions between the class-rooms. This hall will seat 500, exclusive of the primary class, from which it is separated by sound-proof walls. The physical as well as the



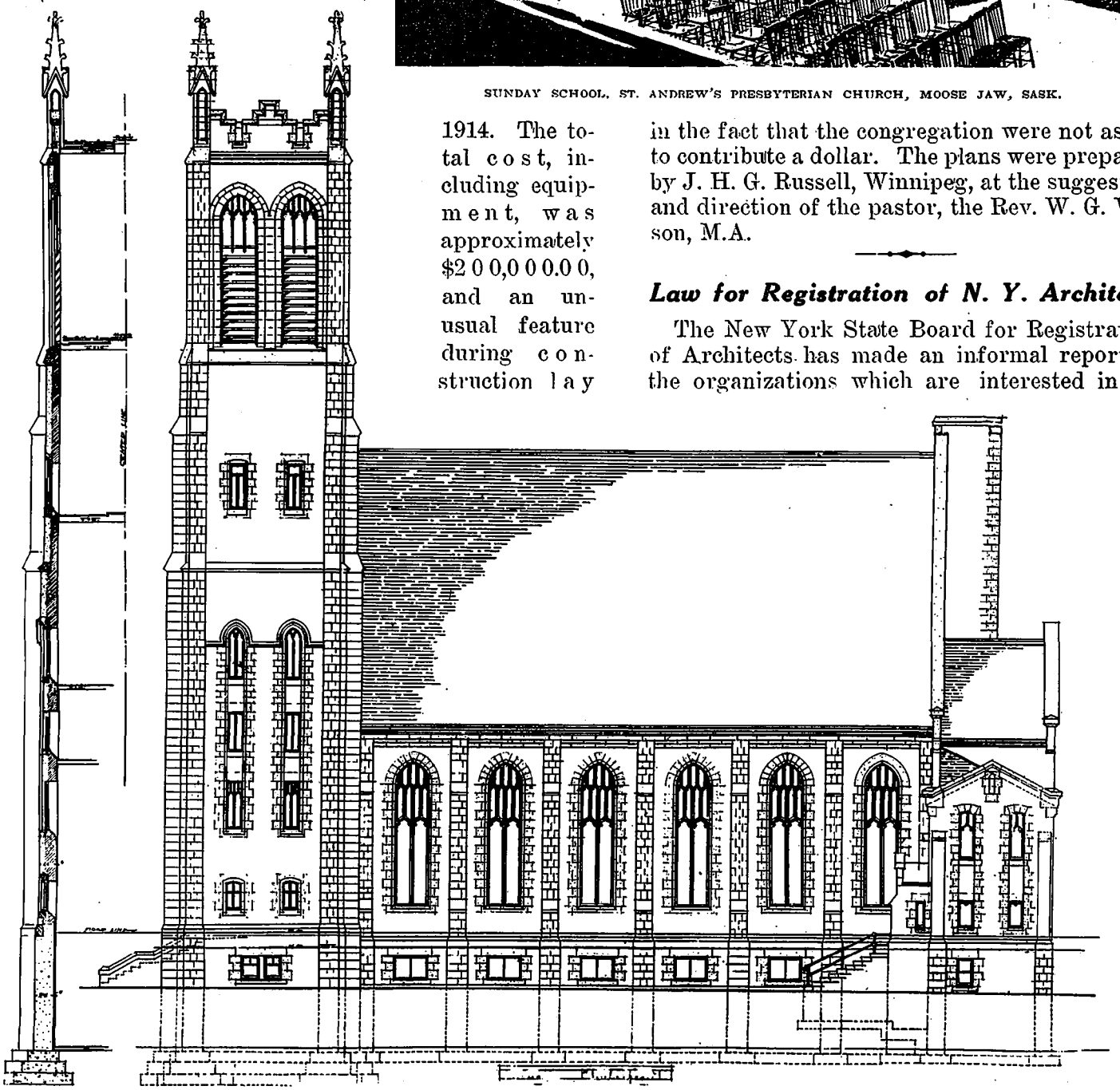
SOUTH ELEVATION, ST. ANDREW'S PRESBYTERIAN CHURCH, MOOSE JAW, SASK.

spiritual was considered in the design of this important branch of the church work, and a fully equipped gymnasium, 40 feet square, is an added attraction to the school. Beneath the Sunday school is the men's clubroom, and it and the boys' room are equipped with shower baths. On this floor is a large social hall, and a completely equipped kitchen.

The corner stone was laid October 10th, 1912, and the formal opening took place March 29th, 1914. The total cost, including equipment, was approximately $200,000.00, and an unusual feature during construction lay in the fact that the congregation were not asked to contribute a dollar. The plans were prepared by J. H. G. Russell, Winnipeg, at the suggestion and direction of the pastor, the Rev. W. G. Wilson, M.A.



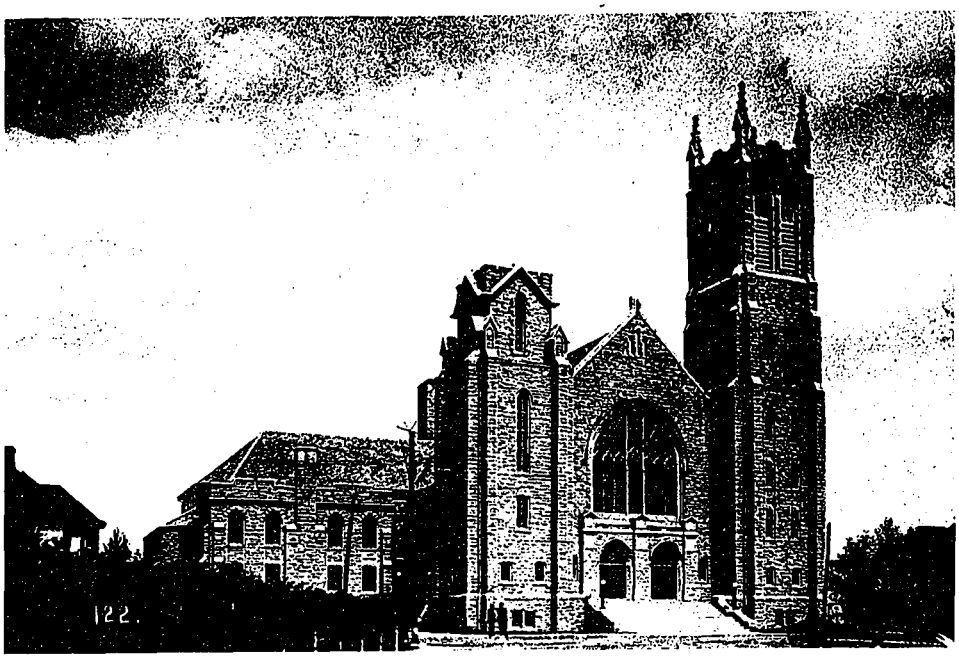
SUNDAY SCHOOL, ST. ANDREW'S PRESBYTERIAN CHURCH, MOOSE JAW, SASK.



EAST ELEVATION, ST. ANDREW'S PRESBYTERIAN CHURCH, MOOSE JAW, SASK.

Law for Registration of N. Y. Architects

The New York State Board for Registration of Architects has made an informal report to the organizations which are interested in its

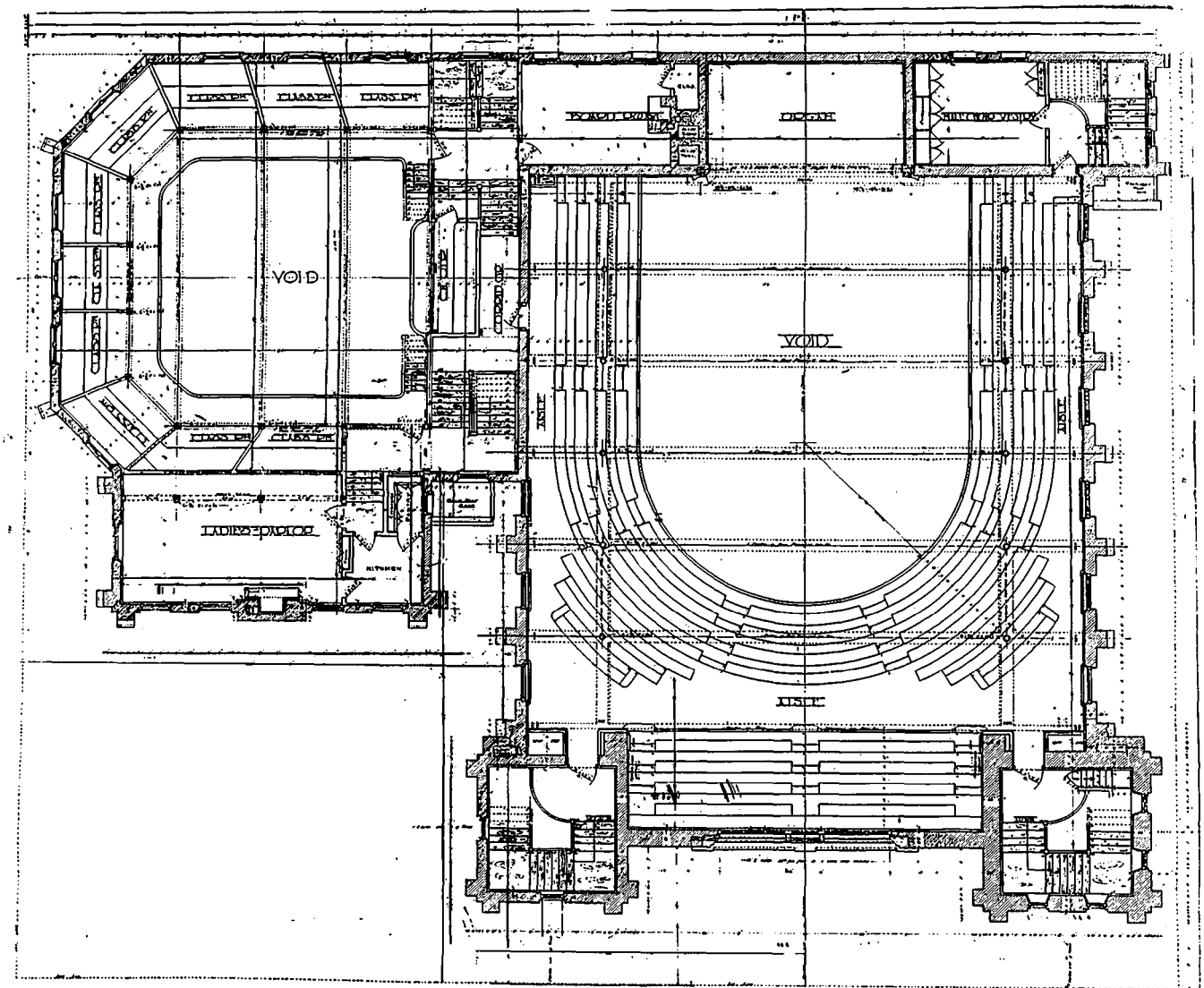


ST. ANDREW'S PRESBYTERIAN CHURCH, MOOSE JAW, SASK.

work. The first regular annual report to the Board of Regents of the State University will be printed for public use in due course of time.

The law, known as "Chapter 454, An Act to Amend the General Business Law, in Relation to the Practice of Architecture," was signed by the Governor on April 28, 1915, and became effective immediately. The members of the Board were appointed by the Regents and held their first meeting for organization October 22, 1915. The Board undertakes to meet one day weekly, usually in Albany on Thursdays. Since its organization, up to October 6, 1916, thirty-two (32) meetings have been held.

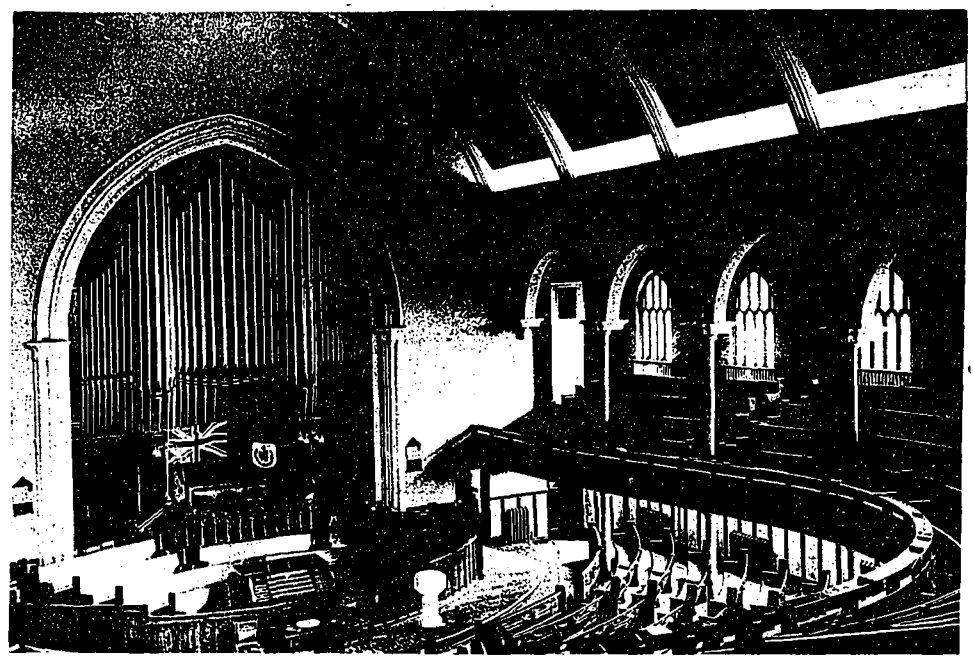
The work of the Board thus far has consisted; first, in formulating regulations for its own procedure; second, in outlining standards for examinations; third, in preparing for publication information regard-



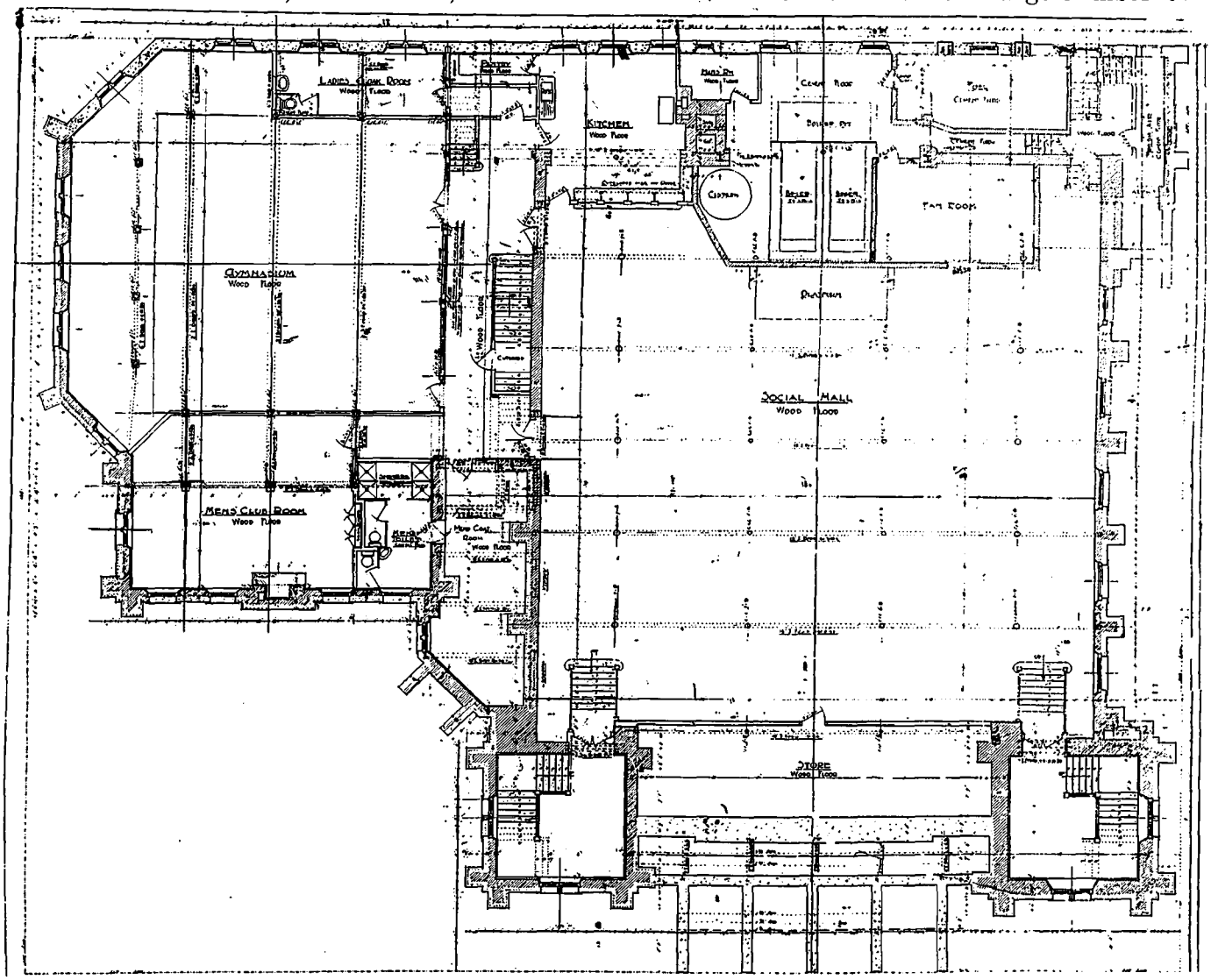
GALLERY PLAN, ST. ANDREW'S PRESBYTERIAN CHURCH, MOOSE JAW, SASK. J. H. G. RUSSELL, ARCHITECT.

ing the Registration Law; and, fourth, in passing upon applications for certificates.

There were received about nineteen hundred (1900) applications for the granting of certificates without examination. Almost all of these applications are from men who were practising when the Registration Law went into effect. Inasmuch as the law is not a license law, those who were in practice before the law went into effect may continue to practise without certificates. Hence the Board believes that certificates should be withheld from all except those who appear to be reasonably well qualified to use the title architect. Among the applicants there have been those who have considered Real Estate, Automobiles, and even Undertaking, along with Architecture, as legitimate branches of their contracting business. The Board has found it a tedious and time-consuming matter to review the large number of



VIEW FROM GALLERY, ST. ANDREW'S PRESBYTERIAN CHURCH, MOOSE JAW, SASK.

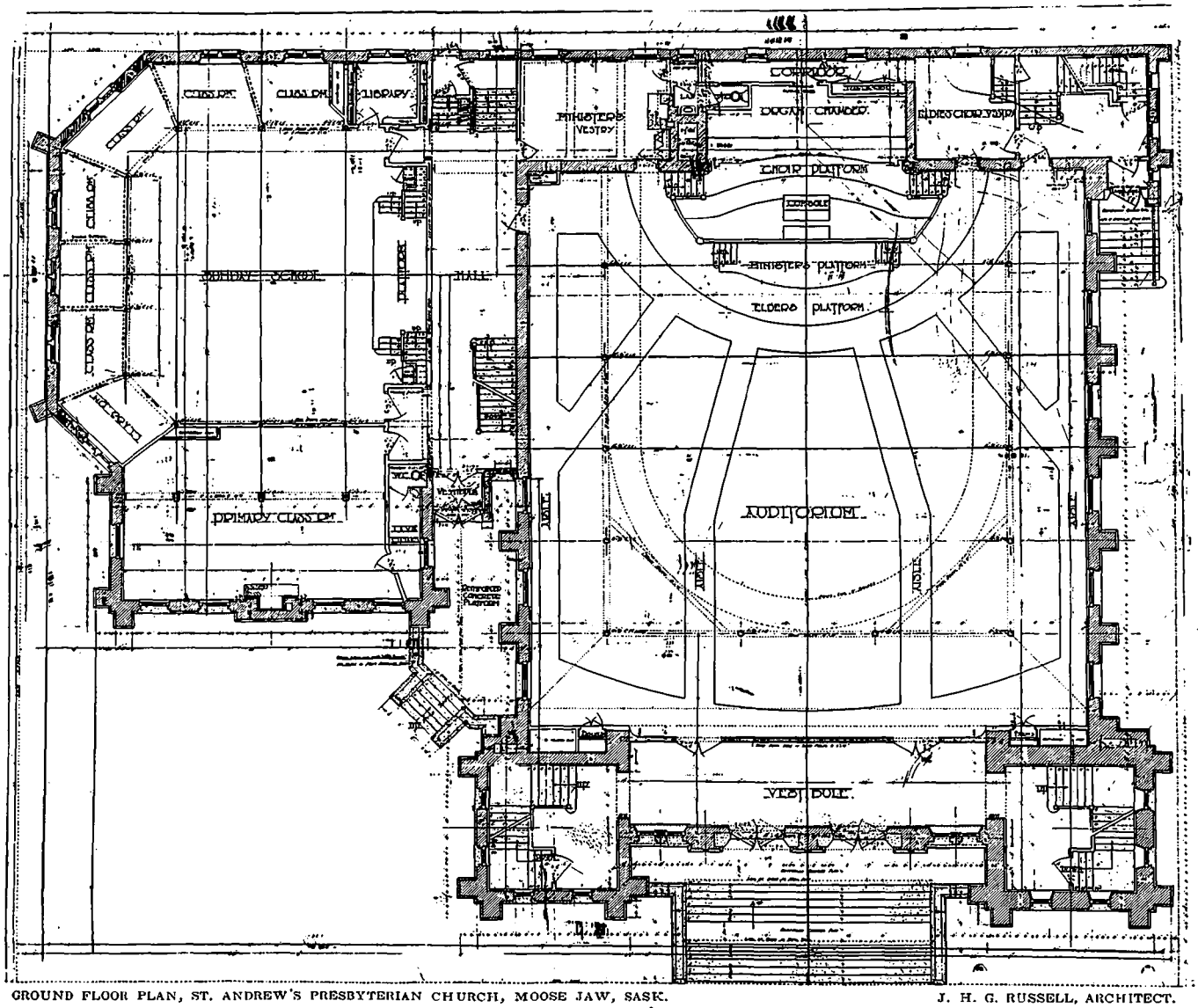


BASEMENT PLAN, ST. ANDREW'S PRESBYTERIAN CHURCH, MOOSE JAW, SASK. J. H. G. RUSSELL, ARCHITECT.

applications, many a second and third time, and to examine thousands of drawings submitted under affidavit. Thus far, ten hundred and sixteen (1016) applicants have been reported to the Board of Regents as entitled to certificates, one hundred and ninety-seven (197) have been reported to the Regents with the finding of the Board of Registration that "the evidence submitted was not such as to entitle them to registration without examination," and about seven hundred (700) applicants remain to be considered.

The Board for Registration of Architects has undoubtedly made mistakes, and recommended the issuance of certificates to men not entitled to receive certificates. The Board will correct any mistakes possible, and asks the help of the profession that it may do so. Information regarding any person who has attempted wrongfully to obtain a certificate should be sent to the State Board for Registration of Architects, Education Building, Albany, New York. Reports may be made personally to a member of the Board, and thus permit an investigation without the name of the reporter appearing in the record.

The Board of Registration reports that it sees already evidence of beneficial effects of the Registration Law, and trusts that the most important work which the Board will have to do in future will be found in its efforts to raise the standard of education of architects by means of its examinations, or rather by means of its syllabus of required study and experience which may guide students of architecture in their preparation for the examinations. The good will and co-operation of all the profession is confidently hoped for, in order that the law may be administered wisely.



GROUND FLOOR PLAN, ST. ANDREW'S PRESBYTERIAN CHURCH, MOOSE JAW, SASK. J. H. G. RUSSELL, ARCHITECT.

Australian Federal Parliament House Competition

The President of the Royal Institute of British Architects has received a communication, dated October 27, from the office of the High Commissioner for Australia in London, intimating that a cablegram has now been received from the Department of Home Affairs, Melbourne, to the effect that the date up to which designs for the above competition may be received has been extended from January 31 to April 30, 1917.

The Saskatchewan Association of Architects

AT the annual meeting of the Saskatchewan Association of Architects held in Regina, on October 27th, 1916, the following officers were elected for the year 1916-1917:

President, A. G. Creighton, Prince Albert; Vice-Presidents, R. G. Bunyard, Moose Jaw, J. E. Fortin, Regina; Secretary-Treasurer, Francis B. Reilly, Westman Chambers, Regina; Council, W. G. Van Egmond, Regina; Prof. Greig, Saskatoon; H. Cooper, Saskatoon.

The meeting was a very successful one and matters relating to the welfare of the profession were dealt with. The membership report shows that one third of the total membership are on active service for the defence of the Empire, and resolutions of appreciation for their service were passed.

The question of technical education received much attention. In view of the need of employment for returned soldiers who, if properly trained, would be able to help in the great development of the province which is bound to follow on the return of peace, it was resolved to urge the Government to establish schools for technical training throughout the province.

The employment of American architects for Canadian work, and often by Canadian firms was regretted. This practice naturally leads to the specification of American materials with which the American architect is familiar, and to the employment of American contractors to do the work. All of which is to the detriment of Canadian business and a serious loss to the country and it was resolved to take steps to bring this matter before the proper authorities to have the matter remedied.

The next annual meeting will be held in Regina.

A. GRAHAM CREIGHTON, PRINCE ALBERT, PRESIDENT SASKATCHEWAN ASSOCIATION OF ARCHITECTS. MR. CREIGHTON GRADUATED IN ARCHITECTURE FROM THE UNIVERSITY OF TORONTO, IN 1906, AND HAS BEEN PRACTISING SUCCESSFULLY IN THE WEST FOR THE PAST EIGHT YEARS.

Greater Home Comforts

Only two and one-half per cent. of the four hundred farmers visited in connection with the Agricultural Survey of the Commission of Conservation in 1915, had the complete service of water on tap, bath and toilet in their houses. Five per cent. had automobiles; thirty-eight per cent. had pianos; thirty-two per cent. had organs; and twenty-two per cent. had gasoline engines on the farm. While it is well that seventy per cent. possess sufficient musical interest to have either a piano or organ in the house, it is regrettable indeed that thirty-nine out of forty have not installed the water service and bath.

Running hot and cold water in the kitchen removes much of the drudgery of housework for the farmer's wife.

Bathrooms for farm homes are just as necessary as for city homes, and the cost is not prohibitive.

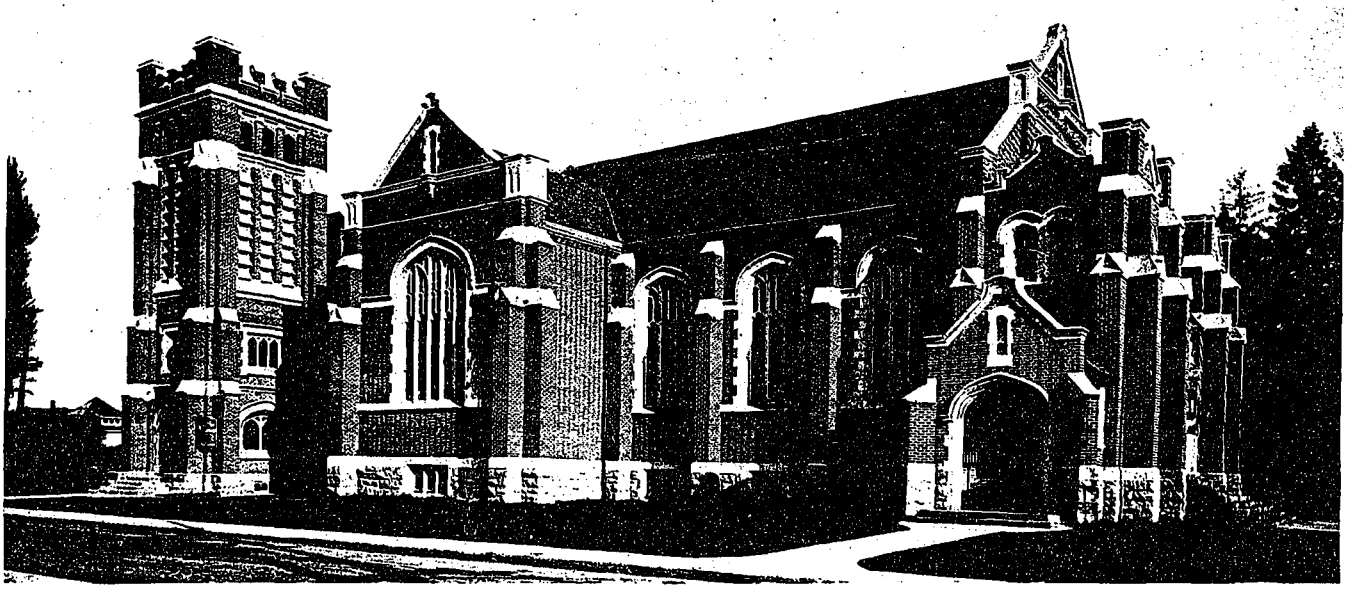
No investment yields more in conserving the women's health and strength, in creating greater home comforts, and in elevating the general tone of the material side of living than the installation of water service and the sanitary conveniences in the home. Thousands of farmers who could well afford to do so have not put in the service for various reasons—because they have not thought of it, or because they do not know how to go about it, or because they think it too expensive. The cost is not so great as many imagine. A bath tub can be purchased for $10.00, a sink basin for $3.00, a closet for $16.00, a thirty-gallon hot water tank for $10.00. Various means are employed in obtaining pressure at the taps, such as a force pump to elevate water to a tank in the attic, or a pneumatic tank in the cellar, and the cost of piping and installation will vary according to circumstances.

One farmer had the hot water attachment, tank, bath and dry closet installed for $50.00, the farmer himself helping the plumber to do the work. The complete service, which would be used three hundred and sixty-five days in the year, can be installed on the average farm for less than the farmer pays for the binder he uses for a few days at harvest time and which stands idle for the balance of the year. The man on the farm thinks he cannot get along without the many labor saving devices. How about a labor saver for the farm women?

St. Giles Presbyterian Church, Hamilton, Ont.

ST. GILES Church is an attractive structure with exterior walls of brick and concrete stone. The stone trimmings being designed to render an effective contrast to the coloring of the brick. The building is fifty-six feet, four inches, by one hundred and sixteen feet, on stone foundations. Walls are of solid brick, the basement being twenty-four inches and super-structure walls eighteen inches. The roof trussed is of steel, the steel beams being covered with ash, giving them a more massive appearance.

The interior walls are panelled with oak of a dark finish to a height of nine feet. The remainder of the walls in the building being finished in gray stucco.



ST. GILES PRESBYTERIAN CHURCH, HAMILTON, ONT. STEWART & WILTON, ARCHITECTS.

The seating capacity of the church is nine hundred and fourteen, the gallery and the east and west transepts, and at the rear supplementing the main floor and seating capacity. The floor and seats are of oak, the floor being carpeted. On the east side is included a chapel for prayer-meeting and special meetings. The Sunday School is a separate building being circular. The minister's study is also on the east side, has a beam ceiling, is oak panelled and carpeted.

The windows are all of stained glass. The lighting fixtures are unique, being of special design, each one containing three reflectors. The framework of the fixtures is of cyprus, enclosing art glass. Across the bottom of the inside is a prismatic glass which diffuses the light and gives a soft tone without shadows. Hot water heating has been installed, the heating unit being a set of self feeding boilers.

The musical instrument is a choralcelo and is in the nature of an electric organ, the tune being produced by vibrating chords similar to piano strings, bars of metal and wood and also metallic discs, by means of induction from magnets in close proximity, which gives out a tone of marvellous sweetness. During the present year, in order to increase the volume of tone the Boston Company arranged with the Karn-Morris Company of Woodstock, to install a small pipe organ of five stops. The two instruments are played in combination from a three manual keyboard, the same as any ordinary pipe organ, and lends itself to great variety of tone.

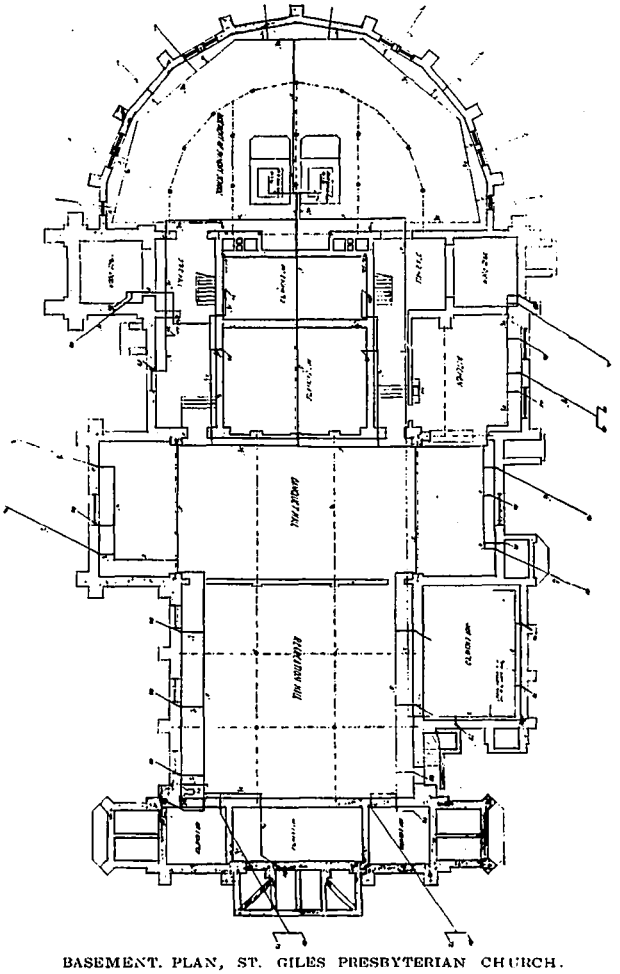
Two small units of the choralcelo are placed in the rear gallery and give the effect of an echo organ.

This installation was the first of its kind in Canada and is proving satisfactory.

Designs For War Memorials

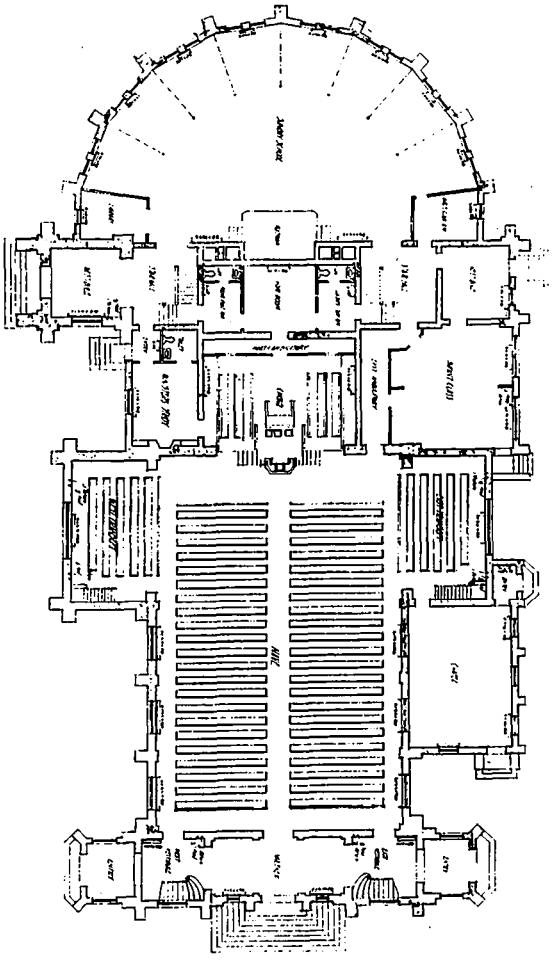
The first year of organization on the part of the Civic Arts Association, of Great Britain, resulted in the recent exhibition of War Memorial designs, held in the galleries of the Royal Institute. Nearly four hundred works were submitted for competition in the specified classes, but unfortunately limited space admitted of only a small number of selected works being shown. The Association, it must be explained, owes its origin to the far-seeing policy of the Hon. R. B. Kay-Shuttleworth, who early in the war collaborated with a number of artists to found a society whose chief aim would be to act in an advisory capacity to those of the public desiring to erect memorials to their dead. In addition it was recognized that the ambitious title Civic Arts embraced practically every subject bearing upon the problems of social amenity and artistic expression, a decision arrived at through the wisdom and eloquence of Professor Lethaby. The Executive Committee of the As-

sociation have the desire to augment the aspirations of other established bodies, not only in the furtherance of artistic achievement, but more particularly regarding the interests of artists, and hope to extend the scope of their operations to soil that has remained uncultivated. The need of an organized body of artists genuinely interested in the problems arising out of the great war is urgent. The movement in which the Association is the pioneer is as yet in its initial stages, the machinery far from perfect, the conditions seemingly overwhelming; yet the fact that a jury of responsible men, representing all sections of the sphere of art, has agreed to work in an executive capacity is an inspiring innovation with vast possibilities. The Association having organized itself, and having discussed all the conditions it would be called upon to meet, resolved to inaugurate a competition which would serve two distinct purposes: first, to assist those artists and craftsmen whom the war has seriously affected; and secondly, to enquire into, as well as to make discoveries regarding the nature of war memorials suitable for every purse. In time the scope of the Association might well be enlarged from its present advisory capacity to one in which it might exercise control in the design of monuments and their public setting.

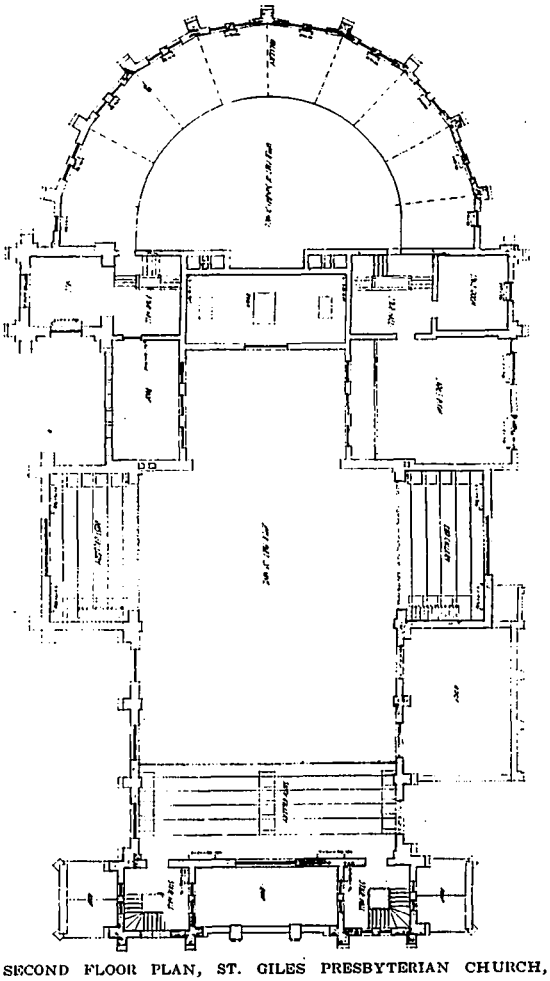


BASEMENT. PLAN, ST. GILES PRESBYTERIAN CHURCH.

Judging from the results of the first competition it cannot be said that artistic expression of to-day is ideal, although certain healthy signs are noticeable. There are apparently three distinct tendencies, groups, or schools in existence which can be classed as follows: the Arts and Crafts movement; the intellectual coterie, with predilections for the teachings of Rodin and Mestrovic; and the traditional school, which is unfortunately in a minority. Signs are not lacking that the first two groups have a common unity and sympathy, and practically unite forces in opposition to those who pin their faith to the standard of tradition. This is regrettable, but it is without doubt due to the amateurs in artistic matters possessing a smattering of knowledge and acting as direct patrons to



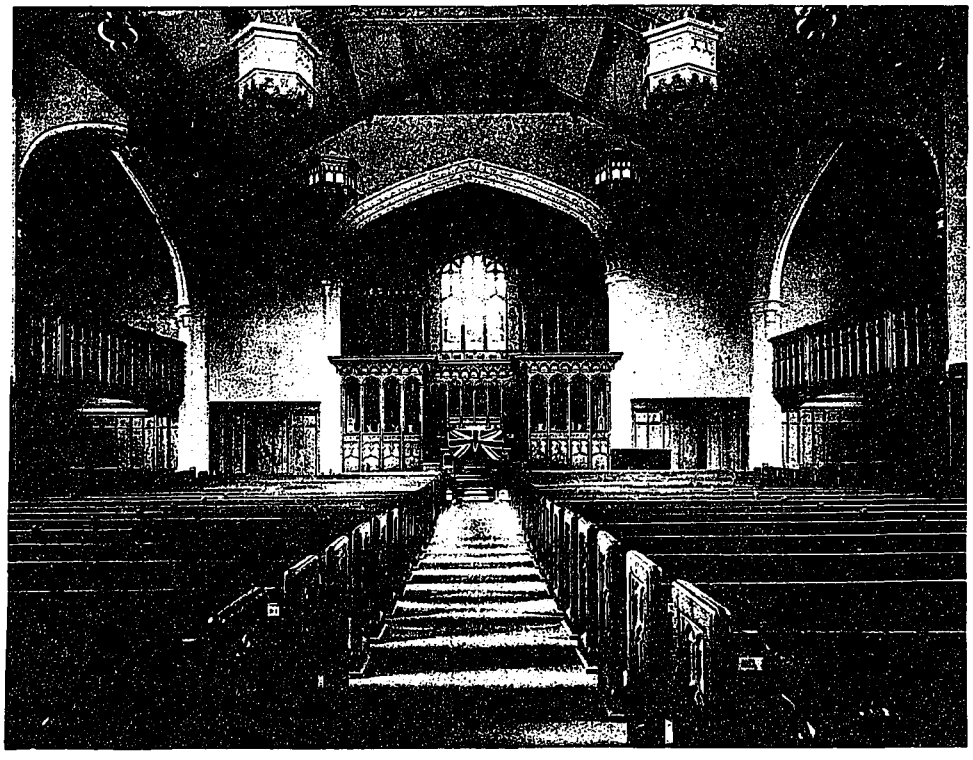
GROUND FLOOR PLAN, ST. GILES PRESBYTERIAN CHURCH, HAMILTON, ONT.



SECOND FLOOR PLAN, ST. GILES PRESBYTERIAN CHURCH, HAMILTON, ONT.

craftsmen, the lack of a general standard of taste, and the disturbing influence of fashion.

The traditional school, which to architects is the most important, has many obstacles to overcome before it regains its once-honored status. Its exponents are conservative of the old methods, but are keenly alive to modern thought and prefer to advance with circumspection. Notwithstanding such conflicting theories and apparent diversity of purpose among the competing artists, through the agency of the present competition several discoveries have been made. It is a well-merited triumph for the traditional school that the most important prize should have been awarded to an architect and a sculptor whose conjoint production is based on tradition—The group of sculpture flanked by trophies of war, submitted by Mr. E. A. Rickards and Mr. Henry Poole, and awarded the first prize, is indubitably the best on exhibition. The second award was secured by Mr. Eric Gill and Mr. Charles Holden. This design is of quasi-religious character; its symbolical meaning has little reference to the war, but, on the contrary, aims at high moral significance. Mr. Eric Gill is a recognized theorist of the intellectual group which is at present fashionable; he aims at originality based on archaic simplicity, but he should have recognized that the legend of our Lord driving the money-changers from the Temple is too sublime to suffer translation into material terms.



AUDITORIUM, ST. GILES PRESBYTERIAN CHURCH, HAMILTON, ONT. STEWART & WILTON, ARCHITECTS.

The design by Mr. Alan Wyon and Mr. Stanley Ramsey, awarded the third prize, is an example of modern classic imperfectly worked out, although, considered as an idea, the conception is striking. Mr. Ramsey is well known for his theories regarding the best French models of similar character, and it is all the more regrettable that the sculptor did not rise to the occasion in the design of the figure surmounting the pedestal.

Regarding the wall tablets submitted in the various classes, these are far from convincing, although in some instances remarkable for good inscriptions and excellent lettering. The tastes of the artists vary from traditional Renaissance motifs to designs of pronounced Egyptian and Hellenic ancestry.

Mr. Eric Bradbury was awarded the first prize for a mural tablet in bronze, the design of which falls in the latter category. Mr. Eden's novel design for a carved wood tablet is an example of rich and ingenious complexity, recalling the naturalistic conventions of Grinling Gibbons transposed to terms of Gothic.

The designs submitted in the class for a Village Fountain vary considerably in expression. Mr. Cyril Farey's conception appears more suited to a vast garden than to the simplicity of a village green, and the architectural treatment is labored and self-conscious. Other designs show sympathy for lych gates, seventeenth-century penthouses, and rude stone horse-troughs.

Among the lesser memorials for the home the medal stands designed by Mr. Arthur Stratton are the most distinguished, and reveal legitimacy of purpose and sound scholarship. It is a pity that the claims of tradition in this particular regard were overlooked by the jury in favor of the lesser importance of craftsmanship as displayed in the design of inlaid boxes, illuminated lettering, etc.

The Civic Arts Association did not expect to receive standardized designs ready for use, for the primary object, as stated before, was to make discoveries and bring the necessitous artist into direct touch with the patron. The fact that the movement has been well received in the provinces and that the sympathies of local authorities throughout the country have been invoked is of good augury, for the future holds many awkward problems in store.

A. E. Richardson (*F.*).

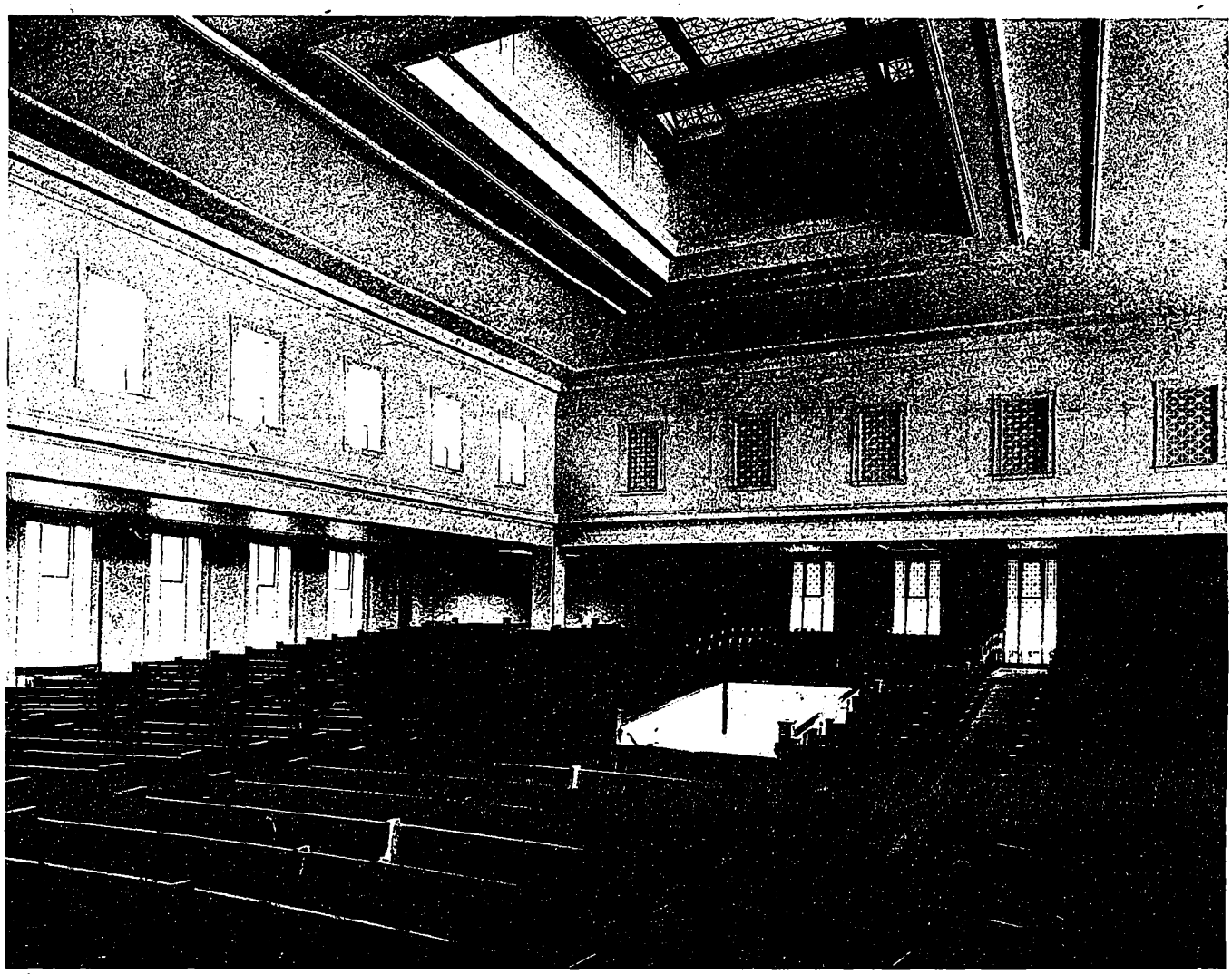
First Church of Christ Scientist, Toronto, Ont.

ARCHITECTURALLY, the new Christian Science Church, at the northwest corner of St. George street and Lowther avenue, may be described as a modern adaptation of Greek architecture, its general character being substantially that which prevailed in Greece and other countries during the first three centuries of the early Christian Church.

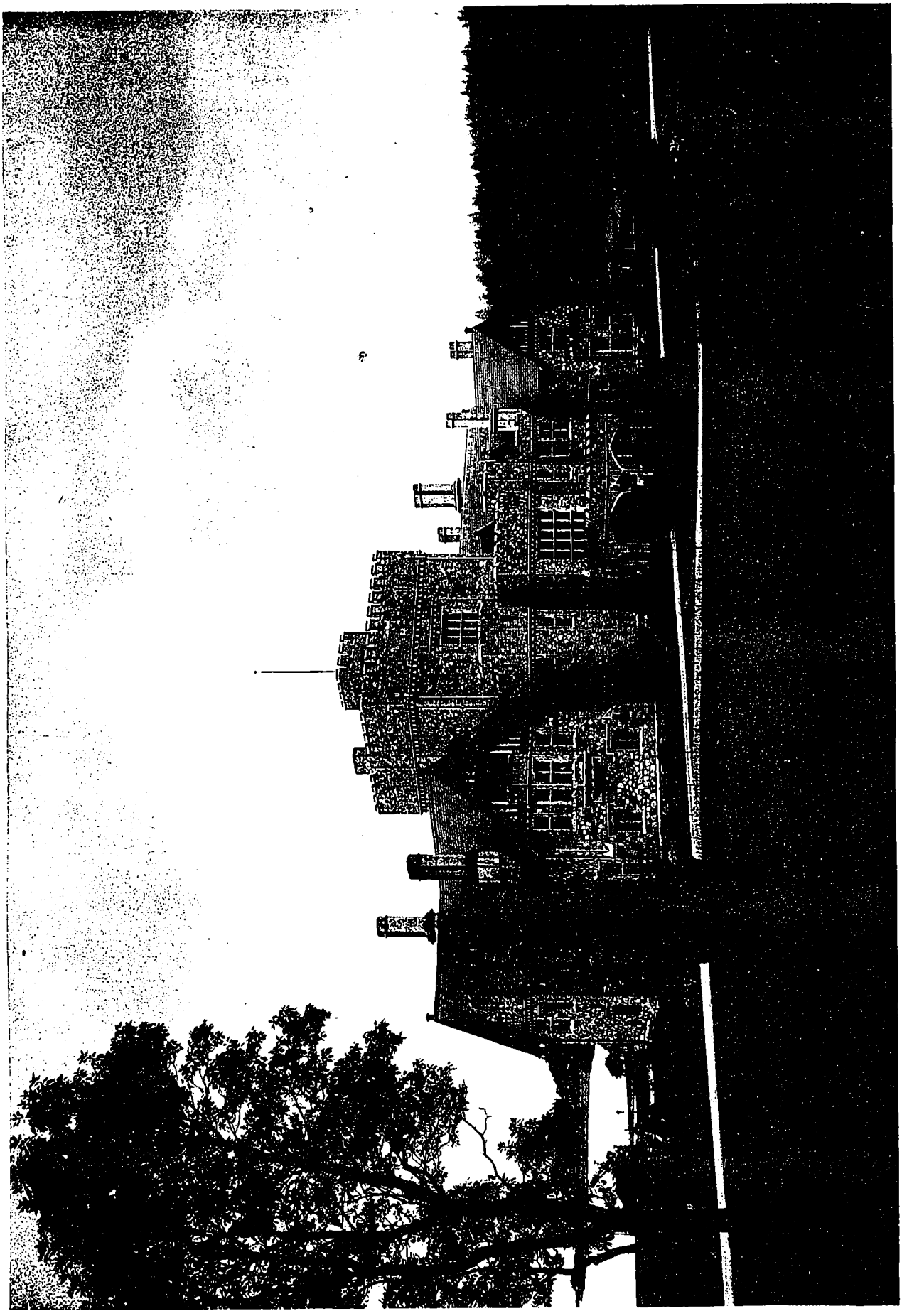
At the main entrance, on St. George street, is a row of fluted Grecian Doric columns. Crossing the loggia (illuminated at night by hanging lamps) the visitor passes through the main entrance into the vestibule, and through a second doorway into a spacious foyer. This is a feature of the church which distinguishes it from the usual church type. This foyer is large enough to accommodate about seventy per cent. of the audience standing, and fulfils the function of a large meeting place, for the people to exchange greetings after the service. Here Doric columns support the ceiling, and two fire-places are to be noted across the tiled space. On either side of the entrance, and accessible from the foyer, are the board and reading rooms, where Christian Science literature may always be found. Here also are three of the five stairways which give access to the auditorium on the floor above; the one facing the main entrance being a broad flight of steps leading to the front and centre of the auditorium to facilitate the seating of the congregation.

While in the foyer, those who wish may leave their hats, coats, umbrellas, and parcels in a room for this purpose, each person's various articles being given a separate compartment, and by an ingenious arrangement identified by one check. There are also comfortable and well lighted toilet rooms, sanitary drinking fountains, and a literature salesroom. The Sunday school room at the rear of the building is commodious, well lighted, and affords accommodation for about four hundred children.

Ascending to the auditorium, the visitor finds that everything has been done which would contribute to his comfortable enjoyment of the service. The nature of these meetings make it



AUDITORIUM, CHURCH OF CHRIST SCIENTIST, TORONTO, ONT. S. S. BeMEN, ARCHITECT.



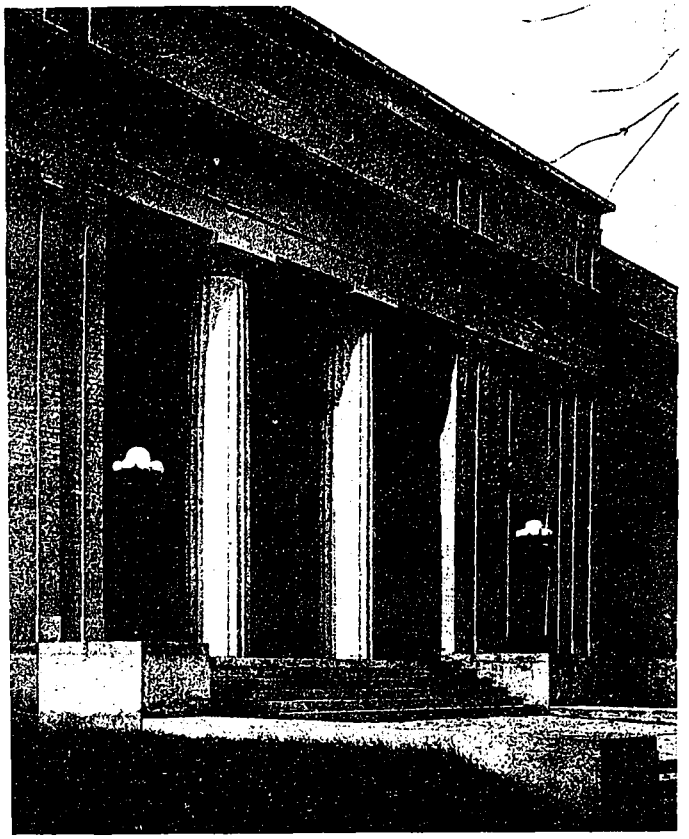
ENTRANCE FRONT, HATLEY PARK, RESIDENCE OF JAMES DUNSMUIR, VICTORIA, B.C., CANADA.

SAMUEL MACLURE, ARCHITECT.

necessary that the readers should be heard from every part of the room. All of these essentials seem to have been perfectly provided by the architect and builders of this church.

The lines of pews are concentrically set on a sloping floor, giving the visitor unobstructed view of the platform. Behind and above the reader's desk is a row of Doric pilasters, separated by a grille or screen of classic design, through which the invisible organ is heard. Illumination is largely by the indirect method, the visitor enjoying a soft yet ample light, undisturbed by any lighting fixtures.

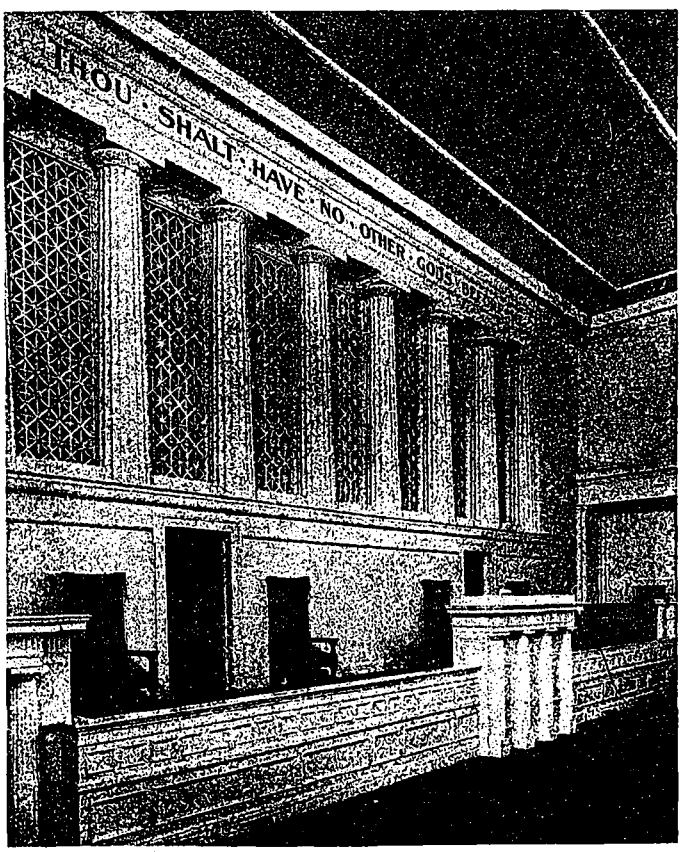
It will thus be seen that the general design and features of the church are of a practical and utilitarian character, and these basic necessities are beautifully clothed in a most artistic and convenient architectural form.



FRONT FACADE, CHURCH OF CHRIST SCIENTIST, TORONTO, ONT.

Curious Church Architecture

The parish church of Ormskirk, in Lancashire, England, has a tower and a spire side by side. The tower is built over the porch at the west end, and the spire is placed as closely as possible to it. The origin of this architectural freak has not been ascertained, but there is a tradition to the effect that when Orme, the Saxon pirate from whom the town derives its name, decided to construct a kirk, or church, as an expiatory offering for his evil deeds, his two daughters quarreled over the design for the structure. One determined to have a tower; the other was equally resolved to have a steeple. As neither of them would give way, the pirate chief acceded to both their wishes, and the curious may see the tower and spire still keeping watch side by side on the surrounding country. —*Exchange.*



READERS' DESK, CHURCH OF CHRIST. SCIENTIST, TORONTO, ONT.

The Great Mistake

The great mistake made by the young architect at the beginning of his career is usually his failure to recognize that the world in which he lives is not supremely interested in Architecture written with a capital letter, and has not the time or inclination to make a close and intimate examination of the architect's qualifications. On the other hand, everyone enjoys pleasant and congenial companionship in daily life, and the architect who has lived a self-centered life of absorption in one pursuit is frequently a dull or boring companion in society. His natural anxiety as to his own future will, unless he is careful, operate directly against his chances of success, and when he obtains work he should remember that it is more to his advantage to have converted a client into a friend than to have pleased himself with the design of a building which, in any case, he will regard as a tentative effort in the future. We do not mean that he should be as wax in the hands of his client, or fail to do his utmost to produce good work, but he should avoid the mistake of over-estimating the importance of what he is doing. —*The Builder.*

CONSTRUCTION

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CONTRIBUTIONS.—The Editor will be glad to consider contributions dealing with matters of general interest to the readers of this Journal. When payment is desired, this fact should be stated. We are always glad to receive the loan of photographs and plans of interesting Canadian work. The originals will be carefully preserved and returned.
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FRASER S. KEITH - - - EDITOR AND MANAGER

Vol. IX Toronto, December, 1916 No. 12

Develop The Profession

In his letter to the editor, which appears on this page, Mr. Baker takes a laudable stand in reference to architectural affairs, and briefly touches upon points of outstanding interest to architects, and with an important bearing upon the future of the profession.

Mr. Baker's point in connection with the need of greater aggressiveness in respect to the education of architectural students is well taken, but it does not go far enough. The architectural profession in Canada will never fulfil its highest function nor reach its due and proper position until some suitable system of registration or recognized standard of qualification to practice is established. Educate the youth as we may, give them the best facilities the country offers in the way of advantages, insist on thoroughness and mastery of all necessary details pertinent to the functions of an architect, and then leave the door wide open, that anyone who desires may call himself an architect and secure work as an architect, will not advance the profession as a whole one iota. Talk as we may about raising the standard by means of a higher educational advantage for the students and agreeing amongst ourselves that we will do everything possible, personally, to maintain the traditions of the profession is but sounding brass and tinkling cymbal until we find some means of protecting the profession and the public against the man who is not qualified to practice.

This should be done, not five or ten years hence, but right now.

6th December, 1916.

Editor of Construction:

A feeling of gratification and admiration must fill the breasts of those architects who are left at home still, at the spontaneous response so many members of the profession, their assistants and students, have made to the urgent call to arms of King and Country, Their enlistment and conduct in the war has added lustre and honor to the profession, and I am sure that at the proper time a suitable means will be found to perpetuate the memory of their noble action.

The course of the war is having a wonderful effect on Canadian character, and the country is passing through a very critical time. Architects in the ordinary routine of their work can do much to aid in moulding the character of the people, and I am sure that their constant effort will be to create in this young country a spirit of honor, thoroughness and energetic progress in every direction, at the same time using all their influence against that undue haste which invariably produces superficial results. England is to-day greatly strengthened and supported by her glorious traditions, resulting as they have from the high principles and thoroughness which have for generations characterized the mother country.

This is a time, too, when the calling in of professional advice from foreign countries, unless absolutely necessary, should be avoided. Canadians should support each other at every turn. Architects, like other men, have bills to pay, and cannot lightly turn to other employment. They properly rely upon their fellow countrymen, as they would also give them their own support. This, with the careful conservation of all resources, will help materially to bring this young country into line with the best traditions of the mother country.

Those foreigners who come here to settle are, of course, most welcome, and will soon be assimilated and made to feel at home. Those who come in for one piece of work, and then go home with the money, do this country a double injury. Our policy in regard to this should be a broad and generous one, but "Canada for the Canadians" must ever be before us.

There is undoubtedly a serious lack of aggressiveness on the part of architects in the matter of the education of the students, and the holding of meetings from time to time. A younger generation of architects must be brought along, we cannot stand still because there is a war. In the course of time the war will, we trust, come to the desired end, and architects will be required then for the immense amount of construction work which is ahead of us. It is not a healthy condi-

tion for the architects to go along without meeting from time to time to discuss those things which affect the profession in a general way. These meetings should not always be informal, but should be recorded, having in mind the future history of the country.

The press of the country could do much at a time like this to further those high aims which must come to a people whose finest young men have shown and are showing such splendid patriotism and courageous loyalty in defence of their country. Possibly it is not going too far to ask, have our journalists risen to the occasion? and to appeal to the daily papers of the country for a higher standard. The people are longing for it, and would rather pay a higher price for their daily paper, if that is necessary to ensure sound journalism in the highest sense of the term.

Architects, individually and collectively, should redouble their efforts not only to ensure good building and good architecture, but to see that students are trained and encouraged to provide for the future of Canada, the great advancement of which everything now points to.

Yours, F. S. BAKER.

A Forward Movement

The recent action on the part of some of our foremost banking institutions in resuming building operations suspended entirely after war broke out, promises much in the way of building activity for the coming year. Last year and most of this year until a month or two ago, it was extremely difficult, if not impossible, for contractors generally to secure loans for new buildings. The whole situation has been changed so that, within the limits of existing conditions, next year will see a substantial amount of building construction in Canada.

Canadians Not Barred

The interpretation placed upon the enforcement of the Alien Labor Act of the United States by J. H. Clark, United States Labor Commissioner at Montreal, as shown by a letter published on this page in August, gave unmistakable evidence that he considered Canadian architects, engineers and contractors in the same class as mechanics, and consequently they were barred from undertaking work across the border. Inasmuch as Mr. Clark has exercised control of emigration from Canada to the United States, and was in a position of authority, it became evident that we were being discriminated against.

We are glad to state that Mr. Clark's interpretation of the United States Act was not in accordance with its intent, and it is to be hoped that the authorities at Washington have so notified him.

Letters received from the United States Department of Labor and the Treasury Department, Washington, prove clearly that whatever may have been Mr. Clark's contention in respect to the Act, he was acting under an erroneous conviction. Considerable comment and not a little feeling was aroused in the minds of Canadian architects and engineers over the situation, but the atmosphere has been cleared by the letters to Mr. H. Macdonald, Acting Secretary of the Canadian Manufacturers' Association, in response to an enquiry from him.

U. S. DEPARTMENT OF LABOR, BUREAU OF IMMIGRATION

Washington, November 3rd, 1916.

H. Macdonald, Esq., Canadian Manufacturers' Association, Toronto, Ont.:

Dear Sir,—Receipt is acknowledged of your letter of the 26th ult., enquiring whether Canadian civil engineers and architects are permitted to practice their respective professions in the United States, and whether they are eligible to contract for the erection of Government works or civic buildings.

In reply, you are advised that professional engineers and professional architects who come to the United States to practice their respective professions, are regarded by the Bureau as members of a "recognized learned profession," and eligible to enter this country under the exception to the contract labor provisions of the Immigration Statute (Act of February 20th, 1907), in favor of that class. This information is furnished you because it is assumed you have reference to the admissibility of members of these two professions under the United States immigration law, given in the enclosed pamphlet. (See Sections 2, 4, 5 and 6.)

So far as your letter relates to the privilege of Canadian civil engineers and architects to practice their respective professions in the United States, this office can only say it knows of no instance in which engineers and architects have been denied said right or privilege, or have been discriminated against by private manufacturers and construction firms because of the Canadian citizenship or alienage of such engineers and architects.

Your enquiry as to whether Canadian civil engineers and architects are permitted to contract for the erection of Government works or civic buildings is being referred to the Treasury Department, which can more properly give consideration to this question, and that Department requested to advise you in the premises.

Respectfully,
(Sgd.) C. T. HAMPTON.
Acting Commissioner-General.

TREASURY DEPARTMENT.

Washington, November 13th, 1916.

Mr. H. Macdonald, Acting Secretary, Canadian Manufacturers' Association, Toronto, Canada:

Sir,—Your inquiry of the 26th ult., addressed to the Immigration Bureau, Department of Labor, has been answered in part by the letter of the 3rd inst., from the Acting Commissioner-General of Immigration, stating that professional engineers and architects are regarded as members of a recognized learned profession, and, therefore, eligible to enter this country.

Your inquiry if Canadian civil engineers and architects are permitted to practice their respective professions in the United States, and whether they are eligible to contract for Government work and civic buildings, has been referred by the Department of Labor to this Department for reply.

The practice of their profession in this country by alien architects and engineers, as far as privately-owned buildings or civic buildings belonging to the states or their municipaltiies are concerned, is dependent upon the laws and regulations on the subject of the individual states, in which connection it should be borne in mind that certain states require architects to be licensed, which in most cases involves appearance before a licensing board for examination. These states are California, Colorado, Illinois, Louisiana, Michigan, New Jersey, New York, North Carolina, Utah and Florida.

So far as this Department is aware, there is no general law of the United States which prohibits the employment of alien architects and engineers for Government work, either in the capacity of professional men or in the capacity of contractors, except the restriction placed upon the Secretary of War by the Act of Congress approved March 3rd, 1875, which provides "That in all contracts for materials for any public improvement, the Secretary of War shall give preference to American materials, and labor thereon shall be performed within the jurisdiction of the United States."

While the law does not bar alien contractors, the Government is not bound to accept the lowest proposal, and might give consideration to the trouble and inconvenience to which the Government would be subjected in enforcing its rights against a defaulting alien contractor in the courts of his own country.

Respectfully,
(Sgd.) B. A. NEWTON,
Assistant Secretary.

The authoritative sources of the above communications give ample assurance that Canadian architects and engineers are not prohibited from undertaking work with private concerns across the border, and in that respect, at least, we enjoy the same privileges as our American confreres do in Canada, except, of course, that in actual practice the benefit is all in favor of our friends to the south.

The Heating and Ventilating of Churches

By HAROLD L. ALT

THE ventilation problem in the modern church presents many angles for consideration, not the least of which is the fact that numerous churches are laboring under heavy debt and are, therefore, not at all anxious to spend any larger sum on the heating and ventilation end than is absolutely necessary. Added to this is the difficulty that some churches try to economize by standing cold during the week and heating up on Sunday only—a mistaken and dangerous policy.

The masonry construction of most churches, especially edifices built some time ago, is usually much heaiver than that of a corresponding theatre of equal size, and this results in extreme heat-absorbing capacity when churches once get cooled down.

Another consideration, and a most essential one, is that of noise, many churches having given up their ventilation equipment in disgust on account of not being able to use their systems during services owing to the objectionable noise.

Therefore, a heating and ventilating system, to give the utmost satisfaction possible, should combine (with all the other usual desirable qualities) a low first cost, a minimum amount of noise in operation, great capability of quick heating, and still must be simple enough to be operated by more or less non-expert janitors.

Owing to the auditorium-like arrangement there is no need of the individual duct system in the ordinary church, since the air from all sides of the building intermingles almost at once and forms a fairly equal temperature at various heights above the floor; for the same reason the double duct system need not be considered. In fact, the trunk line system seems to supply every needed function, being at the same time cheaper and simpler than either the individual or double duct system.

For the small or moderate-sized country and suburban church, the modern furnace has much to recommend it, many manufacturers paying particular attention to this sort of work. In the first place, it is absolutely quiet in operation, does not require any expert knowledge to run, cannot freeze up during the week, and supplies enough fresh air to meet moderate ventilation requirements. A recirculation connection combined with a carefully designed furnace equipment of this sort is a very practical solution of certain church requirements.

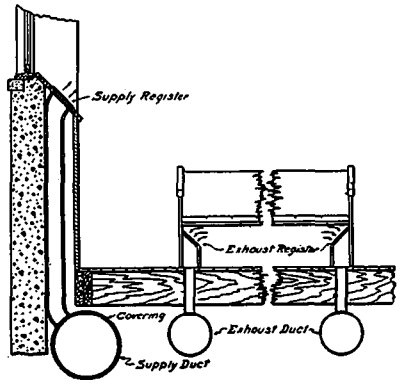

Fig. 1

In a large modern city church, which is the style of building with which this article particularly deals, the limitations of satisfactory furnace installations are exceeded, and some form of hot blast or fan system should be substituted.

Assuming the trunk line type of system has been settled upon for a large modern city church, the next point to be taken up is the location of inlets and outlets. A hot-air inlet in the aisle is objectionable on account of its being constantly walked over (thus receiving an excessive amount of dust), its poor distribution of the entering air (even when two or three such registers are used), and its unpleasant effect on the persons walking over it. Neither are hot-air inlets under the pews satisfactory, since they result in discomfort to persons sitting directly over them when the temperature is high, and must force more or less of their air through and around the clothing worn by the members of the congregation before this air rises to the breathing line.

Neither, on the other hand, do inlet registers in the ceiling and the use of downward ventilation entirely rid us of all our troubles, as the unusually high windows (present in most churches) result in very strong cold drafts downward, falling on those seated beneath such windows. All things considered, the most satisfactory location of inlet openings is in the window sills when the incoming warm air counteracts the cold down drafts, resulting in a tempered mixture of atmosphere which is thrown outward toward the centre of the congregation.

There is no objection to exhausting from outlets located beneath the pews, and this avoids the exposing to view of large exhaust registers which would otherwise appear in the walls or ceiling. In fact, when the window sill inlet is used, better results are obtained with floor exhaust outlets than with openings in the ceiling. This is apparent from the fact that the natural flow of air from the window sill inlet toward the ceiling outlet would not cross the breathing line of a single member of the congregation.

A cross section showing just such a window sill inlet and pew outlet is given in Fig. 1; both the supply and exhaust ducts in this particular case are run on the ceiling of the basement below.

Some systems only deliver supply air and let it find its way out through natural leakage. It does not seem, however, that it is reasonable to expect more than one, or at the utmost two, air changes per hour to find egress by this method. If more air (as is usually the case) is being supplied than two changes per hour, some provision should be made for taking care of the additional air furnished.

Many architects object to a radiator exposed to the view of the congregation, a much simpler expedient being the installation of a few additional rows of heaters at the fan and to warm as well as ventilate. This method involves the advantages of eliminating all the radiators, together with their steam and return piping, which would otherwise run promiscuously around the basement, and also cuts the first cost.

Practical trial, however, has developed several severe and radical failings in a purely hot blast system used without direct radiators. One of these is the well-known fact that while a hot blast system is at best rather slow in warming up a cold building (even with recirculation), the heavy walls of a church absorb so much of the first heat delivered to the room that a hot blast system otherwise perfectly adequate will have to begin operation Saturday afternoon to bring a cold building up to 70 degrees by 10 a.m. Sunday morning. This causes a jump in the electric power bill during cold weather that is nothing less than startling.

Another disadvantage is the inability to warm any room during the week without starting up the whole system and running the large fan. To some extent this may be overcome by a more or less complicated system of dampers, but can never compare in economy with the use of direct radiators for heat alone, and the blast system solely for ventilation effect.

The drawings shown in Figs. 2 and 3 are the basement and first floor plans of a church built a few years ago, in which the hot blast system is used in general without radiators.

This system was carefully designed in the extreme, flues being run to supply each class room individually, so that the doors of the class rooms could be shut, if desired, and ventilation still carried on.

The air was vented through the roof by means of two ventilators, one over the Sunday-school room and the other over the church. In the societies' room S, where the air supplied amounted to more than would be lost through natural leakage, a vent X was cut through into the church to allow a relief of the back pressure which might otherwise be created in the confined room. This hot blast system was most carefully figured and installed by engineers co-operating with the architect, and everything to make the system a success, which could be done, was done. In spite of this, as might be expected, the objections previously mentioned were found to exist in this installation. While a recirculation connection R (Fig. 3) was provided in the cold air downtake from the roof so that the outside cold air could be shut off and that in the church revolved over and over again, and ventilators V provided, it was found impossible to let the building get cooled down during the week and then heat it up on Sunday morning.

By starting Saturday afternoon and recirculating the air, the original 40-degree temperature (to which the interior of the church often fell during the week) could be raised up to about 60 degrees before shutting down for the night. During the night the temperature would drop back to somewhere around 52 degrees, and by starting up at 6 a.m. Sunday morning, it was possible to get as high as 65 degrees by 10.30 a.m. Continued operation during the day, even in extreme weather, shoved the thermometer up to above 70 degrees before evening, showing that the apparatus was amply able to maintain a proper temperature as soon as the walls ceased absorbing large quantities of heat.

To those who might say the apparatus should be increased, I would answer that this increase must amount to at least 100 per cent. over that already installed, since it would be necessary to accomplish the same heating effect (minus the drop during the night, of course) in about one-half of the time at present required.

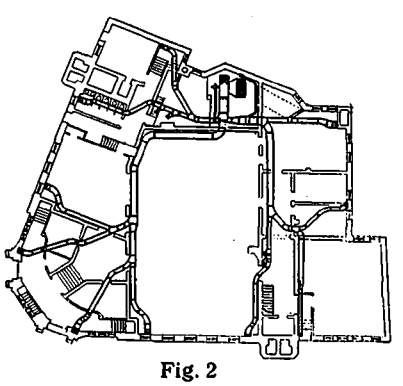

Fig. 2

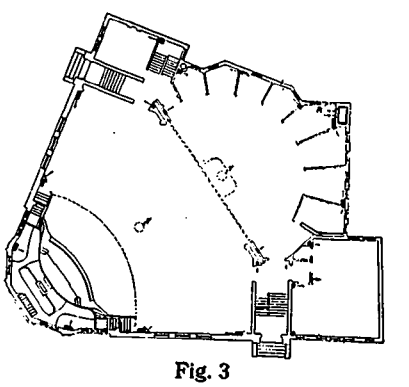

Fig. 3

To those claiming the building should be kept warm during the week, I would answer that this would entail a total of more hours of fan operation per week, as well as additional coal, thereby increasing not only the coal expense, but the power bill as well.

Let us turn away from the combined hot blast heating and ventilating system, and see what results are attained when the warm air is used solely for ventilation effect and the heating accomplished by direct radiators.

In the first place, this means that steam supply and return pipes must be run practically all over the basement, as well as the galvanized iron pipes used for the ventilating system, and that these pipes must be arranged so as not to interfere with each other. It also means a slightly higher first cost, this not being as much of an increase as might be expected, owing to the fact that the fan heater can be reduced to about 50 per cent. of the capacity otherwise required, besides which it is also unnecessary to provide a recirculation connection.

The advantage of heating positively all rooms regardless of direction of the wind or their isolated location, is obtained only with this system. By the simple expedient of valving each riser, and, possibly, two or three points in the mains, this heating can be accomplished without warming up the whole system and without the expenditure of any electric power whatsoever.

Moreover, no power need be used to operate the fresh air

system until the congregation is fully assembled, and often in bad weather when the attendance is small there is no discomfort experienced for an hour or so without operating the fan at all. With a proper amount of direct radiation installed it is possible to warm up a building in four or five hours, and the maintaining of a small fire under the boiler during the week will generate sufficient vapor to keep the building temperature from going down to a very low point, making it much easier to heat up than without the direct radiation.

As far as gravity air systems with the air in the flues heated by indirect steam or hot water radiators are concerned, they are naturally unsuited for church work. They have usually no practical way of recirculation, and, owing to most of the outlets being located at or near the floor level, the velocity of the heated air is very small.

With a heat stack hung on the basement ceiling it is often less than 24 inches to the outlet in the floor above, which means a great decrease in velocity; this requires, of course, excessive radiation and an undue number of outlets, which must also be of much larger size than required with a fan.

In fact, a church in which a system of the steam heated indirect gravity kind was installed in connection with an old type of propeller fan, is shown in Figs. 4 and 5, these being the basement and first floor plans after the heating was remodelled. This alteration was made necessary, needless to say, by the unsatisfactory operation of the indirect radiator system first installed; but the desire to avoid additional expense caused the utilization, as far as possible, of the old registers, which accounts for some of the idiosyncrasies in register shape and location as shown; otherwise the system is good.

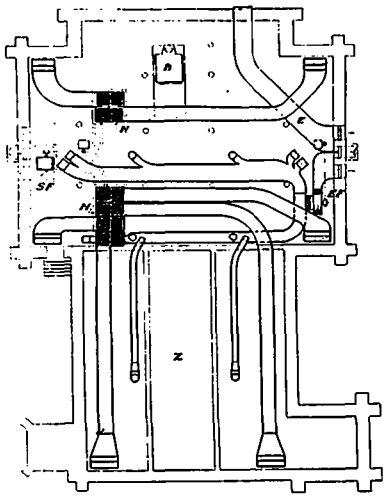

Fig. 4

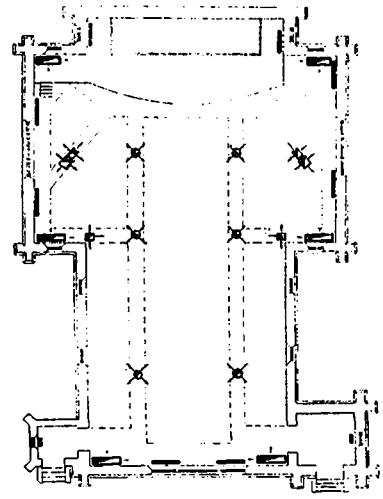

Fig. 5

Some of the readers of this article may question the showing of a system which is not "ideal" in every particular. Sad to say, systems "ideal" in every particular are few and far between. It is the purpose of this article not so much to theorize and vaporize on what should be—and is not—as it is to take practical installations which serve their purpose reasonably well—and which are installed.

It will be seen by referring to Fig. 4 that a fresh air chamber is located on one side of the basement in which a vertical down-discharge fan SF is located, the fan drawing the air out of the chamber and discharging it into an underground duct. The duct splits into two branches, one branch going to the rear heater chamber, and the other to the front heater chamber. The pressure produced by the fan drives the air upward in the heating chambers and through the indirect heaters H into the supply ducts on the ceiling, which carry the heated air to the various supply registers. This air is not intended to heat it, serving to ventilate only; the heating is accomplished by the direct radiators shown in Fig. 5. The system would have been improved had the supply registers been placed under the windows, but money was not available to permit this radical change. An elevation of the supply fan and one heater chamber is shown in Fig. 6.

The exhaust is pulled out through the various exhaust registers by a fan EF (located on the other side of the basement across from the supply fan), which discharges the air on the opposite side of the building. The discharge air from the adjacent Sunday school is carried out through the duct E, although this does not affect the church system in any way; Z indicates unexcavated cellar.

This system has the advantage of supplying fresh, cool air, if desired, just as efficiently as hot air, and keeps the power bill at the minimum.

A most important matter in the installation of a church system is the elimination of noise to the greatest possible extent. Of course, this is always desirable in any system, but it must receive particular attention in churches. The average church, while having massive masonry walls, for some reason seems to have poorly constructed floors; a few have concrete or terra cotta floor constructions, but most have only wooden floor joists with plaster below and flooring above, this construction having no more sound proof qualities than possessed by the ordinary frame house. Therefore, while noise is specially objectionable, the normal construction means of deadening such noise is unusually poor. Noise in fan systems is generally produced by one or more of several distinct causes. These may be divided into fan noises, caused by too high speed or improper alignment; air noises, caused by high velocities; belt noises, when belts are used; motor hum, present to greater or less extent in all motors; and vibration noises, caused by improper or unstable foundation.

In cases of improper alignment, of course, the remedy is easily applied; while maintaining air velocities of 1,200 feet per minute or less will generally prevent the sound of the air moving through the ducts. The matter of fan speed should be carefully looked into before specifying a fan; in general a tip speed not to exceed 3,000 feet per minute will be quite conservative, but the recommendations of the manufacturers of the particular fan specified should also receive consideration.

Belt noise is always present where the motors are belt connected to the fans, but this trouble may be aggravated by looseness and improper joints.

The hum of the electric motor is a sound of apparently small moment, yet in alternating current motors it is of a peculiarly penetrating character. Many engineers regard the motor hum as deserving of more consideration than the fan which the motor drives. Let us see what means may be taken to overcome the various noise troubles.

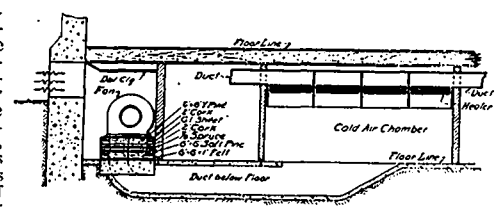

Fig. 6

In Fig. 9 is shown a fan and motor installed in what may be termed a "first-class standard manner." Both the fan and motor are set on substantial concrete foundations, A being a 4 by 6 inch yellow pine frame halved together at the corners and bolted to the foundation bolts, the heads of which are countersunk into the frame. The fan is lag-screwed to the frame, and a 2-inch cork separator pad C is placed between the frame and the concrete foundation F; the motor is set in a similar manner. With ordinary first-class apparatus, properly installed, and masonry floor construction, this arrangement is fairly satisfactory. With wooden joists, plaster ceiling, and common flooring above, the motor hum from this installation will be plainly audible in the church, and other more efficient means should be adopted.

In Fig. 7 is shown a method of confining the motor hum so as to render it unobjectionable, but this method does not kill the noise of the belt or the fan. A, C and F in this figure indicate the same materials as in Fig. 9, while the canvas joint shown should be used on any and all fans wherever installed. It is impossible to operate a fan without having a certain amount of noise from the moving air and revolving parts; this is transmitted from the fan to the duct, which telephones it direct to the room outlets, unless the metallic connection is broken by the canvas connection, this being usually made about 8 inches long. With Fig. 7 the noise might still be heard to an objectionable extent in the church, but, on the other hand again, it might not, this depending largely on the fan and its peculiarities.

In Fig. 8 a much superior method of sound deadening is shown, this having proved satisfactory in almost every case. Here A is a yellow pine frame as previously described; B is ⅞-inch tongued and grooved stock; C consists of two layers of 2-inch cork, and D is another layer of ⅞-inch boards, binding the whole together; E is piano felt 1 inch thick and in strips 6 inches wide; while F is a common concrete foundation. Sometimes lead or rubber washers are used under the foundation bolt nut heads, which are recessed in the frame, the fan being lagscrewed as before, while the hung ceiling over the entire apparatus gives a double dead air space between the fan room and the church. Of course, it is necessary to carry the regular basement ceiling straight through on the bottom of the joists in order to produce the double space, but after being thus treated this installation may be safely located under any portion of the church.

Where basement head room is scanty, various expedients are adopted, the best of which lower the grade of the fan room floor until the method shown in Fig. 8 can be used. Where this is not practical, an expedient such as is shown in Fig. 10 may be used. Frankly, this will not be as efficient as the method shown in Fig. 8, but it is fairly satisfactory.

When exhaust fans are located on upper floors the problem is also best solved by the scheme shown in Fig. 8, the foundation F being carried on suitable structural steel supports. Where the head room is limited, a structural steel support arranged as shown in Fig. 11 will also give good results.

One thing that should be remembered in all fan installations carried on steel supports is "mass in the foundation." In other words, there must be sufficient weight in the foundation mass to absorb the vibration of the fan, for, although small, this vibration is present just the same.

As an example of this in aggravated form it may be interesting to note the case where one of the large public service companies recently installed some blowers for forced draft purposes. These blowers were driven by direct connected steam turbines, thus eliminating all reciprocating parts, but of course they operated at a much higher speed than the ordinary fan. The blowers were located on a steel platform constructed of 15-inch I beams swung across the firing aisle between the two rows of boilers and supported on the steel building columns. The beams were designed with a factor of safety of twelve, and had a 4-inch reinforced concrete slab to form a walkway around the apparatus.

In spite of all that the manufacturers' experts and the company's engineers could do, this platform shook so when the apparatus was started that it was impossible to stand on it without holding on to the handrail. Numerous suggestions for remedy were made and tried out, but none sufficed until a common wooden form was built under the bottom of the I beams, and the 4-inch concrete slab torn off, and a new slab, 15 inches deep, extending from the top to the bottom of the beams, was poured in its place. No further trouble from vibration was experienced, simply because the increased weight of the mass was sufficient to absorb the vibration.

The same effect in a lesser degree is present in every fan carried on steel members, and the presence of a 12-inch concrete slab under the entire area covered by both the fan and the motor, while a simple matter during construction, will save much annoyance that might occur.

WAR AND INDUSTRIAL ECONOMICS PRESENT AND POTENTIAL.

The military phases of the war, which at the moment are of intense significance, cannot appropriately be discussed in a technical journal, but the critical position at present, and the suggestion it conveys of a prolonged conflict, invests with renewed importance the economics of the situation. In the process of attrition financial resource must be a dominant factor. Expenditure is growing, debt is mounting up, and it is incumbent upon

A FRENCH PAINTER'S JOKE ON THE CUBISTS.

This picture was one of the features of the exhibition of work by contemporary French artists at the National Exhibition. It is entitled "A Showman's Speech," and shows a cubist painter trying to sell a skeptical old gentleman one of his freak pictures.

H.R.H. THE DUKE OF CONNAUGHT LAYS CORNER-STONE OF NEW PARLIAMENT BUILDINGS.

This function, which was the last important ceremonial in which Their Excellencies took part at the Canadian capital, occurred on September 1st, 1916. The portrait of the Princess Patricia, who stands in the rear of her father and mother, is the finest snap-shot that has ever been taken of her.

all concerned with that production, which means the accumulation of money, to face their responsibilities. Thus no excuse need be made by us for insisting time and again upon the necessity for thought and action in the maintenance of our national income. The strategic skill and resource of our generals and their staff, the valor and self-denying courage of our troops, and the continuous and untiring effort of munition-producers, all combined, may not serve to achieve a victory without lasting disadvantage from the Imperial standpoint. More is necessary. We must keep our exchequer fully supplied now and in the future. We have at present the co-operation of the industrial resources of neutral nations in helping to augment war supplies. It is necessary that we should now export productions rather than gold to pay for such purchases. Consequently the maintenance, if not the increase, of the output of disposable manufactures now is a vital duty. To increase them in the future is equally important, in order that the war shall not involve a permanent injury to our financial and commercial stability.

The advance in the price of commodities, involving war bonuses, as it has rightly or otherwise done, is economically unsound. The cost of production has as a result been augmented, because, in the great majority of cases, the increase in wage is not counterbalanced by greater output. Goods for home and foreign use are made dearer. Thus the cost of living tends to rise still more, while at the same time it becomes more and more difficult to add to the volume of our export trade. Only by this latter means can our financial condition be made satisfactory. We do not propose to enter here into the somewhat abstruse question of the influence of paper currency on the value of gold, or into the effect on foreign exchanges of the accumulation of gold in neutral countries, due to payments by belligerent countries for war supplies. It will be recognized, however, that, in effect, adverse rates of foreign exchange must influence adversely the cost of food supplies brought to this country. This is another reason why the aim must be, as far as possible, to pay for our raw material and food supplies—and, in as great a measure as is feasible, also for our war material—by exporting manufacturers. This can only be done by a full recognition on the part of the employer and worker of their national duty to ensure economic equilibrium between the exports and imports. The latter may be decreased by stringent economy in consumption, with the further advantage that savings may be invested for personal gain and national weal. The exports may be increased by greater and more efficient manufacture. The difficulty in achieving the latter is intensified by the great number of workers withdrawn from their ordinary avocations for military service either in the trenches or in munition factories. It is difficult to compute the number of these, but Professor W. R. Scott, the occupant of the Chair of Political Economy in Glasgow University, in the inaugural lecture of the session, computed that the number for Europe was 25,000,000. We do not think that this is by any means an excessive estimate; it is probable that in this country alone there are 10,000,000 workers who have ceased to contribute by labor towards national income. We have seen it stated, and many hold the view, that, as the money paid for war work is put into circulation, the expenditure is not lost. There can be no greater fallacy. As the production resulting from the expenditure of this money is non-reproductive, it does not add permanently to the nation's wealth. The money spent in producing a time-fuse, which is fired away with a shell in the European war, cannot, by any trick of the imagination, be regarded as comparable with the money given to the same workers for producing a sewing machine or similar piece of mechanism, capable of augmenting wealth. While we cannot avoid the task thrust upon us of wasting money on shot and shell to be fired away in the four corners of the Continent, we must, at the same time, try to counterbalance the account by maintaining, as far as possible, our output of wealth-producing manufactures for home as well as, and particularly, for export.

There are but two ways of increasing the production of marketable goods at the present juncture; by the fullest possible utilization of all mechanical appliances available, and by the utilization of all physical effort that the nation can mobilize. Lord Derby's scheme of recruiting must in its result reduce the number of young men who might be more effectively employed industrially than at present. It will, as a consequence, be necessary to draw into the net for the output of manufactures a still larger volume of female labor. Indeed, the question must soon arise as to whether some Government department, either existent or to be created, should not tackle the problem of maintaining our export trade in order to rectify the economic difficulty which threatens us. We are glad to note that the Home Office has this week appointed a committee in connection with female labor on commercial work. We need one also for utilizing the remaining female labor for augmenting manufactures to adjust the economic situation. This phase of the conflict is apt to be lost sight of, because industrial economics is not sufficiently considered in our commercial life. As a science it is ignored. This is not the time to enforce the advantage, for all employers as well as workers, of becoming familiar with economic principles and their application; but we hope that one of the changes which will come as a consequence of the intensity of life resulting from the war will be a fuller recognition of the need for a study of industrial economics. Professor Scott, in his lecture, not only established a strong case for such recognition, but illustrated the advantages by his admirably informing survey of the influence of economics, not only on modern warfare, but on post-bellum conditions. He defined economic science as "the explanation of the phenomena of the economic life of a country," and this surely involves the whole industrial fabric of a nation. The phenomena have become much more important owing to the war, and the ravages already disclosing themselves, so that it is well that we should at once tackle the problems which must arise sooner rather than later.

The post-bellum conditions will raise new problems. There will be the question of the re-distribution of labor at home. Uncertainties prevail regarding the markets for our exportable productions. As Professor Scott pointed out, certain goods and certain kinds of skilled labor bear at the present time a "scarcity value," and there have been indications that the sellers, both of goods and labor, have endeavored to obtain a "scarcity price"—in some cases even a monopoly price. If the scarcity ceases, prices alike for material and labor will fall, and there will come a corresponding readjustment of real wages, which will be to the advantage of the unskilled worker. But to what extent this will operate is uncertain. What must be aimed at, not only now, but in the future, is economy in life in consumption of all classes of goods which can be exported, associated with the highest productive efficiency in labor. This does not necessarily mean the cheapening of labor, but rather the ensurance of the highest degree of productivity for a given expenditure, both of labor and the mechanical appliances utilized by labor.

The war, too, has involved immense governmental interference with the conditions accepted, and more or less service-emergency measures takable in peace time. The

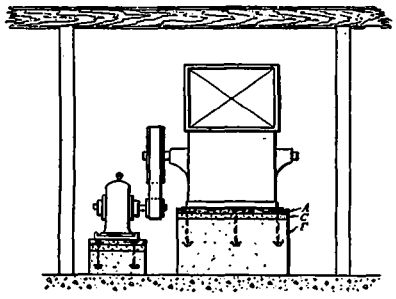

Fig. 7

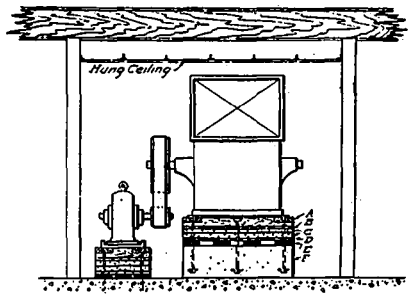

Fig. 8

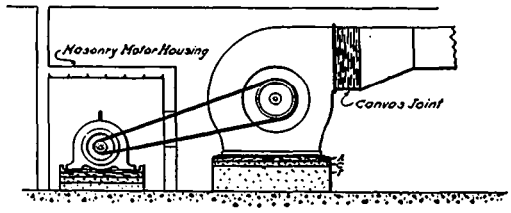

Fig. 9

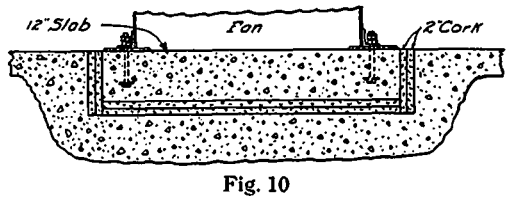

Fig. 10

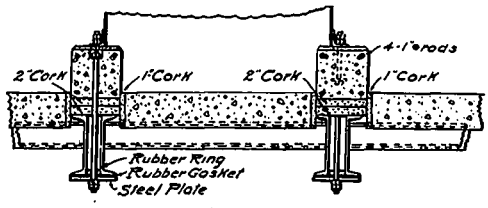

Fig. 11

economic point of view, as he pointed out, war is a colossal waste, and a part of that waste, which may be necessary for military reasons, is the limitation and restriction of individual initiative. The war is being fought in the interests of national freedom and for the maintenance of free institutions. Our whole history establishes these to be consistent with, and a source of strength to, our national life. Yet the same spirit which commends representative democratic government is manifested in the growth of individualism in commerce, which is most conducive to the stimulation of the power of initiative in industry. Thus, while the war may lead us into new avenues of progress, there is every probability that the changes made may not be so much in basal principles as in a fuller realization of the fact that the economic soundness of a nation, at peace as well as at war, can only be founded on prudent economy, in order to limit the outflow of gold to foreign countries, and on the subordination of all effort to the utilization to the fullest extent of our mental, physical, and mechanical resources.

NEW OFFICE BUILDING FOR CALGARY.

A handsome new office building will soon be erected in Calgary at the corner of Fourth street west and Ninth avenue, for the Robin Hood Mills, Ltd. The building, which was designed by W. S. Bates, A.R.I.B.A., will be two stories in height, built of reinforced concrete, faced with tapestry brick and artificial stone trimmings. The contractors are Fraser & Bennett, a local firm. An interesting feature of the new building is an experimental bake shop, which will be located on the first floor, for the purpose of testing all flour from day to day.

CONSTRUCTION NEWS

Information of Special Interest to Architects Contractors, and Manufacturers. Construction Building Reports will Give You Up-to-date Information Every Day on all New Buildings About to be Erected or in Course of Erection.

BUSINESS BUILDINGS.

Galt, Ont.—Plans are being prepared for a business block for Dr. W. S. McKay, Main St., and Dr. W. S. Dakin, 63 Water St. North, to cost $15,000.

Hagersville, Ont.—Geo. Frid Co., Ltd., Bank of Hamilton Building, has been awarded the contract for the erection of a bank for the Bank of Hamilton, at Hagersville; Gordon Hutton, Bank of Hamilton Building, is the architect.

Kentville, Nova Scotia.—The sanatorium at Kentville will be enlarged for military purposes.

Kingston, Ont.—The Military Hospital Commission, Ottawa, are contemplating the erection of a hospital to accommodate one thousand patients.

London, Ont.—Architect W. J. Carmichael, care of the Bell Telephone Co., Montreal, has prepared plans for an addition to the telephone exchange, on Park Ave., to cost $75,000. Tenders are being called by Architect L. Carrothers, Bank of Toronto Building, for the erection of an office building, for the Utilities Board, London, to cost $75,000.

Niagara Falls, Ont.—Tenders have been received by the Accountant of the Royal Bank of Canada, Niagara Falls, for the erection of a bank, at Niagara Falls, to cost $40,000; C. M. Borter, Main St., Niagara Falls, is the architect; Ireland & Dinham are the general contractors.

Ottawa, Ont.—Frank Hunt, 115 Arlington Ave., Ottawa, has been awarded the plastering contract on an office building for the Dominion Loose Leaf Co., Wellington St., to cost $30,000; Luford Ltd., 70 Rideau St., have been awarded the painting contract; McFarlane & Douglas Ltd., 250 Slater St., have been awarded the roofing contract; McCallum Electrical Co., 525 Bank St., have been awarded the electrical contract; Gauthier & Co., 247 Dalhousie St., have been awarded the plumbing and heating contract; Doran & Devlin, 104 Sparks St., are the general contractors; Richards & Abra, Booth Building, Sparks St., are the architects.

Renfrew, Ont.—Work has started on a business block for John Mitchell, Renfrew, Ont., to cost $15,000; G. T. Moore, Renfrew, is the general contractor.

Windsor, Ont.—David Coutts, 70 Church St., has been awarded the contract for the erection of a store and office building for Dr. S. J. Minard, Pitt St., to cost $20,000; Hugh Sheppard, Campbell Ave., is the architect. W. M. Walker, 41 Jeannette Ave., has commenced work on a business block for R. Beusette, Wyandotte St., to cost $7,500.

Windsor, Ont.—F. Reaume, River Front, Sandwich East, has been awarded the electrical wiring contract for a hospital addition for the Hotel Dieu, Ouellette Ave., to cost $40,000; Jos. J. Heuroaux, 17 Wyandotte St., has been awarded the heating and plumbing contract; J. R. Boyd, 240 Ouellette Ave., is the architect.

CLUBS, HOSPITALS, THEATRES AND HOTELS.

Byron, Ont.—Tenders are open for the erection of a hospital for the London Health Association, London, Ont., to cost $75,000; Watt & Blackwell, London, are the architects.

Byron, Ont.—The Dennis Wire and Iron Works have been awarded the iron contract for the addition to the sanitorium for the London Health Association, and A. & E. Nobbs, William St., London, have been awarded the stone contract; Watt & Blackwell, Bank of Toronto Chambers, London, are the architects.

Guelph, Ont.—Wm. Checklen, Guelph, has been awarded the mason contract for a theatre for Geo. Reinhart, Guelph, to cost $15,000; Joseph Maylor, has been awarded the carpenter contract; R. J. Pepper has been awarded the cement contract; Oscar Strome has been awarded the plastering contract; R. Robson has been awarded the heating contract; A. Malcolm has been awarded the painting contract; W. Gowdy has been awarded the stone work; the Hamilton Bridge Co., Hamilton, Ont., has been awarded the steel contract; Colwill Boothe & Co., Guelph, are the architects.

Hamilton, Ont.—W. B. Charlton, 515 Indian Road, Toronto, has been awarded the general contract for the erection of a hospital addition for the Hamilton Health Association; J. J. Evel, 51 Stanley Ave., is the secretary; the hospital will cost $50,000; Capt. W. L. Symons, Military Hospital Commission, 22 Victoria St., Ottawa, is architect.

Hamilton, Ont.—Architect Captain W. L. Symons, Military Hospital Commission, 22 Victoria St., Ottawa, has prepared plans for a tubercular hospital, to cost $400,000. Architects Stewart & Witton, 7 Hughson St., have prepared plans for an addition to the hospital of the Hamilton Health Association, to cost $50,000. Architect L. W. Lambe, care of L. M. Shenck, 1493 Broadway Ave., New York, is preparing plans for a theatre for Loews Ltd., on King and St. Mary Sts., to cost $200,000.

Kitchener, Ont.—Plans have been prepared for a hospital for the Sisters of Charity in Queen's Park, to cost $30,000.

Montreal, Que.—The Atlas Construction Co., Ltd., Montreal, have been awarded the general contract for the erection of the Marcus Loew theatre, to cost $900,000, at the corner of Catherine and Mansfield Sts.

Oshawa, Ont.—J. D. Storil Fittings Ltd., Oshawa, President of the Hospital Board, is receiving tenders for alterations to the Oshawa Hospital, to cost $20,000.

Port Brice, Ont.—E. Johnston, Aylmer, Ont. has prepared plans for a summer hotel, to cost $10,000.

Quebec, Que.—Architect P. Levesque, Quebec, is preparing plans for a hospital at Villeguay, Quebec, to cost $25,000.

St. Thomas, Ont.—Work has started on a picture theatre for R. H. McLean, St. Thomas, to cost $10,000.

Union-on-Lake, Ont.—Henry E. Foster, John St., Leamington, has commenced work on a hospital for the Essex Health Association, Ruthven, Ont.; Charles White, Leamington, Ont., has been awarded the mason and plastering contracts, and A. E. Law, Leamington, Ont., has been awarded the heating and plumbing contracts; J. C. Pennington, LaBelle Building, Windsor, Ont., is the architect.

Vancouver, B.C.—The New Pantages Theatre will be completed in January; B. Marcus, architect.

Windsor, Ont.—Urel Jacques, 160 Dougal Ave., has commenced work on a hospital addition for the Hotel Dieu, Ouellette Ave.; Cross Brothers, 25 Louis Ave., have been awarded the mason contract; J. R. Boyd, 240 Ouellette Ave., is the architect.

FIRE LOSSES.

Bathurst, N. B.— The beautiful gray granite edifice of the Sacred Heart Roman Catholic Church was destroyed by fire; loss $10,000.

Bolton, Ont.—The Ontario Hotel and a store and residence were destroyed by fire; loss $15,000.

Delhi, Ont.—The Sovereign Mitt & Glove Company's factory was destroyed by fire; loss $15,000.

Frankford, Ont.—Graham & Co.'s factory was destroyed by fire; loss $8,000.

Galt, Ont.—Woolworth Company's store on Main St. was damaged by fire to the extent of several thousand dollars.

Kelowna, B. C.—A fire which partly damaged one section of Kelowna is estimated to have done damage amounting to $10,000.

Montreal, Que.—The stores from 242 to 250 St. James St., Montreal, were destroyed by fire.

Newark, Ont.—The cheese and butter factory of Robert Snell were destroyed by fire; loss $3,000.

Ottawa, Ont.—The warehouse of Stewart & Co., 34 Rideau St., on Sussex St., was destroyed by fire; loss $10,000.

Peterborough, Ont.—The electric light plant was partially destroyed by fire; loss $3,000.

Quebec, Que.—The Limoilou Parish Church, Quebec, was destroyed by fire; loss $180,000.

Regina, Sask.—The electric light plant of Grand Coulee and a blacksmith shop were destroyed by fire.

Saskatoon, Sask.—The elevator of the British America Co. at Harris, Sask., was destroyed by fire; loss $40,000.

Toronto, Ont.—Brickey's boat house was destroyed by fire; loss $5,000.

Toronto, Ont.—The factory of Adams Brothers, 204 King St. East, was destroyed by fire; loss $50,000.

Truro, N.S.—The Kemp Building was destroyed by fire; loss $40,000.

Wiarton, Ont.—The sawmill of Johnston, Hunter & Crawford was destroyed by fire; loss $100,000.

Winnipeg, Man.—Borbridge Saddlery Company's warehouse was destroyed by fire; loss $100,000.

Woodslee, Ont.—The store of Louis George and the Odd Fellows' Hall were destroyed by fire; loss $6,000.

MISCELLANEOUS.

Chatham, Ont.—Architects Adams & Adams, Chatham, have prepared plans for a salesroom for the Gray Dort Auto Co., Chatham, to cost $6,000.

Chatham, Ont.—Blonde & Little, Chatham, have been awarded the mason contract for the salesroom of the Gray Dort Motor Co., on William St., to cost $6,000.

Collingwood, Ont.—Bull Bros., Collingwood, are erecting a garage on Hurontario St., to cost $10,000; P. C. Palin, Collingwood, is the architect.

Fort William, Ont.—M. Sellers & Son, Fort William, will erect a grain elevator, to cost $150,000.

Galt, Ont.—The Perfection Machine Co., Samuelson St., have commenced work on a moulding shop, to cost $7,000.

Hamilton, Ont.—Work on a subway for the City of Hamilton will start next spring, to cost $8,000.

Hamilton, Ont.—Work on the electric incline railway for the City of Hamilton will not proceed this fall.

Hamilton, Ont.—A. A. Lees, 47½ Main St. East, is preparing plans for a garage on Jackson St., to cost $10,000.

Hamilton, Ont.—Architect E. B. Patterson, 143 Wentworth St. North, has prepared plans for a garage for A. Venator, 222 John St. North, to cost $8,000.

Hamilton, Ont.—Tenders may be called before January 1st for the erection of an addition to the waterworks, to cost $600,000. E. R. Gray, City Engineer. Plans have also been prepared for a 20,000,000 gallon reservoir.

Hamilton, Ont.—Architect E. B. Patterson, 143 Wentworth St. North, has prepared plans for a garage for Thos. Ramsay, 15 Market St., to cost $15,000. Work on a Labor Temple for the Trades and Labor Council, Hamilton, will not proceed this fall, the temple will cost $35,000. The City of Hamilton will spend $20,000 on a new fire alarm system; L. M. Wright, Hamilton, is chairman of the Commission.

Kingston, Ont.—The City of Kingston intends to build a dock at the foot of Clarence St., to cost $10,000.

London, Ont.—S. H. Foxworthy, 616 Waterloo St., has commenced work on a garage for J. M. Moore, 425 Richmond St., to cost $8,000.

London, Ont.—New plans have been prepared for garbage stables for the City of London, to cost $10,000, the former plans being too costly.

London, Ont.—John Hayman & Sons, 432 Wellington St., London, are erecting car barns for the London & Port Stanley Railway, on Grey St., to cost $12,000. R. G. Wilson & Son, 197 College Ave., London, have been awarded the contract for remodelling the Salvation Army Citadel on Clarence St., to cost $10,000; Brigadier-General Miller, 20 Albert St., Toronto, is the architect.

Mimico, Ont.—Work has started on the Masonic building for the Connaught Lodge, A.F. & A.M., Superior Ave; C. Coxhead, Mimico, has been awarded the cement contract.

Moncton, N. B.—Frasers Limited are considering the erection of a new pulp mill on the Chatham Head site, near the end of the Morrisy Bridge.

Montreal, Que.—The International Manufacturing Company, 65 Victoria St., will erect a powerhouse on Notre Dame St. East, Mercier Ward, to cost $10,000.

Montreal, Que.—The Nicholson Construction Co., Ltd., Montreal, have been awarded the contract for erection of car barns for the Montreal & Southern Railway.

New Toronto, Ont.—Reed Products Co., of Toronto, have been awarded the contract for the erection of an incinerator for New Toronto, to cost $10,000.

Ottawa, Ont.—Architect John A. Pearson, J. O. Marchand (Associate), Ottawa, have received tenders for interior stone for the Parliament Buildings.

Ottawa, Ont.—Sutherland & Son, 216 Cooper St., have commenced work on a garage for the Ottawa Car Co., Slater St., to cost $60,000; W. E. Noffke, Plaza Building, is the architect.

Ottawa, Ont.—R. C. Desrochers, Secretary of Public Works, will receive tenders up to December 22nd, 1916, for British Columbia fir timber and for white oak timber, for Dredge No. 125.

Ottawa, Ont.—T. H. Cathcart, 9 Melrose Ave., and E. Webster, 124 Breeze Hill Ave., both of London, have been awarded the contract for the erection of a flax building for the Ontario Government.

Ottawa, Ont.—Alexander Carlock, 136 Lewis St., has commenced work on alterations to a garage for F. D. McFarlane, 250 Slater St., on Sparks St., to cost $7,000; W. H. George, Castle Building, is the architect.

Ottawa, Ont.—McKinley & Northwood, Rideau St., have been awarded the plumbing contract on a restaurant for Bowles Lunch, Ltd., 149 Yonge St., Toronto, to cost $40,000; J. T. Blyth, Frank St., has been awarded the heating contract; Hand, Harris & Merritt, 9 King St. East, Toronto, are the architects.

Point Abino, Welland, Co., Ont.—Tenders close January 15th, 1917, for the erection of a reinforced concrete lighthouse for the Dominion Government; plans and specifications at the Harbor Master's Office, Toronto, and at the Post Offices in Welland, Hamilton and Brantford.

Port Stanley, Ont.—Work has started on a refreshment pavilion and bath house for the London & Port Stanley Railway, to cost $25,000; Watt & Blackwell, Bank of Toronto Building, London, are the architects.

Toronto, Ont.—J. T. Turner, 110 Dearbourne Ave., has commenced work on a garage for J. Tulloch, 59 Cambridge Ave. Tenders have been called by the City Architect for wiring and lighting fixtures for the Don incinerator.

Toronto, Ont.—H. N. Dancy & Son, C. P. R. Building, have been awarded the mason contract for the Masonic Temple, for the Masonic Temple Corporation of Toronto, Limited; Curry & Sparling, 105 Bond St., are the architects; the building will cost $175,000.

Toronto, Ont.—The Dominion Bridge Co., Ltd., 20 Victoria St., Toronto, have been awarded the steel contract on the Art Museum at Toronto, to cost $60,000; Purdy Mansell, Ltd., 63 Albert St., have been awarded the plumbing and heating contract; Architectural Bronze & Iron Works, Lansdowne Ave., have been awarded the ornamental iron contract; Witchall & Son, 156 St. Helena Ave., have been awarded the mason contract; Darling & Pearson, 2 Leader Lane, are the architects.

Toronto, Ont.—H. N. Dancy & Son, Ltd., have been awarded the general contract for the erection of a boiler room and garage for Stauntons Limited, 944 Yonge St., Toronto. Tenders are invited by S. G. Whaley, 2411 Yonge St., for the erection of a garage, to cost $6,000. Architect Major Barry has prepared plans for a shed at the Old Fort, to cost $10,000. Architect F. S. Mallory, 65 Adelaide St. East, has prepared plans for a garage and show rooms for T. A. Rowan, 59 Victoria St., to cost $8,000.

Trenton, Ont.—Architect A. Dunbar, 402 Kent Building, Toronto, has prepared plans for a studio for the Canadian National Features, Ltd., to cost $10,000.

Vancouver, B. C.—J. S. Emerson and E. Dubey, Vancouver lumbermen, are considering the erection of a sawmill. The B. C. Sulphite Fibre Co. has filed plans with the Government for a water right; they intend to build a dam about three-eighths of a mile south of Mill Creek, for the purpose of storing one hundred million gallons of water.

Vittoria, Ont.—Work has started on a sawmill for J. E. Butler, Vittoria, Ont., to cost $7,000.

Weston, Ont.—Work has been postponed until next spring on the pavilion for the National Sanitarium Association at Weston; Denison & Stephenson, 18 King St. West, are the architects.

Windsor, Ont.—Work has commenced on a flat building for Winter, Williamson & Little, 16 Pitt St., to cost $5,000.

PLANTS, FACTORIES AND WAREHOUSES.

Brantford, Ont.—The United Rubber Co., Ltd., are making alterations to their factory, to cost $10,000.

Brantford, Ont.—R. T. Chisholm, Brantford, has been awarded the general contract for alterations to the factory of the United Rubber Co., Ltd., to cost $10,000.

Cobourg, Ont.—The Lydia Pinkham Medicine Co., Montreal, Que., contemplate the erection of a factory, to cost $40,000.

Cornwall, Ont.—A. Adams, Cornwall, Ont., has been awarded the general contract for the erection of an addition to the St. Lawrence Brewery Co.'s factory on Water St., to cost $10,000; Walter J. Francis & Co., 260 St. James St., Montreal, are the architects.

Elmira, Ont.—The Canadian Consolidated Rubber Co., Montreal, contemplate the erection of a factory.

Galt, Ont.—P. H. Secord & Sons, 133 Nelson St., Brantford, Ont., have been awarded the contract for the erection of a factory for the Galt Brass Co., Ltd.; J. Evans, 30 North Water St., Galt, is the architect.

Galt, Ont.—P. H. Secord & Sons, 133 Nelson St., Brantford, have been awarded the general contract for the erection of an addition to the factory of Sheldon's Limited, Galt, Ont., on West Main South, to cost $20,000.

Guelph, Ont.—The Robson Motor Car Co. are making a number of alterations to their warerooms.

Guelph, Ont.—W. E. Taylor, 82 Eramosa Road, has been awarded the mason contract on a factory for the Guelph Stove Co., to cost $10,000. Geo. Ibbotson, Woolwich, has been awarded the carpenter contract; Dennis & Bennett, 22 Suffolk St., have been awarded the painting contract; Irving & Son have been awarded the roofing contract.

Guelph, Ont.—Geo. C. Walker, Guelph, has been awarded the general contract for the erection of an addition to the factory of the Munder Tungsten Lamp Co., to cost $15,000; Rundel & Son have been awarded the mason contract; J. J. Mahoney has been awarded the plastering contract; Fred Smith, has been awarded the plumbing contract; Frank Schuelt has been awarded the sheet metal and iron work contract; Dennis and Bennett have been awarded the painting contract.

Hamilton, Ont.—H. G. Christman & Co., Sun Life Building, Hamilton, have commenced work on a new factory for the Canadian Cartridge Co., on Sherman Ave. North, to cost $15,000.

Hamilton, Ont.—The American Car Company, Emerald and Shaw Sts., are preparing plans for an addition to their factory, to cost $25,000. Work has commenced on an addition to the factory of the Cummer Dowswell Co., on Elgin St., to cost $10,000; Stewart & Witton, 7 Hughson St. South are the architects.

Hamilton, Ont.—The Canadian Shovel Co., Hamilton, Ont., have started work on a factory and boiler house on Imperial St., to cost $6,000; McPhee & Kelly, Bank of Hamilton Building, are the architects. The Canadian Engineering Co., Bank of Hamilton Building, have started work on a temporary factory for the Hamilton Steel Co., on Palmerston Ave., to cost $8,000; George F. Smith, 26 Carrich Ave., has been awarded the carpenter contract; Thos. Irwin & Son, MacNab St. North, have been awarded the roofing contract; Prack & Perrine, Lumsden Building, Toronto, are the architects.

Hamilton, Ont.—Architects Stewart & Litton, 7 Hughson St. South, have prepared plans for an addition to the factory of the Tallman Brass & Metal Co., Ltd., Wilson St., to cost $50,000. Geo. E. Frid Co., Bank of Hamilton Building, have commenced work on an addition to the factory of the Standard Underground Cable Co., to cost $35,000; Prack & Perrine, Lumsden Building, Toronto, are the architects. The Watkins Medical Co., Winona, Minn., U.S.A., will erect a warehouse and factory at Hamilton, to cost $100,000. The W. T. Rawleigh Co., Freeport, Ill., U.S.A., have prepared plans for a factory on Barton St. East, to cost $100,000.

Hamilton, Ont.—Mitchell & Riddell, 115 Florence St., have been awarded the mason contract for an addition to the factory of the Cummer Dowswell Co., Elgin St., to cost $10,000; R. T. Paog & Co., Westinghouse Ave., have been awarded the carpenter contract; Hill Brothers, 317 Emerald North, have been awarded the plastering contract; Stewart & Litton, 7 Hughson South, are the architects. Thos. E. Irwin & Co., McNab St. North, have been awarded the roofing contract for an addition to the factory of the Canadian Cartridge Co., on Sherwin Ave. North, to cost $15,000; H. G. Christman & Co., Sun Life Building, are the general contractors. Turner, Day & Woolworth, Louisville, Kentucky, will erect a factory on Depew St.

Indian River, Ont.—The Farmers' Dairy Co., Toronto, are erecting a dairy building at Indian River, to cost $10,000; H. Shurter has been awarded the mason contract; Wm. Saxby, Peterboro, has been awarded the plastering contract.

Kitchener, Ont.—Plans have been prepared for an addition to the factory of the W. E. Wolfe Shoe Co., Ltd., 127 Wilmot St., to cost $15,000.

Kitchener, Ont.—C. Braun, 295 King St. West, has commenced work on a factory for the Consolidated Felt Co., on Margaret Ave., to cost $30,000; C. Cowan, 200 Victoria St., is the architect.

London, Ont.—The Ford Motor Co., London, Ont., contemplate the erection of a factory, to cost $50,000.

London, Ont.—R. G. Wilson, 193 College St., has been awarded the general contract for the erection of an addition to the factory of F. Lawrason, 643 Nelson St., to cost $5,000; W. G. Murray, Dominion Savings Building, is the architect.

London, Ont.—Jas. Moran & Sons, London, have commenced work on an addition to the factory of the McClary Mfg. Co., Wellington and King Sts., to cost $40,000; The Canadian Bridge Co., Walkerville, Ont., have been awarded the steel contract; J. M. Moore, 415 Richmond St., is the architect.

Mimico, Ont.—Toms Contracting Co., Kent Building, have commenced work on a factory for the Dominion Abrasive Wheel Co., at Mimico, to cost $60,000.

Montreal, Quebec.—The International Fuse and Arms Co., U.S.A., will erect a large munition plant in Mercier Ward.

Montreal, Que.—H. Morgan & Co., Beaver Hall Hill, will erect a warehouse on Park Ave., St. Lawrence Ward, to cost $35,000.

Montreal, Que.—The International Manufacturing Co., 65 Victoria St., will erect a factory on Notre Dame East, Mercier Ward, to cost $280,000.

Niagara Falls, Ont.—Work has started on an ice plant for the Sure Ice and Cold Storage Co., at Niagara Falls, to cost $20,000.

Niagara Falls, Ont.—The Canadian Aloxite Co., Niagara Falls, will erect an addition to their factory, to cost $35,000; L. J. Call and Son, Niagara Falls, are the engineers. Work has started on a pickle factory for the Niagara Falls Pickles Ltd., Clark St., to cost $6,000; George Murray, Niagara Falls South, has been awarded the mason contract.

New Toronto, Ont.—The Dominion Bridge Co., Imperial Life

Building, have been awarded the steel contract on a factory to be erected for the Dominion Abrasive Wheel Co., New Toronto, to cost $65,000; A. B. Ormsby Ltd., 48 Abell St., have been awarded the steel sash contract; the Toms Construction Co., Ltd., Kent Building, Toronto, are the general contractors. L. E. Dowling, 167 Yonge St., has been awarded the general contract for the erection of an addition to the factory of the National Electric & Heating Co., 544 Queen St. West, to cost $5,000.

Ottawa, Ont.—Tagon & Lackey, 23 First Ave., have commenced work on a storehouse and garage for the Bell Telephone Co., Montreal, on Catherine St., to cost $35,000; W. J. Carmichael, architect.

Renfrew, Ont.—Wm. A. Moore, Renfrew, Ont., has commenced work on an addition to the factory of the Renfrew Textile Co., Renfrew, to cost $10,000; John McNicol, Renfrew, is the architect.

Stratford, Ont.—The Mooney Biscuit Co., Ltd., will make an alteration to their factory, to cost $10,000. The City of Stratford may take over this property and alter it for a convalescent hospital, if so plans will be prepared by Capt. W. L. Symons, Architect for the Military Hospital Commission, 22 Victoria St., Ottawa.

Sudbury, Ont.—La Berge Lumber Co., Sudbury, have been awarded the contract for the erection of a creamery and cheese factory for the Sudbury Co-operative Creamery Co., Ltd., to cost $10,000.

Thorold, Ont.—The Standard Steel Construction Co., Port Robinson, have commenced work on a factory for the Exolon Co., to cost $60,000.

Tillsonburg, Ont.—The Maple Leaf Tool Co., Tillsonburg, are erecting an addition to their factory, to cost $10,000.

Toronto, Ont.—The Hydro Electric Commission of Ontario will commence work on a canal between Chippewa Creek and Queenston, to cost $9,000,000.

Toronto, Ont.—P. W. Ellis & Co., Ltd., 31 Wellington St. East, have commenced work on an addition to their factory on Prescott Ave., to cost $10,000.

Toronto, Ont.—The Construction Supply Co., Ltd., Bell Telephone Building, Toronto, have been awarded the contract for mastic floors in the factory for the Goodyear Tire & Rubber Co., at Weston, to cost $750,000; the Dominion Construction Co., 14 Wellington St. East, are the general contractors. Work will not start this fall on the factory for the Matthews Brothers, Dundas and Sterling Road, to cost $30,000; Ellis & Ellis, Manning Chambers, Toronto are the architects. Architect J. A. MacKenzie, Lumsden Building, has prepared plans for an addition to the factory of the Kilgour Davenport Co., 44 Osler Ave., to cost $10,000.

Toronto, Ont.—J. V. Gray Construction Co., Confederation Life Building have been awarded the general contract for the erection of a storage building for the Canadian Fairbanks Morse Co.; T. Pringle & Son Ltd., Excelsior Life Building, are the architects. The Dominion Machinery Co., 110 Church St., have prepared plans for a factory on Darling Ave., to cost $6,000. Page & Co., Queen's Park, have been awarded the mason contract on an addition to the factory of W. H. Banfield & Son, Ltd., 372 Pape Ave., to cost $15,000; Dominion Bridge Co., Ltd., Imperial Life Building, have been awarded the steel contract; J. C. Scott has been awarded the carpenter contract; H. Williams & Co., 23 Toronto St., have been awarded the roofing contract; G. M. Bryan, 524 Yonge St., has been awarded the skylight contract; Sproatt & Rolph, 36 North St., are the architects. L. E. Dowling, 167 Yonge St., has commenced work on a storehouse for the Dunlop Tire and Rubber Co., 244 Booth Ave., to cost $6,000. Brown & Cooper Ltd., 297 Carlton St., have been awarded the contract for the erection of an addition to the Toronto Laundry Machine Co's. factory, to cost $7,000.

Toronto, Ont.—C. L. Yolles, 67 Baldwin St., architect and contractor, has commenced work on a factory for F. Daville, 191 George St., to cost $13,000. J. Everard Myers, 4 Gould St., has been awarded the electrical contract for the factory of P. W. Ellis Co., Ltd., 31 Wellington St. East, on Prescott Ave., to cost $10,000; F. F. Saunders, 23 Jordan St., is the architect. Architects MacVicar & Heriot, 104 Union Ave., Montreal, are revising the plans of the warehouse on Front St., Toronto, for Cassidy's Ltd., 51 St. Paul St. West, Montreal, to cost $90,000. J. Everard Myers, 4 Gould St., Toronto, has been awarded the electrical contract for the factory of the Northrup-Lyman Co., on Wellington St. West, to cost $50,000. Robt. Jordan, 37 Hazelton Ave., has been awarded the plumbing contract on a bread factory for the Ideal Bread Co., 18 Dovercourt Road, Toronto; R. G. Kirby, 537 Yonge St., is the general contractor. Work will not start on the bakery for Jas. Dempster, 244 Dundas St., until next spring it will cost $7,000. H. N. Dancy & Son Ltd., C.P.R. Building, Toronto, have been awarded the mason contract on a factory for Harry Webb Co., 23 Buchannan St., to cost $40,000; Raymond Construction Co., 43 Victoria St., have been awarded the concrete contract; J. F. Brown, Board of Trade Building is the architect. John Aldreidge & Co., 128 Westmount Ave., have been awarded the mason contract on an addition to the factory of the Kilgour Davenport Co., on Osler Ave., to cost $10,000; E. A. Cale, 312 Wellesley St., has been awarded the carpenter contract; Robert Rennie & Son, 198 Dupont St., have been awarded the roofing contract; John Ritchie Ltd., 56 Adelaide St. East, have been awarded the plumbing and heating contract; J. A. MacKenzie, Lumsden Building, is the architect. J. H. Tromanhauser Co., Ltd., Temple Building, have been awarded the general contract for the erection of a warehouse and elevator for the Western Canada Flour Mills, 74 King St. East, Toronto, to cost $25,000.

Trenton, Ont.—The British Chemical Co., Ltd., will erect a chemical plant, to cost $500,000.

Victoria, B. C.—Wm. W. Northcott, Superintendent of Public Works, has received tenders for the erection of a storeroom at the Garbally Yards, for the City of Victoria.

Windsor, Ont.—The Sterns Tire & Tube Co., of Canada Ltd., Windsor, contemplates the erection of a factory on Howard Ave., to cost $100,000.

Winnipeg, Man.—The Franklin Co. will erect an addition to their plant at Winnipeg, to cost $500,000.

RESIDENCES, STORES AND FLATS.

Hamilton, Ont.—Plans have been prepared for an apartment house on Maple Ave., for B. B. Cope, 34 Albert St., to cost $15,000.

Hamilton, Ont.—Architect W. H. Hunkin, Lister Block, Hamilton, has prepared plans for an apartment house for Harvey Levitt, Beamsville, to cost $10,000.

Hamilton, Ont.—Architect W. A. Edwards, Hughson South, has prepared plans for a residence for Miss McCandlish, 163 Wellington St. South, to cost $6,000. Plans have been prepared for an apartment house for M. Sanzone, 99 Park St., to cost $10,000.

Hamilton, Ont.—Isbister Brothers, Jackson and Hughson Sts., have been awarded the mason contract on a residence for Miss McCandlish, 163 Wellington St. South, to cost $6,000; J. Evans, 237 Hunter St. West, has been awarded the carpenter contract; W. A. Edwards, Hughson St., is the architect.

Hamilton, Ont.—J. Buscombe, Dundurn St. North, has been awarded the mason contract in connection with alterations to an apartment house on Main and Hughson Sts., for E. D. Cahill, Sun Life Building, to cost $5,000. Tenders will be received by the architect, B. F. Richardson, 1 Market St., for the balance of the trades. T. A. Wooley, 64½ King St. East, has prepared plans for his residence on Proctor Boulevard, to cost $6,000; work will start about Christmas. M. Chirig, 76 Flatt Ave., has been awarded the mason contract on two residences for T. A. Wooley, 64½ King St. East, to cost $12,000; H. Baylis, 372 Beach Road, has been awarded the plastering contract; J. Paul has been awarded the painting and glazing contracts; J. A. Dynes, 161 Sanford South, has been awarded the electric wiring contract; C. Smith, 171 Lock St. South, has been awarded the plumbing and heating contracts. R. Spicer, 279 Bay St. South, is the general contractor. Hill Brothers, 307 Emerald St., will erect a residence on Proctor Boulevard, to cost $5,000; Lewington & White, 140 Rosslyn Ave., have been awarded the mason, sheet metal and steel contracts; T. Hobbs & Son, 313 Emerald St. West, have been awarded the carpenter and roofing contracts.

Humberstone, Ont.—Work has not yet commenced on a residence for S. J. Quinn, Buffalo, N.Y., at Humberstone, Ont., to cost $6,000; C. M. Borter, Main St., Niagara Falls, is the architect.

Indian River, Ont.—Work has started on a dairy and residence for the Farmers' Dairy Co., Toronto; Elphgrave & Barrett, 571 Gilmour St., have been awarded the general contract; H. Shurter, Peterborough, has been awarded the concrete contract.

Oakville, Ont.—Architects Wickson & Gregg, Kent Building, Toronto, have prepared plans for a residence for J. W. Flavelle, Jr., Queen's Park, Toronto, to cost $30,000.

Oakville, Ont.—Architects Munro & Meade, 34 Hughson St. South, have prepared plans for a residence and garage for W. F. Eaton, Ravenscliffe Ave., Hamilton, to cost $40,000.

Ottawa, Ont.—T. J. Somerville, 28 Waverley Road, has commenced work on a residence and store on Clemow Ave., to cost $7,000.

Ottawa, Ont.—Mr. Wilson, corner Lisgar and Kent Sts., has commenced work on a store and apartment house for Leon Petegorsky, 351 Chapel St., to cost $16,000; Robert Holmes, 80 Arlington Ave., is the architect.

Ottawa, Ont.—Cuthbertson & Clark, 710 Echo St., have been awarded the general contract for the erection of a residence for D. Cuthbertson, 710 Echo St. Geo. A. Earman & Co., 1171 O'Connor St., have commenced work on a residence for E. Stanfield, 82 Belwood Ave., to cost $5,000. Work has started on an apartment house on Seneca St., for Frank Wilson, 9 Roslyn Ave., to cost $5,100.

Port Colborne, Ont.—Architect C. M. Borter, Niagara Falls South, has received tenders for the erection of a store and residence for David Dick, Welland, Ont., to cost $6,000.

Port Stanley, Ont.—Hon. C. S. Hyman, Grand Ave., London, will erect a residence at Port Stanley, to cost $30,000.

Toronto, Ont.—Work has commenced on a residence on Hyland Ave., for H. Ireland, 18 Weybourne Ave., to cost $6,000.

Toronto, Ont.—James Elliott, 98 Concord Ave., has been awarded the plumbing contract on an apartment house being erected by J. T. & H. Hutson, 43 Victoria St., to cost $35,000.

Toronto, Ont.—J. T. & H. Hutson, 43 Victoria St., have commenced work on an apartment house, to cost $35,000. Plans have been prepared for a duplex residence for W. V. Dixon, 249 Yonge St., to cost $6,000.

Toronto, Ont.—J. R. Hunter, 50 Chicora Ave., has prepared plans for his residence on Stibbard Ave., to cost $6,000. Work has commenced on an apartment house on St. Mary's St., for Johnston & Sutherland, Room 25, 16 King St. West, to cost $15,000. Plans have been prepared for a residence for J. H. C. Durham, Craigmore Farm, Bond Lake, Ont., to cost $6,000.

Toronto, Ont.—John McGonegal, 28 Jackman Ave., has prepared plans for a residence on Jackman Ave., to cost $6,000. Davidge & Lunn, Sykes Ave., Weston, have been awarded the mason contract on a residence for H. B. Johnston, on Elm Ave., to cost $22,000; Charles Cooper, 382 Dupont St., has been awarded the carpenter contract; E. J. Curry, 57 Queen St., has been awarded the plastering contract; Wm. Paris, 82 Amelia St., has been awarded the painting contract; R. S. Gray, 85 York St., has been awarded the wiring contract; Sheppard & Abbot, 78 Harbord St., have been awarded the plumbing contract; Jos Harrison, 8 St. Mary St., has been awarded the heating contract.

Toronto, Ont.—R. H. Forsythe Confederation Life Building has been awarded the wiring contract on a residence for A. A. Thompson, 88 Warren Road, to cost $12,000; tenders for plastering and heating closed December 6th; Edwards & Edwards, 18 Toronto St., are the architects. Douglas Brothers, 124 Adelaide St. West, have been awarded the roofing contract on a residence for E. L. MacLean, 98 Walmer Road, to cost $15,000; the Italian Mosaic & Tile Co., Ltd., Manning Chambers, have been awarded the marble and tile contract; Burke, Horwood & White, 229 Yonge Street, are the architects. Draftsmen at the office of Howard J. White, 408 Ryrie Building, local representative of architects Graham, Burnham & Co., Chicago, Ill., are preparing plans for a departmental store at the south west corner of Yonge and College Sts., for the T. Eaton Co., Ltd., to cost $5,000,000.

Windsor, Ont—Work has commenced on two stores and apartments for O. Orechkin, 98 Wyandotte East.

Windsor, Ont.—Wm. Hedrick, 6 Glengawyne Ave., Windsor, has been awarded the general contract on an apartment house for Wm. Byrne, 19 Elm Ave., to cost $7,500.

Co-operative Engineering Service

A series of bulletins has been issued by the Corrugated Bar Co., Buffalo, describing in detail, with photographs and blue prints, the construction of several reinforced concrete buildings. Three of the bulletins relate to factory construction, and one each is devoted to hospital, hotel, office and Y.M.C.A. buildings of reinforced concrete.

In addition, each bulletin gives prominence to the recently established engineering service department of this firm, which has a number of novel and interesting features. They have been in the reinforced concrete business since 1891, and their engineers are well known as being among the leaders in this field of construction. The company, however, has never operated strictly as an engineering firm, but has always marketed patented types of reinforcing material, such as expanded metal in the early days, and, in more recent years, corrugated bars.

They not only sold, but manufactured the expanded metal, but gave this up in 1900 on account of the growth of the sale of corrugated bars. The latter material is a rolling mill product, and has never been manufactured by the company itself. They are therefore not a manufacturing concern, and their business is more of a jobbing nature, and this fact is one of the features which enables them to offer their engineering service to architects in the designing and detailing of reinforced concrete buildings, on the basis of a professional fee therefor. Although they sell a reinforcing material, they have no plant or machinery to keep in operation, and are able in consequence to offer the service entirely divorced from the sale of their reinforcing material; even going so far as to agree to refrain from bidding on the reinforcement if the client has any feeling that their interest in a possible sale of the material—even though in competition—might influence their design.

The service is now being offered in Canada to Canadian architects and engineers, and consists in the making of designs, and complete, detailed drawings for the reinforced concrete work for such construction, which is coming to be the standard for industrial buildings. It comprises:

1. Preliminary and comparative sketches, estimates and cost data as a basis for negotiations between the architect and client.
2. An analysis of the needs of the building, and the selection of the best type of reinforced concrete construction therefor.
3. The making of the designs, and complete, detailed drawings, with setting plans for the use of the contractor in erection.
4. Guarantee of the sufficiency of the plans to perform the work intended.
5. Free use of any patented types of systems or designs owned or controlled by the company.
6. Guaranteed patent protection.
7. Guarantee against alternate plans. If a bid on a properly designed alternate is submitted at the letting, the cost of which is less, the difference will be paid by the company, or no charge will be made for the plans submitted.
8. The charge for the service is a small percentage of the cost of the reinforced concrete portion of the work. This is not paid by the architect, but is added to the cost of the building upon which he obtains his professional fee.

The result of the use of this service is the obtaining by the owner of a building exactly suited to his needs under competitive conditions on exactly known quantities, and hence at the lowest possible price.

The customary method of letting such contracts is for the architect to prepare the general outlines of the building, and call for bids on competing systems of fireproofing or reinforced concrete construction. When this is done, the system people have but a few days in which to make up their bids, and have to estimate the quantities hastily from typical plans and sections, and are obliged to add from five to ten per cent to their quantities for fear these typical sections will not accurately represent the average conditons of the building as a whole. In this method, the type of construction adopted by each bidder is the one, in their opinion, most likely to land the job, and not the one designed to best meet the needs of the building. The result, therefore, is likely to be a building of improper design at high cost.

There are a great many patents in the field of reinforced concrete construction, many of which have been adjudicated in the courts of last resort in the States. Many of these patents exist in Canada. This is a condition not fully appreciated by the general public. The Corrugated Bar Company maintains that, having been in the business from the start, it has not only its own patents, enabling it to operate without the necessity of paying tribute in the various fields of reinforced concrete construction, but also a knowledge of other patents affecting the field, and how these may be avoided without sacrifice of efficiency. The owner has free use of these facilities.

There are very few architectural firms that can afford to maintain an expert force in all the different fields of engineering. To admit this is no reflection upon the profession. Many of the building arts are nowadays developing so rapidly, and are so intricate in their nature, that it would be quite impossible for the architects to maintain such organizations and keep them up to date. This condition exists in the field of reinforced concrete construction.

The proposition is somewhat peculiar, coming from a "material" company. It seems, however, that the Corrugated Bar Company meets this situation squarely and fairly by saying that there is no obligation whatever to use their material, and that they will even refrain from bidding upon it, if the architect or the owner feels that their possible chance of securing the order for the material, even though in competition, might influence them in their design of the structure.

The charge for the service is not named, but in view of the amount of protection offered by the service, the general reputation and reliability of the company, and the wide experience its engineers have had in this field, it should prove of benefit to the architectural profession of Canada in general. By addressing the Corrugated Bar Company, Buffalo, N. Y., bulletins and interesting data may be had.

CONTRACTORS and SUB-CONTRACTORS

As Supplied by The Architects of Buildings Featured in This Issue

Building, Church of St Francis of Assisi, Toronto, Ont.

Architects, Arthur W. Holmes.
Boilers, Spencer, Toronto.
Concrete Work, R. Sheehy & Sons, Peterboro.
Electric Fixtures, F. C. Henderson, Toronto.
Electric Wiring and Apparatus, Bennett & Wright, Ltd., Toronto.
Expanded Metal, Pedlar People, Ltd., Oshawa.
Furniture, Globe Furniture Co., Ltd., Waterloo.
Glass, Luxfer Prism Co., Toronto.
Hardware, Peterboro Lock Co., Ltd., Peterboro, Ont.
Heat Regulating System, Canadian Power Regulator Co., Toronto.
Marble and Tile, Italian Mosaic and Marble Co., Toronto.
Pipe Organ, Casavant Freres, St. Hyacinthe.
Plaster Work, J. P. Hynes, Ltd., Toronto.
Radiators, Steel and Radiation, Ltd., Toronto.
Stone, Nicholson, Curtis & Vick, Toronto.
Structural Iron and Steel, Dickson Bridge Co., Ltd., Peterboro.
Contractors (general), Richard Sheehy & Sons, Peterboro.

Building, Northern Congregational Church, Toronto, Ont.

Architect, John Gemmel.
Brick, Don Valley Brick Co., Ltd., Toronto.
Carpets and Rugs, T. Eaton Co., Ltd., Toronto.
Electric Fixtures, F. C. Henderson, Toronto.
Electric Wiring Apparatus, Windeler Bros., Toronto.
Flooring, R. Sherwin, Toronto.
Furniture, Valley City Seating Co., Ltd., Dundas.
Glass, N. T. Lyon Glass Co., Ltd., Toronto.
Marble, Canada Glass Mantle Tile Co., Ltd., Toronto.
Plumbing Fixtures, Jas. Robertson, Ltd., Toronto.
Plaster Work, E. Gale, Toronto.
Stone, F. Rogers & Co, Ltd., Toronto.
Ventilating System, Canadian Sirocco.
Pipe Organ, Casavant Freres.
Memorial Windows, N. T. Lyon Glass Co., Ltd., Toronto.
Steel Lockers, Dennis Wire & Iron Co., Ltd., London.

Building, St. Andrew's Church, Moose Jaw.

Architect, J. H. G. Russell.
General Contractors, Jas. Ludlow, Winnipeg.
Seating, Globe Furniture, Waterloo.
Electric Wiring and Apparatus, Acme Electric Co., Moose Jaw.
Plumbing and Heating, Charette Kirk, Winnipeg.
Masonry, Malcolm Bros, Winnipeg.
Leaded Glass and Memorial Windows, N. T. Lyon Glass Co., Ltd., Toronto.
Stone, Wallace Sandstone Quarries, Ltd.
Pipe Organ, Casavant Freres, St. Hyacinthe.

Building, St. Giles Church, Hamilton, Ont.

Architect, Stewart & Witton, Hamilton.
Electric Fixtures, Culley & Breay.
Flooring, Stuart Bros.
Furniture, Valley City Seating Co., Ltd., Dundas.
Hardware, Kent-Garvin & Co., Hamilton.
Marble, Kent-Garvin & Co., Hamilton.
Plaster Work, Hannaford Bros., Hamilton.
Seating, Valley City Seating Co., Ltd., Dundas.
Structural Iron and Steel, Hamilton Bridge Works Co.
Contractors (general), Richard Tope & Son.

Building, First Church of Christ Scientist, Toronto, Ont.

Architect, S. S. Beman.
Boilers, Purdy Mansell, Ltd., Toronto.
Carpets and Rugs, Murray-Kay, Ltd., T. Eaton Co., Ltd.
Electric Fixtures, MacDonald & Willson Co, Ltd., Toronto.
Electric Wiring and Apparatus, Bell Bros, Toronto.
Flooring, Harris Hayes Lumber Co., Toronto.
Fittings, Purdy Mansell & Co., Ltd., Toronto.
Furniture, Murray-Kay, Ltd.
Glass, R. McCausland & Son, Ltd., Toronto.
Hardware, Aikenhead Hardware Co., Ltd., Toronto.
Heat Regulating System, Purdy, Mansell & Co., Ltd., Toronto.
Interior Fittings, Cabinet and Wood Work, Charters Lumber Co., Ltd., Toronto.
Marble and Tile, Canada Glass Mantles and Tiles, Ltd., Toronto.
Plumbing, Purdy, Mansell & Co., Ltd., Toronto.
Pipe Organ, Warren & Son, Toronto.
Plaster Work, W. J. Hynes & Co., Ltd., Toronto.
Structural Iron & Steel, Dominion Bridge Co., Ltd., Toronto.
Seating, Valley City Seating Co., Ltd., Dundas.
Vaults, J. & J. Taylor, Ltd., Toronto.
Contractors (general), Dickie Construction Co., Ltd., Toronto.

PERSONAL.

Mr. A. T. Black, who has been manager of the Sales Promotion and Advertising Departments of Martin-Senour Co., Ltd., is now general manager of this concern. Although Mr. Black's connection with Martin-Senour only extends over a period of three years, the increase in output speaks glowingly of the results obtained through his methods.

R. J. Durley, consulting engineer, has taken over and will carry to completion the unfinished work in Canada previously handled by the Montreal office of the firm of MacMullen, Riley & Durley, which was recently dissolved. He will continue to practise as a consulting engineer, under his own name, at 4 Beaver Hall Square, and will specialize in the design and construction of power plants and industrial works, in addition to the design of the complete mechanical and electrical equipments of large buildings.

CANADIAN NATIONAL CLAY PRODUCTS ASSOCIATION CONVENTION.

An attractive programme has been adopted for this convention, which is to be held January 23-25, 1917, in Hamilton.

Information and data of interest to every manufacturer of clay products will be given and special subjects covered.

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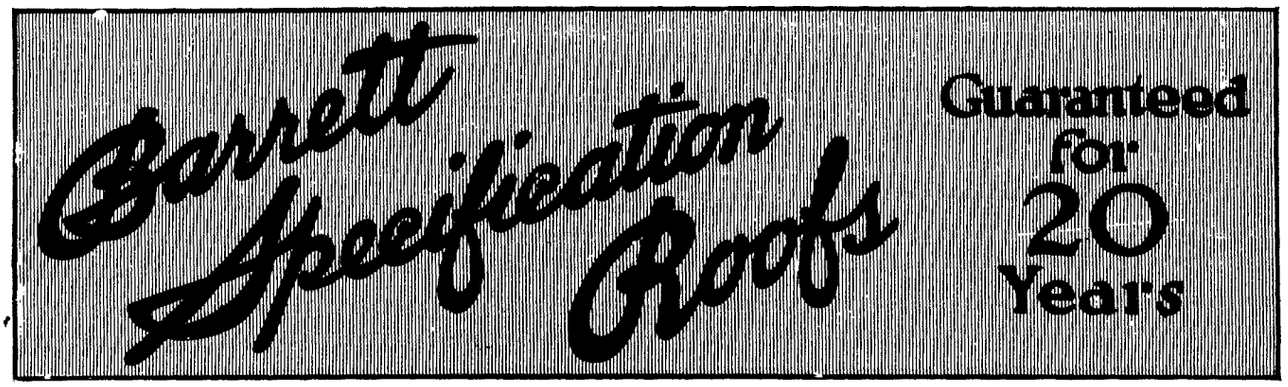


Made in Canada

We Standardized the Roofs— Now We Standardize the Guarantee!

A DOZEN years ago the introduction of The Barrett Specification standardized roofing practice throughout the Dominion and gave to the old "tar-and-gravel roof" a definite character and reliability.

Local contractors, in the past, have been accustomed to guaranteeing roofs of this type, free of repairs for from five to ten years.

To good reliable roofers such guarantees were no burden because the roof they constructed would last much longer than the guaranteed period.

The fly-by-night roofer, however, did a poor and cheap job, gave his guarantee recklessly—and was generally out of business when the roof leaked or trouble came.

As manufacturers of the materials used in Barrett Specification Roofs we, therefore, determined a short time ago to *standardize these guarantees* and make them of real value to users of Barrett Specification Roofs.

We, therefore, arranged with the U.S. Fidelity & Guaranty Company to issue a 20-Year Guaranty Bond covering every Barrett Specification Roof of 50 squares and over *wherever our inspection service is available.*

This bond takes the place of short-term guarantees formerly issued by the local roofer and obviously is far better.

The principal roofing contractors and architects throughout the Dominion are co-operating with us and we believe the plan is going to be so successful that more Barrett Specification Roofs will be laid the next few years than ever before in the history of the business.

We want to emphasize the point that the Guaranty Bond costs you nothing. *The service is free in the interest of good workmanship and the good repute of our materials.*

Barrett Specification Roofs are recognized to-day as the standard covering for permanent buildings of all kinds. The cost per year of service, is less than any other roof covering.

If you are interested in the proposition we shall be glad to send you further details on request.

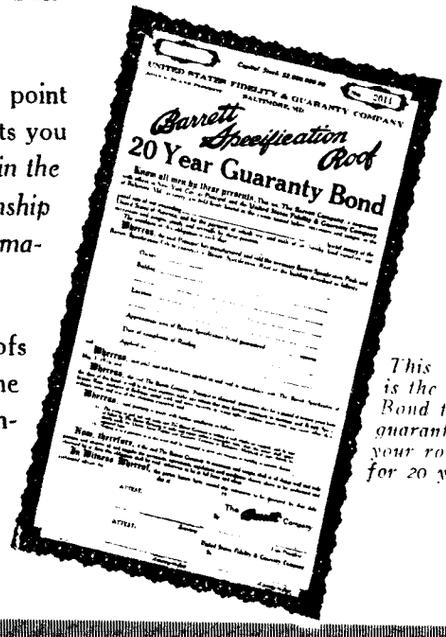
A copy of The Barrett Specification, with roofing diagrams, sent free on request.

THE PATERSON MANUFACTURING COMPANY LIMITED

MONTREAL TORONTO WINNIPEG VANCOUVER

THE CARRITTE-PATERSON MANUFACTURING COMPANY LIMITED

ST. JOHN, N.B. HALIFAX, N.S. SYDNEY, N.S.



This is the Bond that guarantees your roof for 20 years.

ARTICLES—*Continued.*

EDITORIALS.