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Royal Architectural Institute of Canada

Volume 2 TORONTO, NOV.-DEC., 1925 Number 6

CONTENTS

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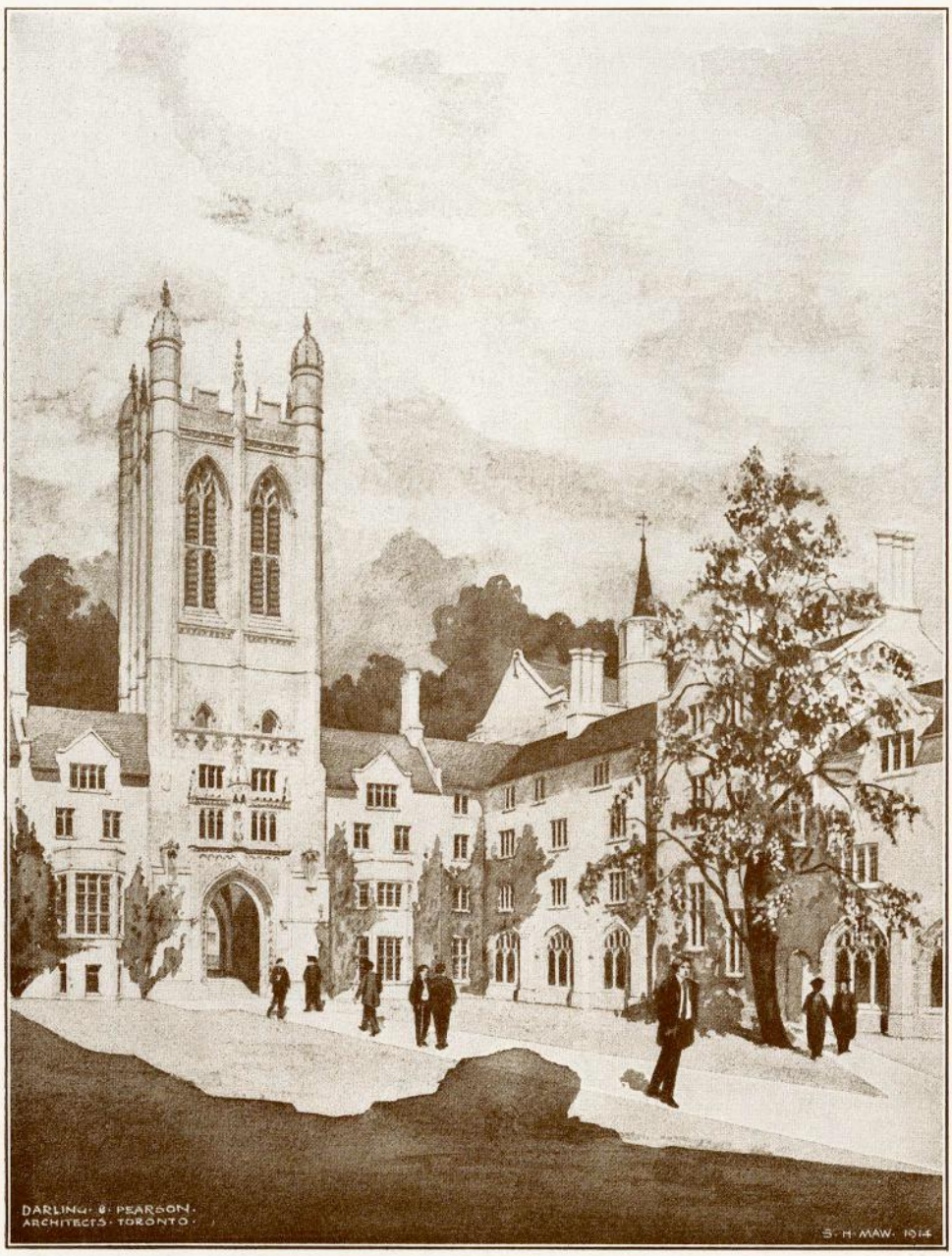

SKETCH OF PROPOSED FOUNDER'S QUADRANGLE, TRINITY COLLEGE, TORONTO, IN MEMORY OF THE HON. AND RT. REV. JOHN STRACHAN, FIRST BISHOP OF TORONTO, WITH ARCHWAY IN TOWER LEADING TO CHANCELLORS' QUADRANGLE.

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Editorial

THE frontispiece in this Issue is by one of Canada's most outstanding draughtsmen, Mr. S. H. Maw, of Montreal, and is one of a series of sketches by Mr. Maw of the proposed buildings for Trinity College.

FEATURE ARTICLES

The feature articles in this Issue include a description of the buildings of Queen's University, Kingston; Trinity College, Toronto, and the Manitoba Agricultural College in Winnipeg. We have in previous issues dealt with the Toronto, McGill, Saskatchewan, Alberta, Western Ontario, Acadia and British Columbia Universities. Dalhousie University and the Université de Montreal will probably be featured in our next issue. This complete series will provide architects with valuable reference work on the Universities of the Dominion which already has met with considerable appreciation.

RETROSPECT

This Issue marks the completion of the second year of the existence of the R.A.I.C. JOURNAL. We look back with a great deal of pride to its accomplishments in the past and are very proud of the fact that the high standard set for the JOURNAL at its inception has been more than maintained. The esprit de corps shown by architects all over Canada has been of wonderful assistance to our Editorial Department and we bespeak for the JOURNAL the continued support and co-operation of the members of the Institute. The JOURNAL will continue to be published every other month during 1926. It is hoped, however, that in the not distant future it will be published as a monthly magazine. It is fitting at this time to tender our appreciation to those advertisers in the JOURNAL who have contributed so largely to its success.

WINTER CONSTRUCTION

In a recent pamphlet issued by the Portland Cement Association many opinions are quoted as to the advisability of winter construction. As years go on we seem to see an increasing amount of building construction during the winter months in Canada. With better adapted methods and improved construction equipment it is possible to build reinforced concrete buildings during the severe cold weather without increasing the cost. When one considers the effect that winter construction will have on our labor problem one can readily see the possibility of reducing our seasonal unemployment and providing work for our mechanics dependent on the building industry, for twelve months of the year. Under the present conditions of the labor market the slight additional cost of winter construction would be more than offset by the saving due to the lower cost of materials during the winter and the absence of bonuses which sometimes have to be paid to mechanics in the summer when work is so plentiful.

ACTIVITIES OF PROVINCIAL ASSOCIATIONS

One cannot help but be surprised at the inactivity of the several Provincial Architects' Associations as shown by the absence of their reports in the JOURNAL. It is very difficult to believe that an Association can function properly without holding meetings regularly. It is said by those who criticize the profession that architects are most unbusinesslike in their practice, and although we cannot admit this criticism to be true, we must confess that many of the Architects' Associations do not, to all appearances, function properly, thereby showing themselves most unbusinesslike in carrying out the duties of such an Association.

Architects often complain that they do not receive the recognition a profession such as theirs deserves from the general public and from the press. How, may we ask, can the public be expected to recognize a profession when such profession fails to recognize the public? We believe it is the duty of an Architects' Association to take a spirited interest in any public movement which is for the general good of the people. Many matters of public interest arise from time to time in which the interest of an Association such as ours would be of great benefit to all. It has been said that architects cannot expect seclusion and publicity at the same time and we know of no better method that will result in receiving proper recognition than by having our Associations function regularly and take a keen interest in all matters pertaining to the welfare of the communities in which they exist.

MR. GOVAN'S ARTICLE ON NEW CONSTRUCTION TENDENCIES.

The points raised by Mr. Govan in his article appearing in this issue, as well as the one which appeared in the September-October issue are of great interest to architects. We have noticed that there is a tendency among many architects to avoid subjects of a technical nature, and it is with this in mind that we wish to emphasize the importance of Mr. Govan's article to the architectural profession. How can architects expect to deal with the economics of their profession if they ignore technical subjects, especially when they affect the interests of their clients so vitally? We have often heard architects express themselves as interested only in the aesthetic side of architecture and a strong dislike for the technical side. To-day, more than any other time in the history of the profession, it is necessary for an architect to keep abreast of the times and to have a thorough knowledge of all new and up-to-date construction methods and equipment so that he may more

(Continued on page 236).

The Secretary's Page

ALCIDE CHAUSSÉ

Honorary Secretary, Royal Architectural Institute of Canada

THE Council of the Royal Institute of British Architects has the power to elect and admit as a Fellow any architect who shall have attained the age of forty years and shall have been engaged as a principal for at least seven consecutive years in the practice of architecture and as to whom the Council may resolve that it is desirable to elect and admit him as a Fellow. This special power of the Council of the Royal Institute of British Architects, of course, overides the usual requirements that candidates must be qualified by examination. It has consequently been used on a very few occasions, but it is thought that a reminder of the existence of this power should be known by the Councils of the Allied Societies in case they should wish at any time to make special recommendation in favour of an architect for election to the Fellowship of the Royal Institute of British Architects.

* * *

The following letter has been received from Sir John J. Burnet, A.R.A., R.S.A., F.R.I.B.A.:

Sir John Burnet & Partners
Architects.

1, Montague Place,
Bedford Square, W.C.I.,
London, 3rd Oct., 1925.

My Dear Sir,

I was duly favoured with your letter of the 28th August, intimating your Council's desire that I should be one of the Representatives of the Royal Architectural Institute of Canada at the Council table of the Royal Institute of British Architects in London.

In the hope of avoiding any inconvenience to your Council and you, in my unavoidedly delayed reply, I wired on the 25th September last, of the pleasure it gave me to accept the appointment, and I now beg to confirm that acceptance.

I very keenly appreciate the honour of representing my Colleagues in Canada, and although I have not yet been able to make myself aware of the duties which the position involves, I am glad to think that whatever these may be, I may be brought into personal relation with you and know from time to time of any matters in which I may be able to be of service to the Council in their desire to advance the Art we all love so well.

Believe me, my Dear Sir,

Very faithfully yours,

JOHN J. BURNET.

Alcide Chaussé, Esq.,
Honorary Secretary,
Royal Architectural Institute of Canada,
Montreal, Canada.

The President and Past-President of the Royal Architectural Institute of Canada are members of the Allied Societies Conference which meets at the headquarters of the Royal Institute of British Architects in London, several times a year. It is, of course, only on very rare occasions that it is possible for the overseas members to attend the meetings. The Royal Architectural Institute of Canada has been requested to nominate an architect residing in London who could act as their representative at the Conference, just as they have a resident representative on the Council of the Royal Institute of British Architects. This representative will be appointed at a coming meeting of the Executive Committee of the Council of the Royal Architectural Institute of Canada.

* * *

The Committee of Arrangements for the Nineteenth General Meeting of the Royal Architectural Institute of Canada, which will be held at Montreal, during the third week of February, 1926, are preparing a very interesting programme jointly with a similar committee of the Province of Quebec Association of Architects. It is expected that all the members of the R.A.I.C. will make it a point to be present at this confraternal gathering.

* * *

According to the conditions of the present By-laws of the Royal Architectural Institute of Canada, adopted on the 5th September, 1924, new by-laws and amendments or modifications of existing by-laws can only be made on the initiative of the Council of the R.A.I.C. or of a Provincial association duly authorized by resolution of its Council. Notification of the proposed changes shall be sent to the Honorary Secretary of the R.A.I.C. at least two months before the date of the Annual Meeting. The Honorary Secretary will send to all Provincial associations and to all the members a copy of the proposed change or changes with the notice calling the meeting. Two-thirds of the votes cast at the Annual Meeting must be in favour of the change before it can become effective.

* * *

At the Annual Meeting of the Royal Canadian Academy held in Montreal on November 20th, Mr. Herbert Raine, Architect, of Montreal, a member of the Royal Architectural Institute of Canada, was elected a full Academician. There were also a number of architects elected associates of the Royal Academy to fill the vacancies in the ranks of Architect Academicians who have died recently. The following architects were elected associates: H. G. Jones, Montreal; Hugh Vallance, Montreal; J. O. Marchant, Montreal; Ernest Cormier, Montreal; J. M. Lyle, Toronto; A. T. Chapman, Toronto.

AEROPLANE VIEW OF THE GROUP OF PROPOSED TRINITY COLLEGE BUILDINGS MADE FROM ARCHITECTS DRAWINGS. THE ACADEMIC BUILDING NOW COMPLETED IS THE ONE IN THE FOREGROUND WITH THE THREE DECORATED LANTERNS REPRODUCING THE FEATURES OF OLD TRINITY.

Trinity College, University of Toronto

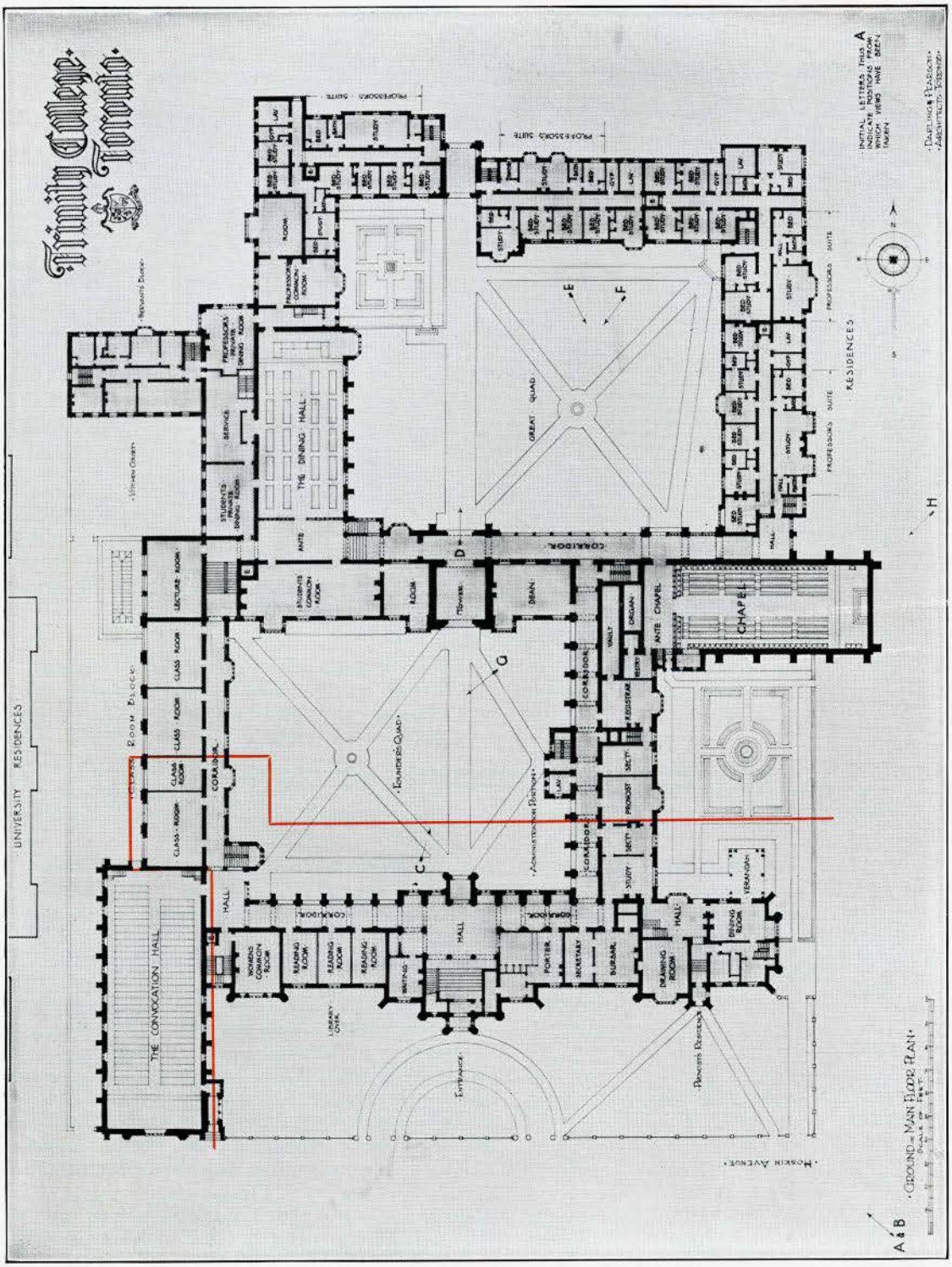
BY REV. SIDNEY CHILDS, B.A., B.D.

THE University of Trinity College through its founder the Honourable and Right Reverend John Strachan, M.A., D.D., LL.D., is inseparably connected with the history of higher education in the Province of Upper Canada and with the history of the University of Toronto. For more than fifty years after its foundation by Bishop Strachan in 1851, Trinity College existed as an independent Church of England University, carrying on teaching work in the three faculties of Arts, Divinity and Medicine, and also conducting examinations in Law, Music, Dentistry and Pharmacy. Trinity conferred her degrees in the above mentioned Faculties under the powers of a Royal Charter granted to Bishop Strachan in 1852. By this Charter Trinity was set up as a University "to have and enjoy all such and the like privileges as are enjoyed by our Universities of our United Kingdom of Great Britain and Ireland, as far as the same are capable of being had or enjoyed by virtue of these our Letters Patent".

Before founding the University of Trinity College Bishop Strachan had already been actively interested in the establishment of the University of King's College, the first University to be established in the new Province of Upper Canada, founded in 1791. The United Empire Loyalists had already, before the division of Canada into the two provinces of Upper and Lower Canada, addressed Lord Dorchester on the subject of education, setting forth the need of their children for religious and secular instruction.

Colonel Simcoe, the first Governor of Upper Canada, applied himself vigorously to promote the religious and secular instruction of his people. He suggested the establishment of Grammar Schools and of "a College of a higher class". In a letter to the Bishop of Quebec, dated 30th April, 1795, he says, "The people of this Province enjoy the forms as well as the privileges of the British Constitution. They have the means of governing themselves, provided they shall become sufficiently capable and enlightened to understand their relative situation, and manage their own power to the public interest. To this end a liberal education seems indispensably necessary, and the completion of such education requires the establishment of a University, to inculcate religious principles, pure morals, and refined manners." The Bishop of Quebec then had ecclesiastical jurisdiction over Upper Canada as well as the Lower Province, having a seat in the Executive Councils of both Provinces. The records of the times show it was recognized that education was properly the business of the Bishop of the Diocese.

The extract from his letter to the Bishop indicates the sort of institution Governor Simcoe had in mind. In the older countries of the world the Universities had grown up under the fostering care of the Church, and Governor Simcoe naturally desired the same close association of religious and secular instruction in his proposed University. In England the Universities were associated with the national church, the Church of England, and Governor Simcoe contemplated the same association between the Church of England and the new university. People who fail to recognize the naturalness of the desire on the

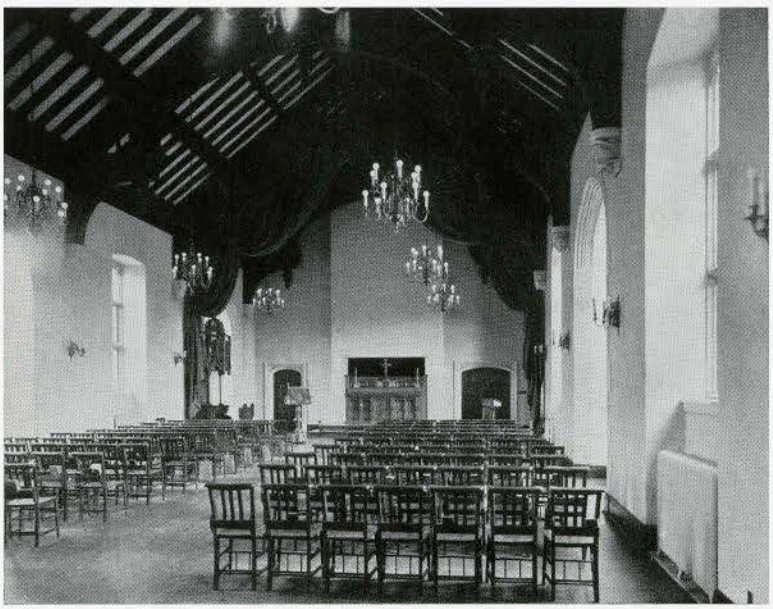


The Ground Plan of the Proposed Group of Buildings, indicating the Location of the Convocation Hall, the Chapel, the Provost's Lodge, the Administration Offices, Class Rooms, the Dining Hall, and the Residences.

The portion outlined in red, facing Hoskin Avenue, has already been erected.

part of the pioneers of higher education to establish the same forms of the British Constitution in this new land, misunderstand the controversy which was waged over education in this Province from 1827 down to 1854, and even later.

Governor Simcoe was recalled to fill a higher station before his plans for the educational advance of the Province could be carried out. The Legislature of 1797, however, furthered the carrying out of this policy, and a committee composed of members of the Executive Council and the Judges and Law Officers of the Crown recommended an appropriation of waste lands of the Crown for the endowment of the proposed University. Ultimately 295,705 acres of land were thus appropriated. In December, 1825, His Excellency Sir Peregrine Maitland addressed the Home Government on the subject of the University, advocating the furtherance of the project and suggesting the exchange of some unproductive endowment for such other lands in the settled part of the Province as might afford an immediate revenue for its establishment and maintenance. Dr. Strachan was then Archdeacon of York and to him was due the actual realization of the plans so long advocated. He visited England in 1826 and secured the consent of the Crown to the exchange of

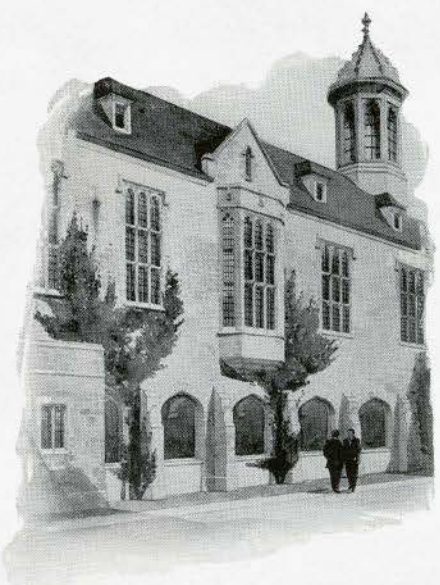


LIBRARY AND TEMPORARY CHAPEL

lands, and also secured a Royal Charter for the foundation of the University of King's College. The Charter provided "for the education of youth in the principles of the Christian religion" as well as "instruction in the various branches of Science and Literature." In the establishment of the University upon this religious basis the promoters were as before indicated following the precedent of the ancient universities of the Old World. The "principles of the Christian religion" mentioned were according to the formularies of the United Church of Great Britain and Ireland. The President and Professors were to be members of that church and the Bishop of the Diocese was to be the Visitor, although no religious test was to be required of the undergraduates or of the graduates, except of those of Divinity. The Lieutenant Governor of the Province was to be the Chancellor and the Archdeacon of York was named as the first President.

The terms of the Charter aroused opposition and delayed the opening of the college until June, 1843. In the interval the Legislature passed various amendments modifying the character of the Charter, and the opposition led to the establishment of Victoria College at Cobourg by the Methodists, and of Queen's College at Kingston by the Presbyterians. Opposition continued after the opening of the new King's College and the University question was forced into the forefront of party politics. Ultimately, by the Baldwin Act of 1849, the name of the institution was changed to the University of Toronto and the Charter and endowment transferred to the new institution as a secular State University. Regulations provided for its complete secularization. This new situation created conditions altogether foreign to the ideals of Dr. Strachan, who was now the first Bishop of Toronto. He immediately set to work and claimed for the Church of England the same right to a university established upon a religious basis as had been secured by the Methodists and Presbyterians. He succeeded in founding the University of Trinity College in 1851 and securing for it a Royal Charter in 1852. In a very real sense, therefore, as will be seen by this brief historical résumé, Dr. Strachan was the educational parent of both the University of Toronto in its original form as King's College and of the University of Trinity College.

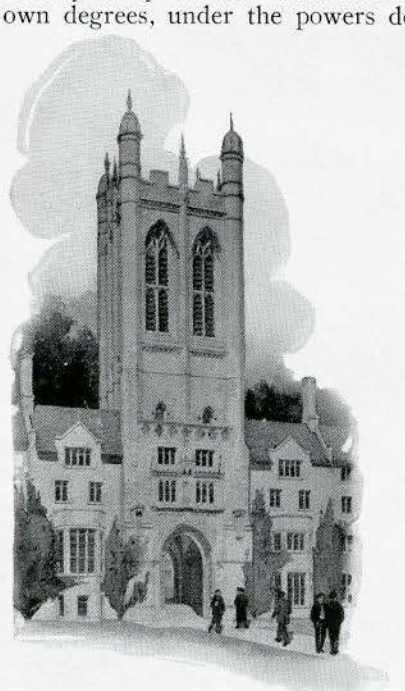
There were now in the province four universities and the weakness caused by this dissipation of its educational resources soon became apparent. The movement for the separate universities, arising out of the conviction in the three religious bodies concerned that University education must have a religious basis, had gone so far that the State University naturally failed to secure the friendly alliance and co-operation of these denominational universities. Various attempts were made to unify the university system of the province, but for many years these attempts were unsuccessful. By the year 1884 the conditions of higher education were entirely changed and the demands made upon the universities were much enlarged. The demands of Science for the extension of teaching facilities in physical and biological subjects, with its accompanying need of expensive laboratory equipment became imperative. The great modern movement of university development also began to make itself felt in the older subjects of History, Literature, and Philosophy, involving multiplication of courses of study and an increase in the teaching staffs. The need of unifying the university resources of the province to meet the new problems became self evident. The situation eventuated in the Federation Act of 1887, which formed the basis of a new university constitution. The terms of this Act made possible the entrance of Victoria and Trinity into federation with the University of Toronto as federating universities, agreeing to hold in abeyance their degree conferring powers in all faculties except that of Divinity. Their Arts Faculties under federation became Arts Col-



ENTRANCE HALL AND CORRIDOR

leges of the Faculty of Arts in the Provincial University. As constituent parts of the University they follow the curricula of the University of Toronto, the subjects of which are divided into what are known as university and college subjects. All the students in Arts receive their degrees from the University of Toronto. In Divinity both Victoria and Trinity carry on their own work and confer their own degrees, under the powers derived from their own Charters. Victoria effected federation in 1890 and Trinity in 1903.

The Act of 1901 which provided for the entry of Trinity University into federation contemplated the removal of the College to a site near Queen's Park within the confines of the Provincial University. For a time the large expenditure involved in the erection of new buildings and a natural reluctance to leave its old home postponed the policy of removal contemplated by the Act of 1901. Ultimately, however, the policy of removal was adopted by the college. The property was sold to the city of Toronto for a public park and plans for the new buildings on Hoskin Avenue had been prepared when the outbreak of the War in 1914 postponed the beginning of building operations. The changed conditions after the War created new problems, but the first sod for the new academic building was turned in December, 1922, the Corner Stone laid in June, 1923, and its formal opening took place on October 21st, 1925.



The old College on Queen Street was a pleasing adaptation of Pointed English architecture known as the Collegiate, since the old colleges of England were considered the best specimens of its style. The principal difficulty of the architect, Mr. Kivas Tully, was the adaptation of this Pointed English architecture to the Canadian climate, so as to combine ornament with utility. In this adaptation he replaced the square topped towers and battlements of the regular collegiate style by decorated turrets or lanterns. The acknowledged beauty of the outline and the originality of design of old Trinity proved the success of the architect's adaptation.

In the new building the genius of the architect, the late Mr. Frank Darling of Darling & Pearson, has reproduced the main outline of the old college in new materials and amid entirely different surroundings, stone being used in place of the brick used in the old building. The general effect, arrangement and architectural detail

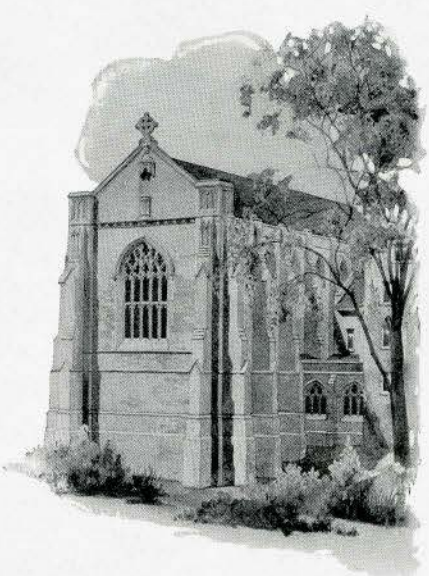
MAIN ENTRANCE HALL

combine to make a very beautiful building. It forms the South front of a group of buildings planned to be built about two quadrangles.

The new building covers the present requirements of the college for its academic and administrative work only. It consists of the Library with reading rooms and stack rooms, class rooms and lecture rooms for the work of the faculties of Arts and Divinity, together with common rooms for men and women students, and the Provost's residence. It also contains administrative offices for the Provost, Dean of Arts, Dean of Divinity, Registrar, Bursar, and Extension Secretary, together with a number of study rooms for the teaching staff. It does not include chapel, Convocation Hall or Residences, which are still to be built according to architect's drawings as shown in illustrations.

The principal entrance is in the centre, through a handsome porch of cut stone, over which is a fine bay window and ornamented gable. Cut stone bay windows are also introduced into the façade of the building on either side, and near the East end a smaller porch gives entrance to the Provost's residence, which is situated in the Eastern end. The centre of the building is surmounted by a handsome turret of stone with copper roof and a smaller turret breaks the line of the roof on either side as do a number of ornamental pinnacles and gables.

The central porch which forms the main entrance opens into a fine entrance hall, from which a stone staircase rises to the second floor. A long corridor runs out of the entrance hall on either side for the full length of the building and turns into the short East and West wings which run back to form part of the East and West sides of the first quadrangle. On the West side of the entrance hall on the ground floor a porter's office, commodious reading rooms, and librarian's office open off the long corridor and in the short West wing are two large lecture rooms. Below are convenient stack rooms for library books. Above on the second floor the whole length of the building on this side is taken up by a fine hall forming the Library, at present used as a temporary Chapel and Convocation Hall. The Library is of splendid proportions, taking the height of two stories and has a beautiful timbered ceiling. In the short West wing on this floor level are two lecture rooms and above



RECEPTION HALL, PROVOST'S RESIDENCE

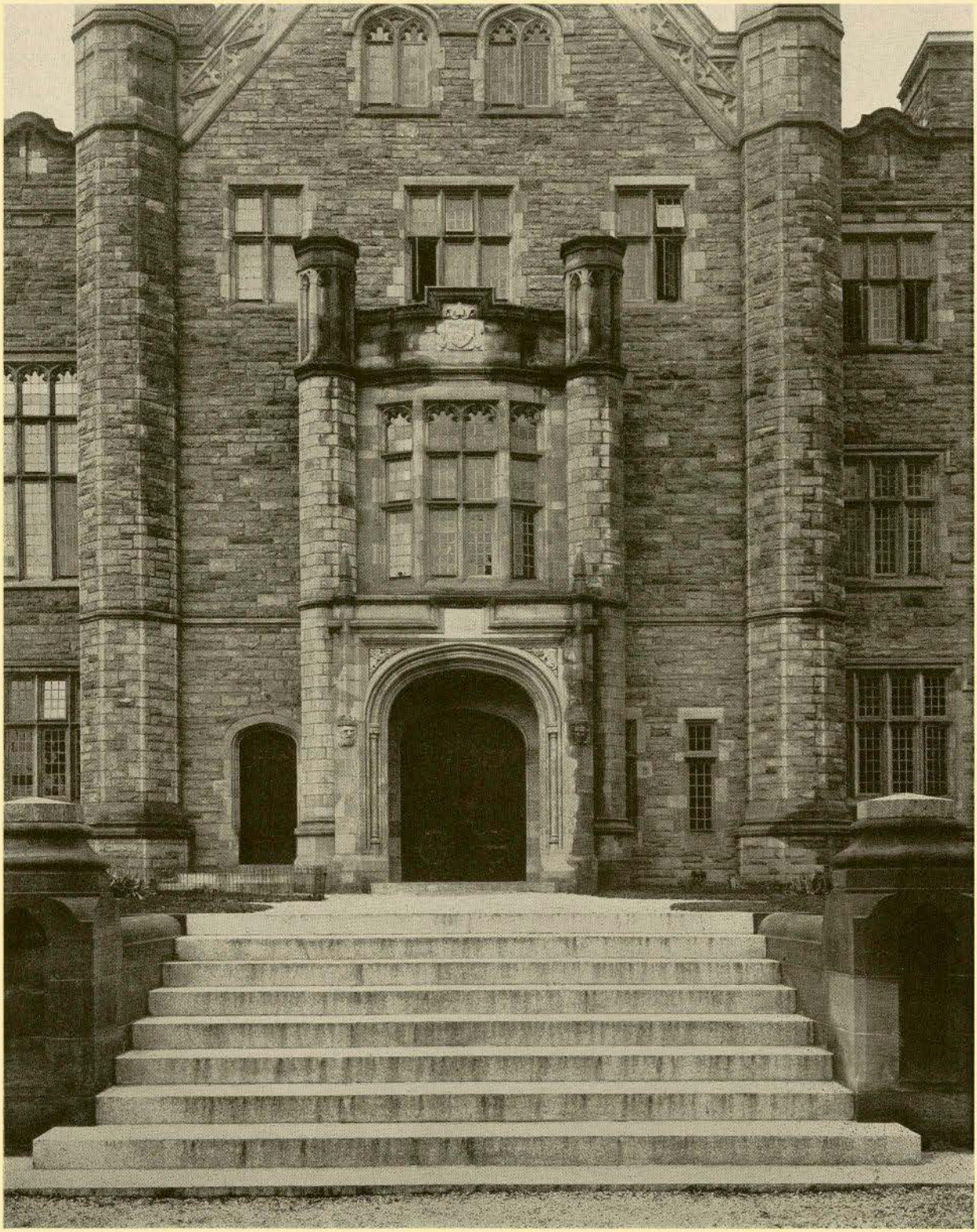
them two tiers of small rooms used as the staff study and office rooms.

On the East side of the entrance hall on the ground floor is the large common room for women students and the Provost's office opening into his residence, which goes out to the Eastern limit of the building. Above the common room and Provost's office are lecture rooms and offices on two floors. In the short East wing on the ground floor are the Bursar's offices, and above lecture rooms on two floors. In the turret under the roof there are several small rooms planned as guest rooms for the use of Alumni and other visitors to the college.

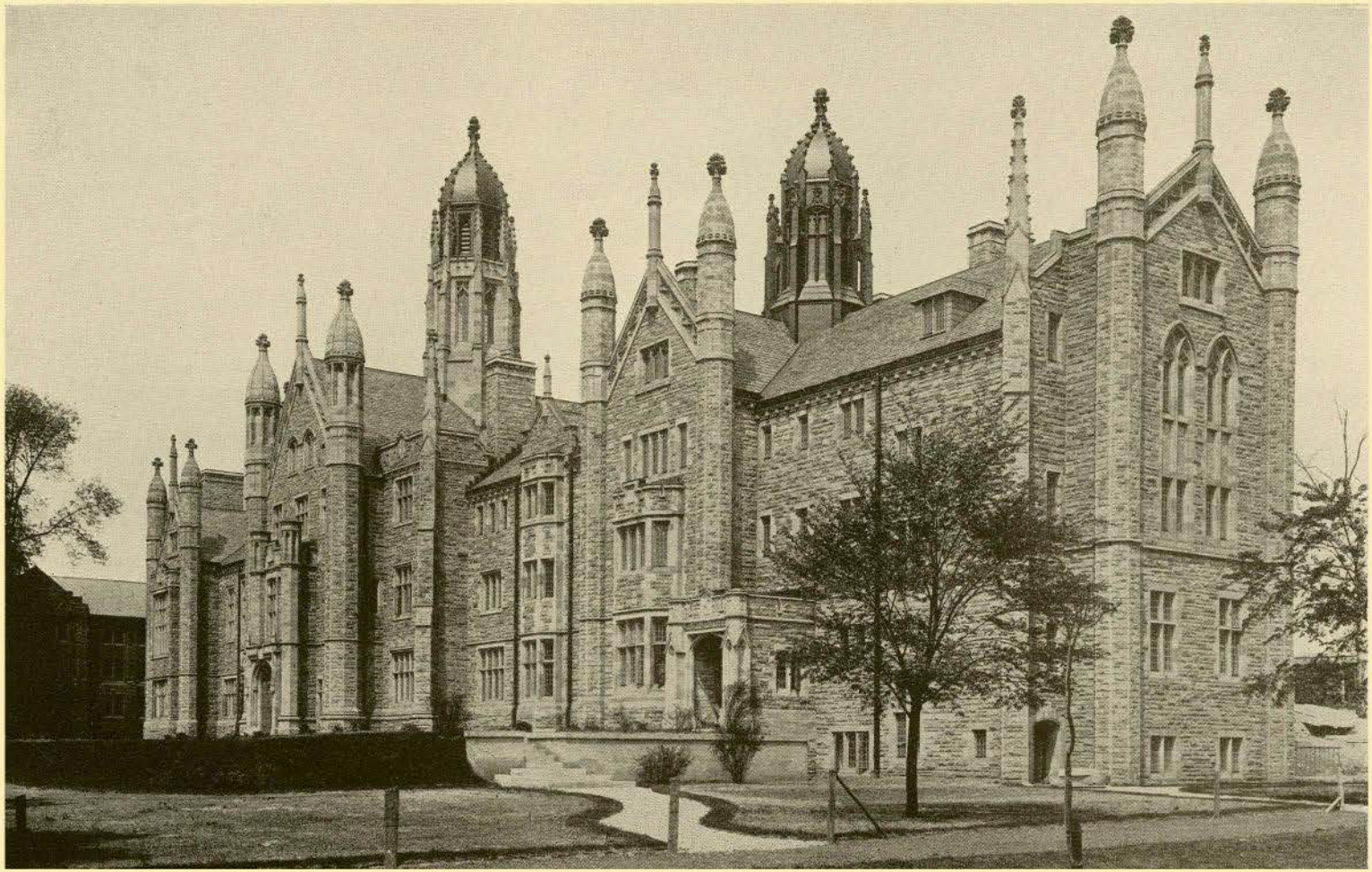
The building stands on a slight elevation set well back from Hoskin Avenue, the grounds being terraced down to the street level and forms a very beautiful addition to the group of university buildings clustered in the university park.

The fact that the various constituent colleges and faculties making up the University of Toronto are now all grouped about Queen's Park in proximity to each other demonstrates the unity of purpose which has been successful in building up the Provincial University into a great educational institution. Trinity does not aim to be a large college within the University. It believes firmly in the advantages of the smaller college in which intimate touch can be maintained between staff and students. It brings into the University what it believes to be its distinctive contribution of the collegiate and residential system with the best secular instruction based upon religious training and influence. The present enrollment of the college is 220, made up of 172 undergraduates in Arts (85 men and 87 women), 34 undergraduates in Divinity and 14 graduate Divinity students proceeding extra-murally to the higher Divinity degrees. Of the above number 65 men and 65 women are resident students.

It is a source of regret that owing to the great cost of building it is not possible at present to build either the Chapel or the permanent residences, since these are fundamental to the Trinity College ideal. Very satisfactory provision for the residential side of the college life has been made for the present by the acquisition of the large apartment house nearby known as St. George Mansions, now re-named Trinity House, for the men students. The women students are comfortably housed in three houses, also nearby, on St. George Street, the largest one having been purchased from the estate of the late Sir Edmund Walker who was an honorary graduate and good friend of Trinity. During her 74 years of existence in her old home Trinity has passed through her halls over 4000 alumni and alumnae in the faculties of Arts, Divinity, Medicine, Dentistry, Pharmacy, Law and Music. In her new home within the provincial university she looks forward to increasing opportunities of usefulness and service to Church and State in the sphere of higher education.

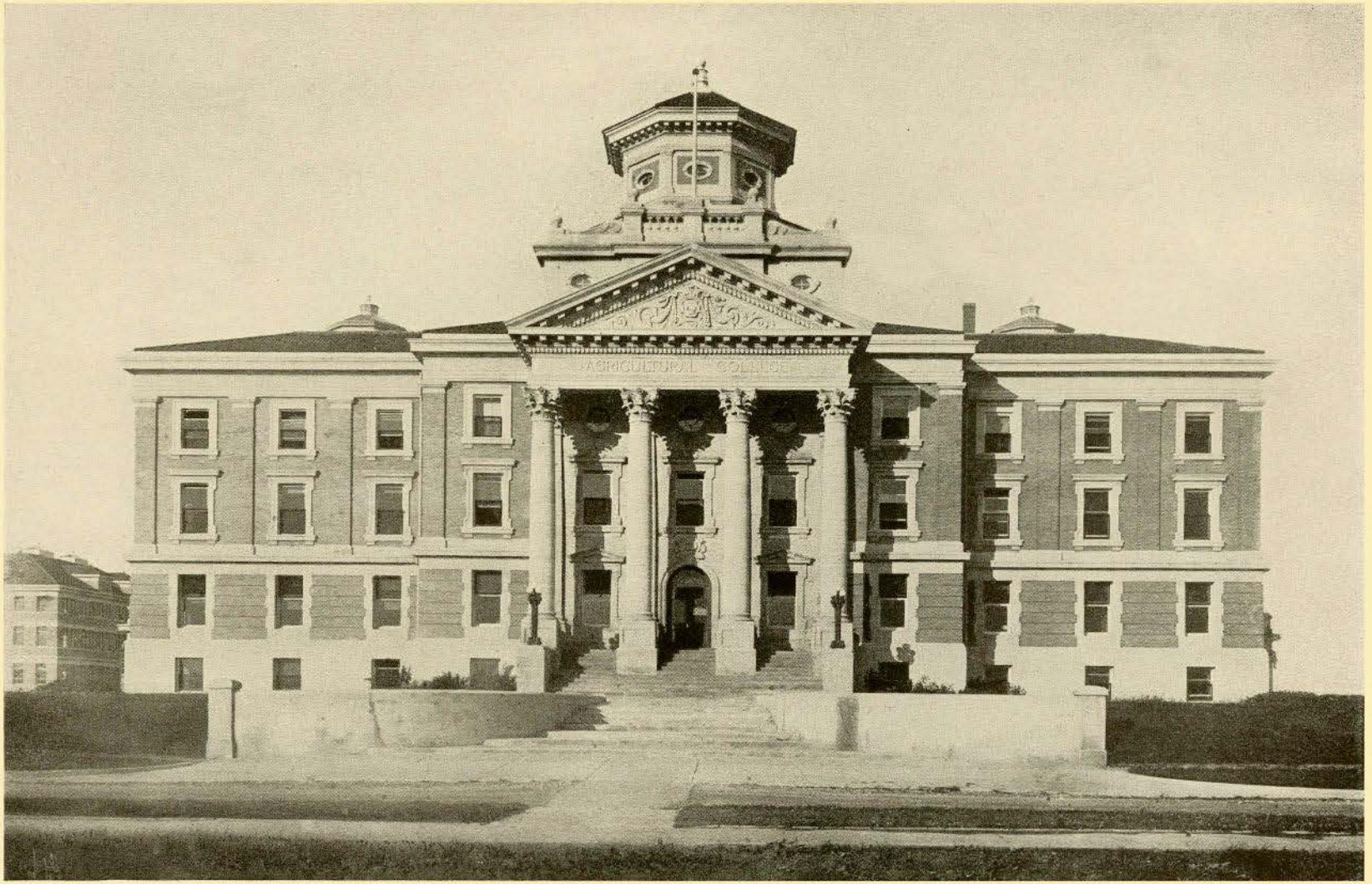


MAIN ENTRANCE, TRINITY COLLEGE, UNIVERSITY OF TORONTO
Darling and Pearson, Architects

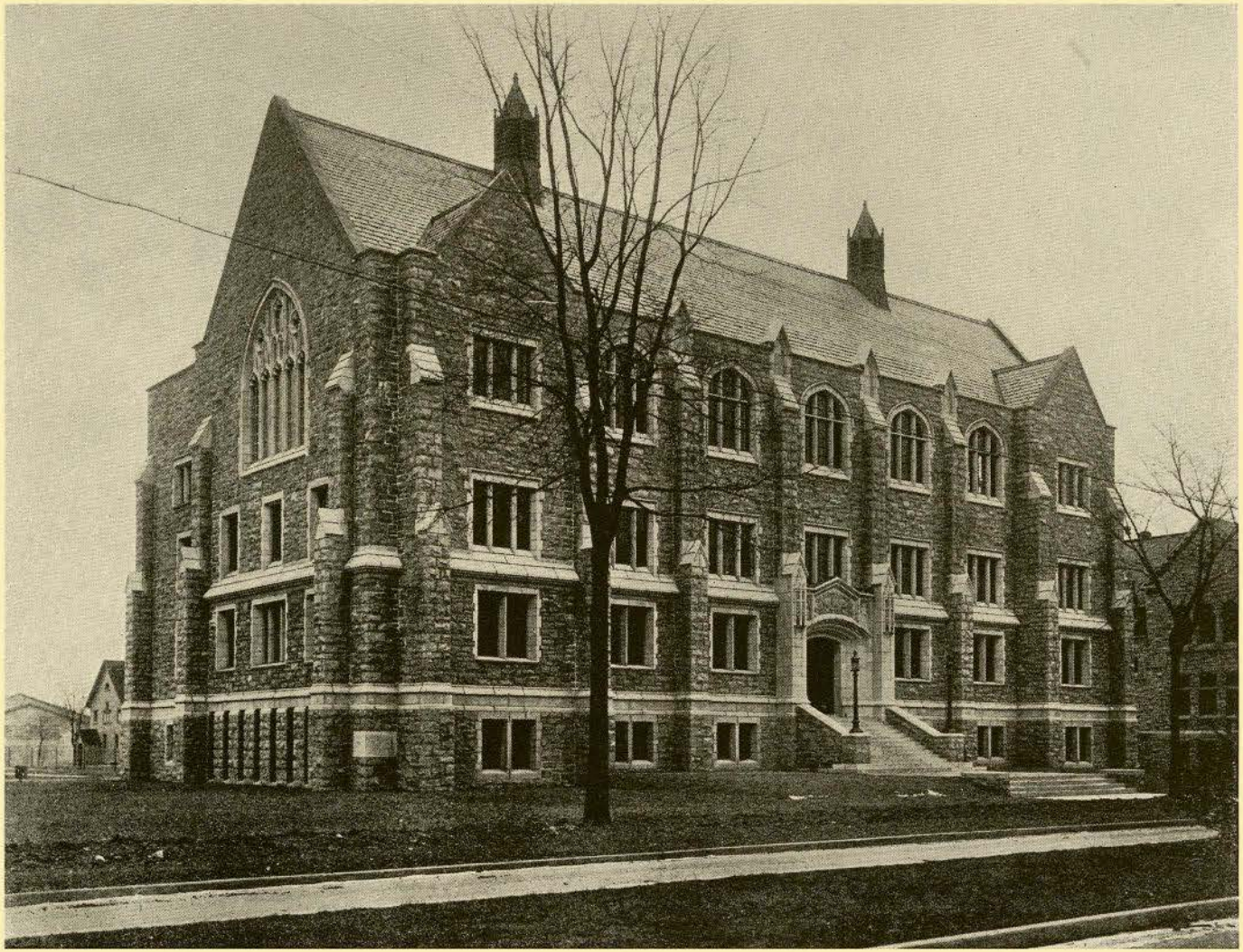


TRINITY COLLEGE, UNIVERSITY OF TORONTO, FROM THE SOUTH-EAST

Darling and Pearson, Architects



ADMINISTRATION BUILDING, MANITOBA AGRICULTURAL COLLEGE, WINNIPEG.
Samuel Hooper, Architect, *V. W. Horwood, Provincial Architect*



NEW DOUGLAS LIBRARY, QUEEN'S UNIVERSITY, KINGSTON, ONTARIO. 1924.
Shepard and Calvin, Architects. *E. L. Tilton, Consulting Architects.*

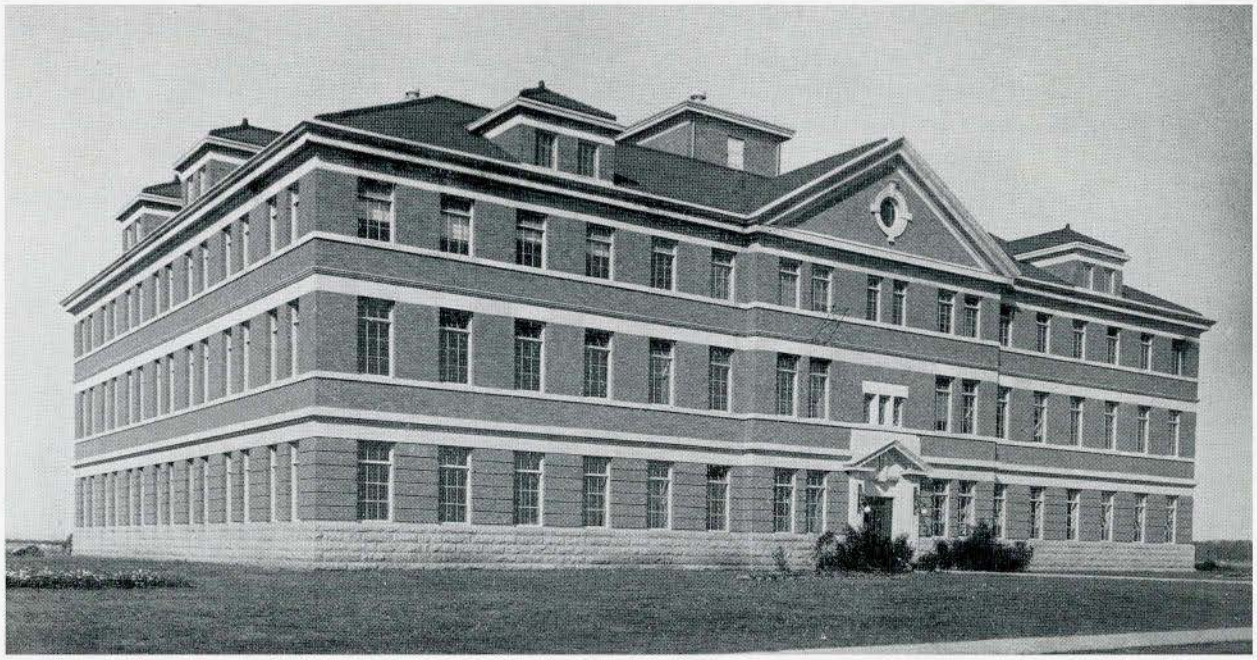
STUDENTS' RESIDENCE AND AUDITORIUM, MANITOBA AGRICULTURAL COLLEGE, WINNIPEG

The Manitoba Agricultural College

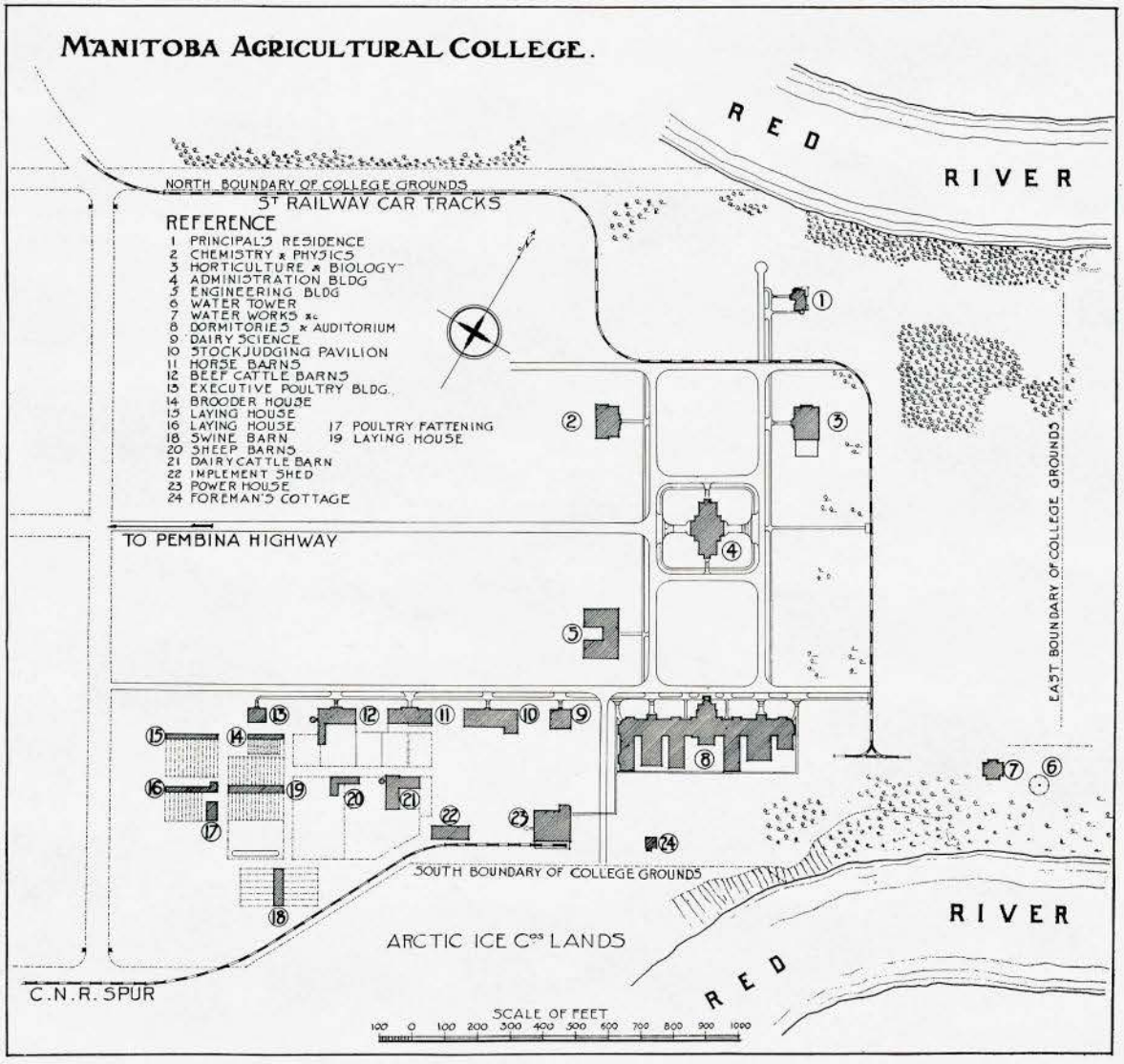
By GILBERT PARFITT, R.A.I.C.
Member of the Manitoba Association of Architects

IN 1903 a provincial act was passed providing for the establishment of an Agricultural College in Manitoba. A site was secured a little to the west of the City limits of Winnipeg, fronting on the south side of the Assiniboine River. In 1905 and 1906 some buildings were erected. A few years later a larger and more commodious site was acquired on the Red River about six miles from the centre of Winnipeg, to the south, adjoining a point in a loop of the river, which point was afterward assigned as a site for the University of Manitoba.

The Agricultural College is thus situated on the Red River, surrounded by ample spaces for cultivation, and it is accessible from the city and the country by fronting on the Pembina or Jefferson Highway which runs south to Emerson and the United



ENGINEERING BUILDING, MANITOBA AGRICULTURAL COLLEGE, WINNIPEG
Samuel Hooper, Architect. *V. W. Horwood, Provincial Architect.*

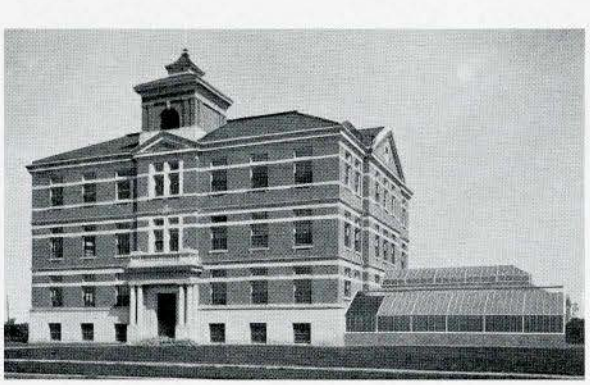


PLOT PLAN, MANITOBA AGRICULTURAL COLLEGE, WINNIPEG

States and by street car service from the city. On this site during 1912 and 1913 was erected a large group of fine buildings, which is shown on the accompanying block plan. In 1907 the College was affiliated with the University and in 1924 it became a faculty of that institution.

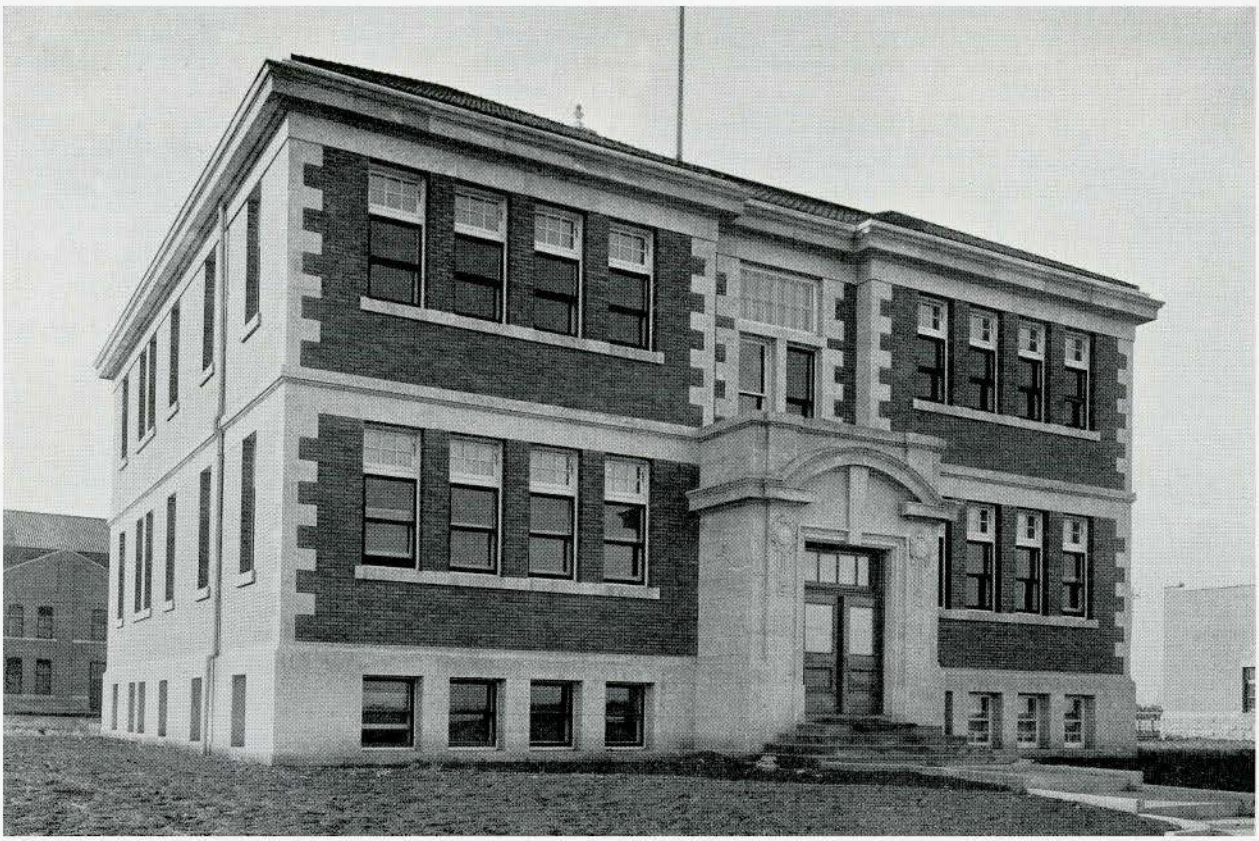
The buildings are of fireproof construction. The exterior walls are brick with stone trim. The face brick is of a light buff color and the stone is the native Manitoba stone quarried a few miles from the City. Roofs are of metal Spanish Tile.

The Administration Building stands in the centre



HORTICULTURE AND BIOLOGY BUILDING
MANITOBA AGRICULTURAL COLLEGE
Samuel Hooper, Architect.

PRINCIPAL'S RESIDENCE
MANITOBA AGRICULTURAL COLLEGE
V. W. Horwood, Provincial Architect.

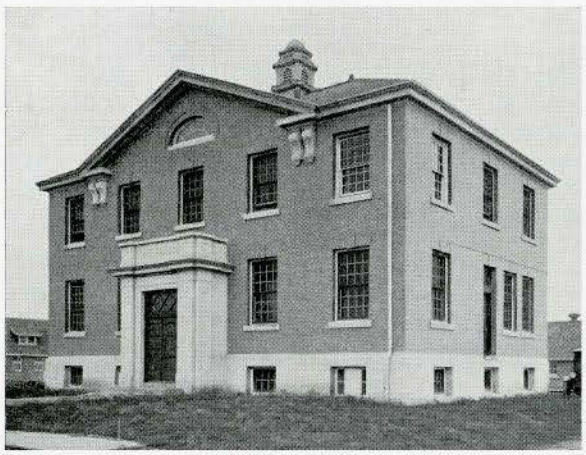


DAIRY SCIENCE BUILDING, MANITOBA AGRICULTURAL COLLEGE, WINNIPEG
Samuel Hooper, Architect. *V. W. Horwood, Provincial Architect.*

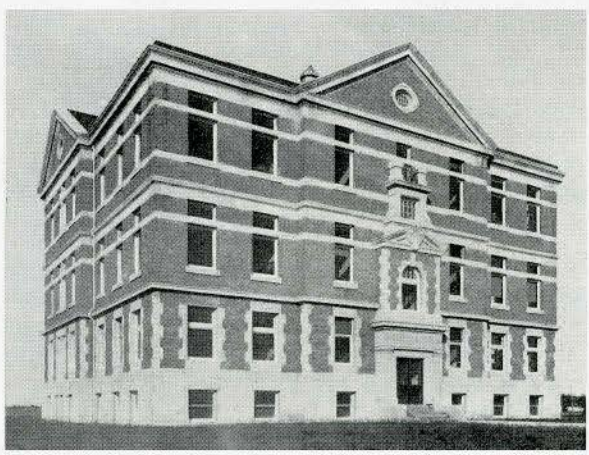
of the Campus. The main drive from here runs to the Jefferson Highway, a distance of over one mile. This driveway is being planted with trees the whole distance and is to be a Memorial Avenue. The usual offices for such an institution are contained in this building, including Reading Room, Library, and Class Rooms. The general finish is in Oak. Halls and corridor floors are in terrazzo.

The Horticultural and Biology Building is given over on the ground floor to Horticulture, Entomology, Forestry and a Museum. On the second floor is the Department of Biology with its laboratories, herbarium, drying and pressing rooms, class room and offices. The Department of Bacteriology occupies the third floor. Connected with this building are the greenhouses.

On the northwest corner stands the Chemistry and Physics Building, furnished with the necessary apparatus for Agricultural Chemistry, Physics and Mathematics.



POULTRY BUILDING
MANITOBA AGRICULTURAL COLLEGE
Samuel Hooper, Architect.



CHEMISTRY AND PHYSICS BUILDING
MANITOBA AGRICULTURAL COLLEGE
V. W. Horwood, Provincial Architect.

The Engineering Building, 156′ x 110′, contains all the shops and necessary machinery. Forges, machine shops, woodworking shop and drafting rooms are on the various floors.

The Stock Judging Pavilion is surrounded by the barns for convenience in handling the various animals. The judging area is surrounded by a large gallery with seating accommodation for very large classes. In this building are the Refrigerator Rooms, Butchers' Departments, Emergency Stables and a Veterinary Science Laboratory.

The Students' Residence and Auditorium Building is the largest building, the length being 550 ft. with wings to the rear. Accommodation is provided for 300 men and 200 women. The Auditorium has a seating capacity of 1200. The Dining Room is placed between the male and female residences. The building has a separate Gymnasium for men and women and separate plunge baths, lockers, showers, etc.

The Barns and Poultry Buildings are on the south west of the Campus, comprising Horse Barn, Beef Cattle, Dairy Cattle, Swine and Sheep Barn.

The Poultry Building is 60′ x 40′ and contains the Lecture Room, Incubators and Egg Room. Grouped around this building, are the fattening house, brooder and laying houses. The latter group of buildings is of frame construction.

The various Buildings are connected by tunnels which contain all the piping. Low pressure steam is used for heating the buildings. The vacuum pumps are in the Power House. Mechanical ventilation is used for the main buildings.

The water supply is pumped from the Red River to the Filtration Plant shown on Block Plan and from here to the Storage Tank. This Building is not yet finished, all reinforced concrete work being completed but the exterior only temporarily enclosed.

The Principal's Residence lies on the northeast of the site.

The original plans were made by Samuel Hooper and completed by V. W. Horwood, Provincial Architect.

The Standardization of Trade Literature

By G. T. HYDE, S.B., R.A.I.C.

Extract from an article in "Industrial Canada."

I THINK every architect, engineer and purchasing agent will agree that an astounding percentage of all the catalogues, circulars, etc., are not only unread, but reach the waste paper basket by the shortest possible route. This is not due to any desire to shorten the working day, but simply because it is impossible to read everything. Most of us, however, will put aside what we consider the useful portions of the documents, for use when required.

Now, unless this carefully saved information is instantly and readily available, months and perhaps years afterwards, the time spent in sorting and saving has been wasted, and we have an encumbrance, instead of a supply of valuable data. To fulfill this desired condition, a proper filing system is necessary, and the material to be filed must be of convenient and preferably uniform size.

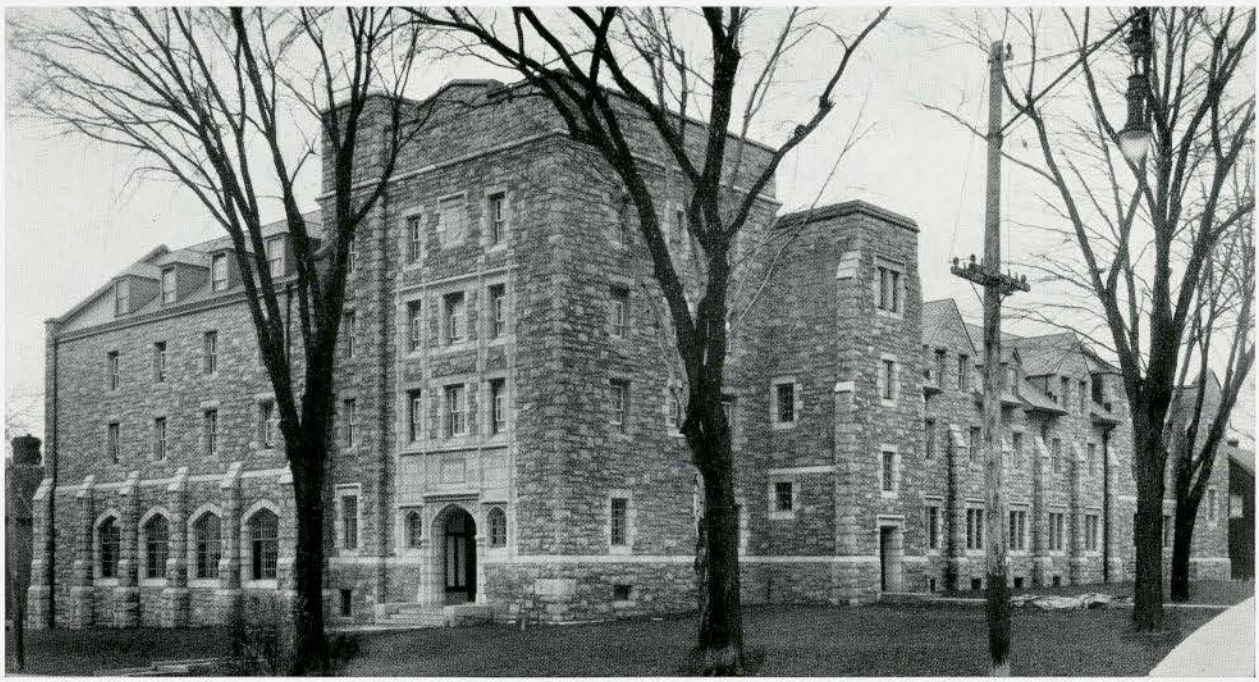
A summary of the catalogues (to say nothing of circulars) in our office, shows that they range in size all the way from 3 in. by 4 in. to 13 in. by 19 in., with thicknesses equally varied. To be in any way accessible, these catalogues must be set on end, as in a bookcase, not one on top of the other. Of course, it would be possible to design and build a fitting capable of housing them in the former manner, but I doubt if the ordinary office would be able to hold much more in the way of furniture; it would be a very large affair. The big sizes are often the worst, but the little ones are bad; they seem to possess an insane desire to hide behind their taller and thicker companions. Just why this great variation in size is thought of advantage is hard to say. In many cases the large ones are so beautifully bound and printed that one refuses to have them destroyed immediately, but certainly they will not be known as "handy reference books."

In my opinion it would be best to keep to uniform dimensions for the circulars and minor catalogues —about the same as letter size, 8½ in. by 11 in., and for important and more or less standard catalogues and handbooks, something smaller, say 5 in. by 8 in. For reasons to be explained later, this former size should be the rule, and the latter the exception.

In specifying desirable qualities from the standpoint of substance, I shall give a very important place to "brevity." If a two-page pamphlet gives the same information as one of four pages, it is much more valuable.

If illustrations are used, line or working drawings are generally of far greater value than photographs or wash drawings. Wherever possible, give complete directions for installation, with explanatory diagrams properly dimensioned.

If all trade "literature" were prepared in accordance with the above recommendations, it would serve its purpose to much better advantage than it does to-day, but, as I stated before, it would not be doing its best if it was not instantly to be found when required. Fortunately, this feature has been exhaustively covered (in the case of the building trades) by a special committee of the American Institute of Architects, and their Document No. 172 contains a "standard construction classification," with directions for its use. It is, of course, prepared for use in the United States, but is in form most elastic and could be adapted to all conditions to be found in the Canadian building industry. I am sure the Institute, and the American manufacturers, would welcome its use by interested concerns in Canada. It assumes the filing of pamphlets and catalogues in ordinary vertical letter files, hence the size dimensions given above—8½ in. by 11 in. Printed reference numbers for proper classification appear on all issues from the manufacturer. They thus reach a proper destination in the file and are found from the index when required—a much better end than was attained by the aggravating waste paper route.



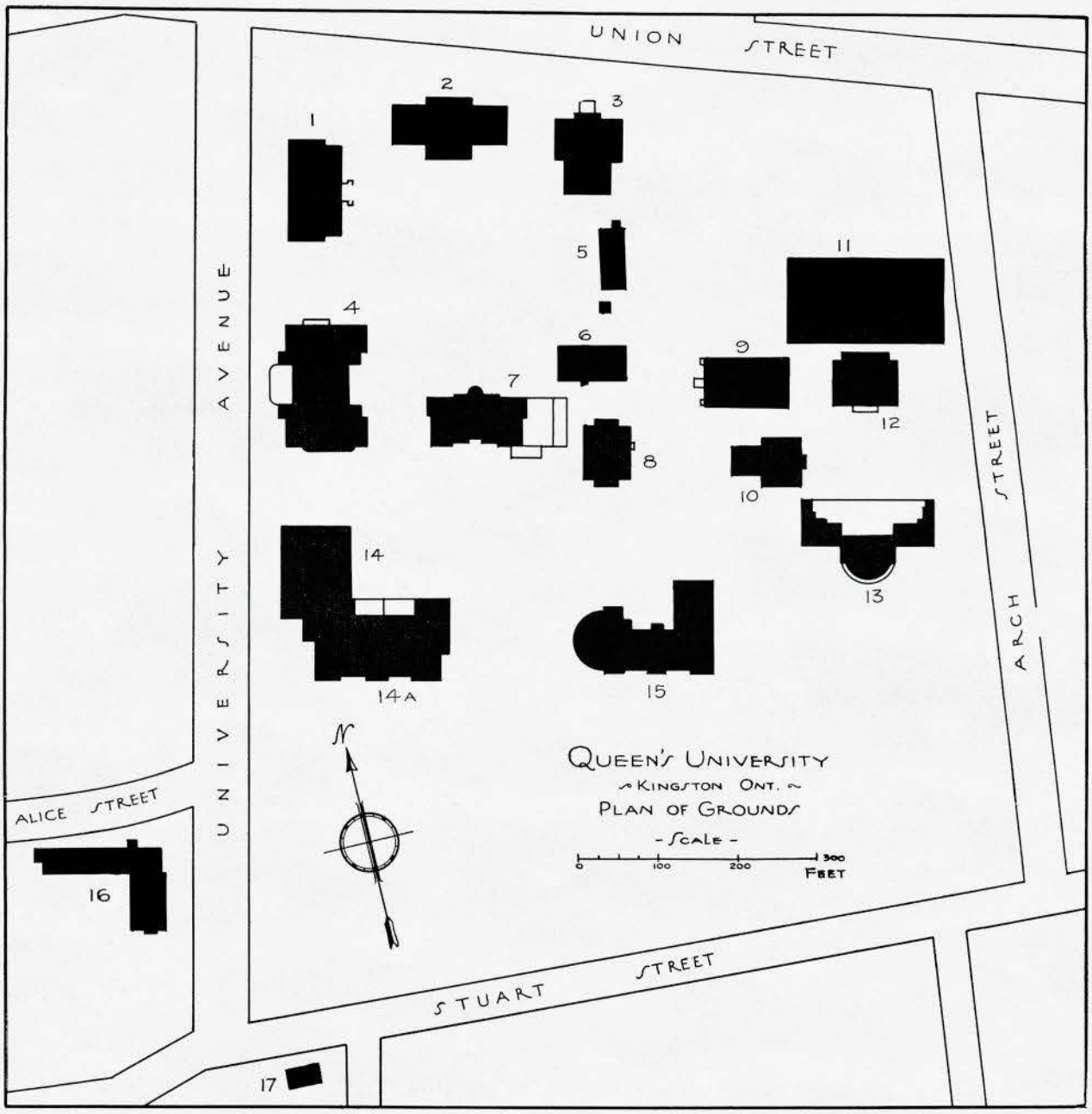
BAN RIGH HALL, WOMEN'S RESIDENCE, QUEEN'S UNIVERSITY, KINGSTON, ONT.
Shepard & Calvin, Architects, Toronto

Queen's University, Kingston, Ontario

IN her own part of Canada, in this year of grace 1925, the name of Queen's is likely to make the hearer of it think of championships and of a football team dressed in vivid jerseys. Her traditions, her long record of academic work, and her buildings in Kingston are perhaps not so widely known as they deserve to be. One recalls talking after a recent Convocation at Queen's to an Ontario professor who, while he knew Queen's in a general way, and was pleased to have had her honorary LL.D. that afternoon, was amazed at the settled and dignified air of the old place, at the equipment, and at the number of the staff and students. So it may be of interest to go back briefly into the history of Queen's and trace her growth; especially, in the present connection, in the matter of the buildings as they stand on her campus in 1925.

Queen's is the child of the Presbyterian church, or more specifically of the Church of Scotland, and was established by Royal Charter, 16th October, 1841. This date is "University Day" in her calendar. The Charter sets forth that the University was established "for the education of youth in the principles of the Christian religion and for their instruction in the various branches of Science and Literature". The first funds came from the Church of Scotland and the Government of Canada, also from private subscriptions. The first classes were held in March, 1842, in a frame building which still stands in Colborne Street, and is illustrated. The Professors were two in number, the students ten. The growth of the enrolment of students has been as follows: in 1860 there were 177; in 1880, 240; in 1900, 720; in 1910, 1612; 1925 about 1800.

From her small beginnings the intentions and hopes of her founders were gradually realized in the addition of various Faculties beyond those of Theology and Arts. The Medical Faculty was established in 1854, then became a separate body as The Royal College of Physicians and Surgeons in 1855, but still affiliated. It again became a regular Faculty of Queen's in 1891. A Medical College for Women was opened in 1883 but this was discontinued in 1894 when Toronto admitted women to the study of medicine. It is interesting to note here that Queen's was the first University in Canada to open its doors to women students. The Faculty of Applied Science is the present form of the School



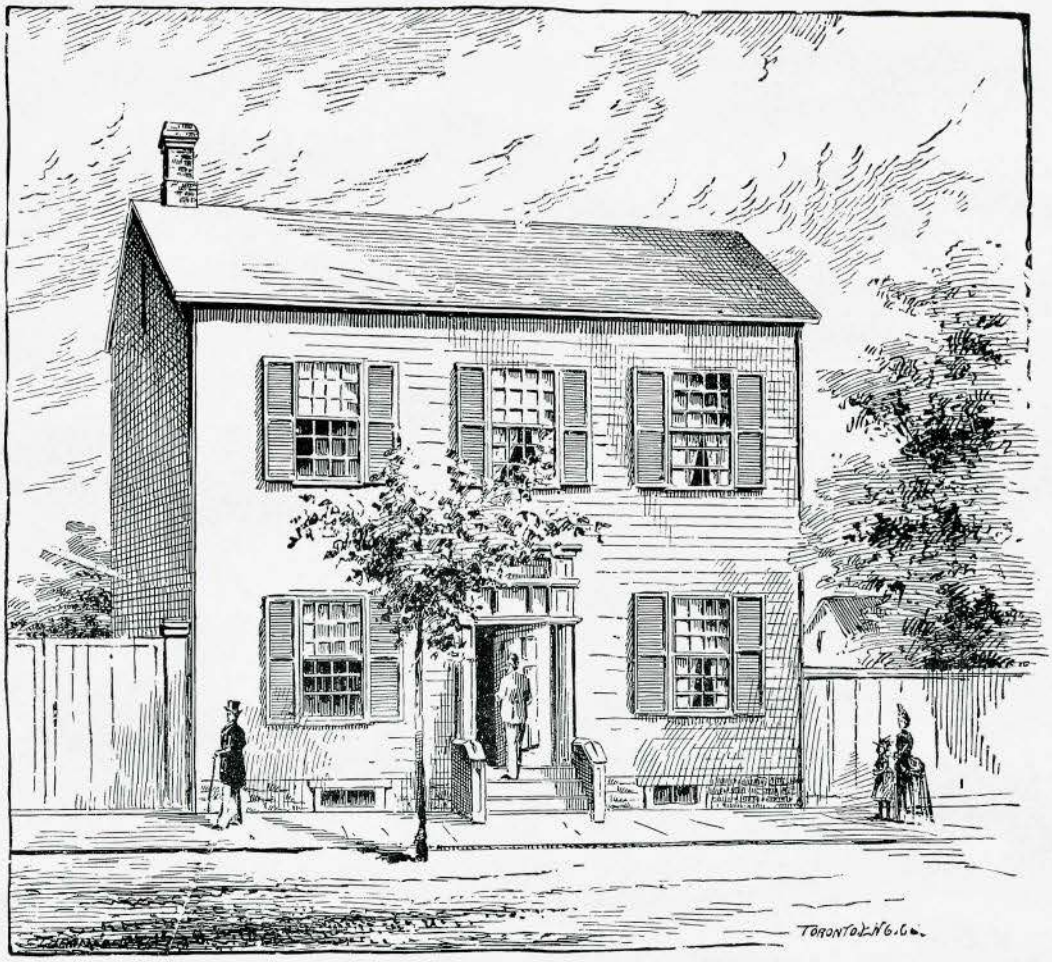
KEY TO BUILDINGS

1. Douglas Library.
2. Gordon Hall (Science).
3. Nichol Hall (Science).
4. Ontario Hall (Science).
5. Mechanical Building (Laboratory).
6. The Mill (Mining).
7. Fleming Hall (Science).
8. Carruther's Hall (Science).
9. Gymnasium.
10. Old Medical Building.
11. Hockey Arena.
12. New Medical Building.
13. Principal's Residence.
14. Grant Hall (Convocation).
14a. Kingston Hall (Arts).
15. Old Arts Building (Theology).
16. Ban Righ (Women's Residence).
17. Observatory.

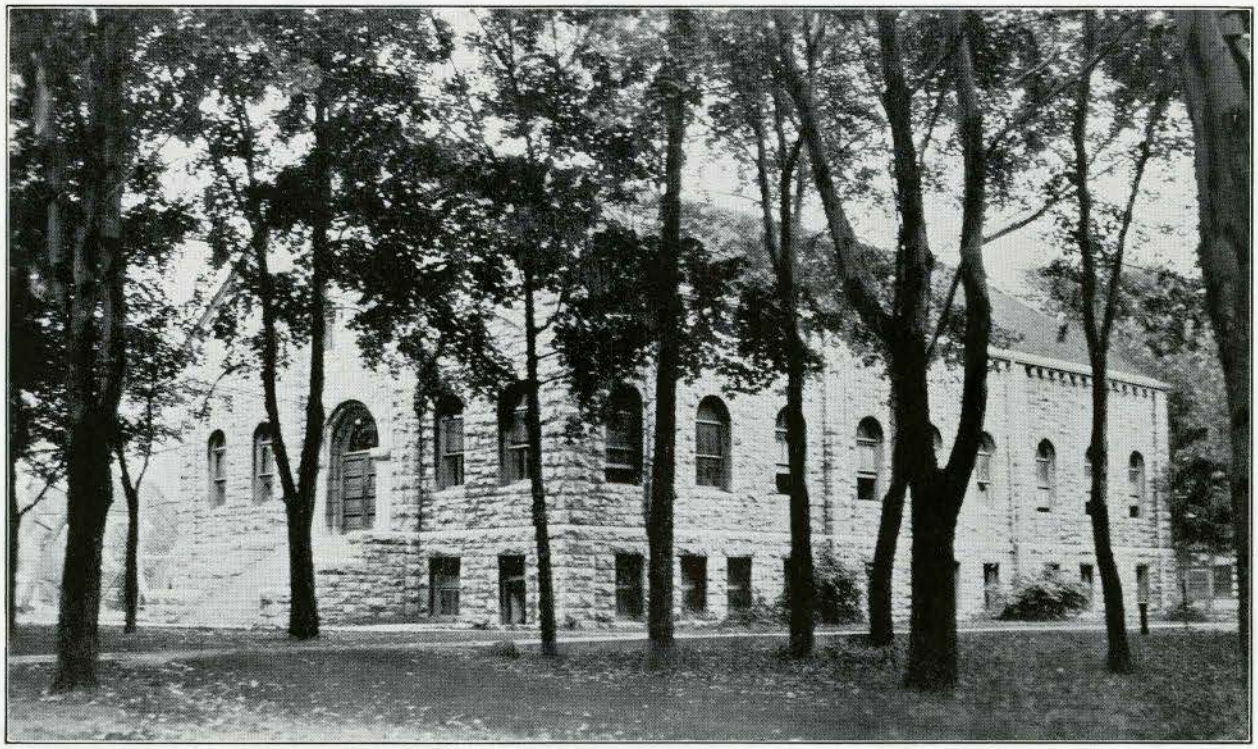
of Mining, opened in 1893 under a separate charter. Mining is still the outstanding department of the Science Faculty at Queen's and many of its graduates have an international reputation.

For a few years Queen's had also a Faculty of Education, it was discontinued under a re-organization scheme of the Province of Ontario. Queen's is no longer formally sponsored by the Presbyterian Church; in 1912, by Dominion Legislation, this control was removed, though the Theological Faculty remains as a part of the University.

Queen's main support has always been in her own graduates' loyalty, but while many of them and many of her staff ought to be mentioned even in these brief notes, for their devoted service, there is one figure which would dwarf them all. George Monro Grant was Principal from 1877 to 1902 and the Queen's of to-day is really his work. Only those who know Queen's intimately can have any conception of how true this statement is; he "made" the place during those twenty-five devoted years. The benefactors whose services are commemorated by tablets in the buildings were inspired by Grant, and to him also must go the credit of having secured



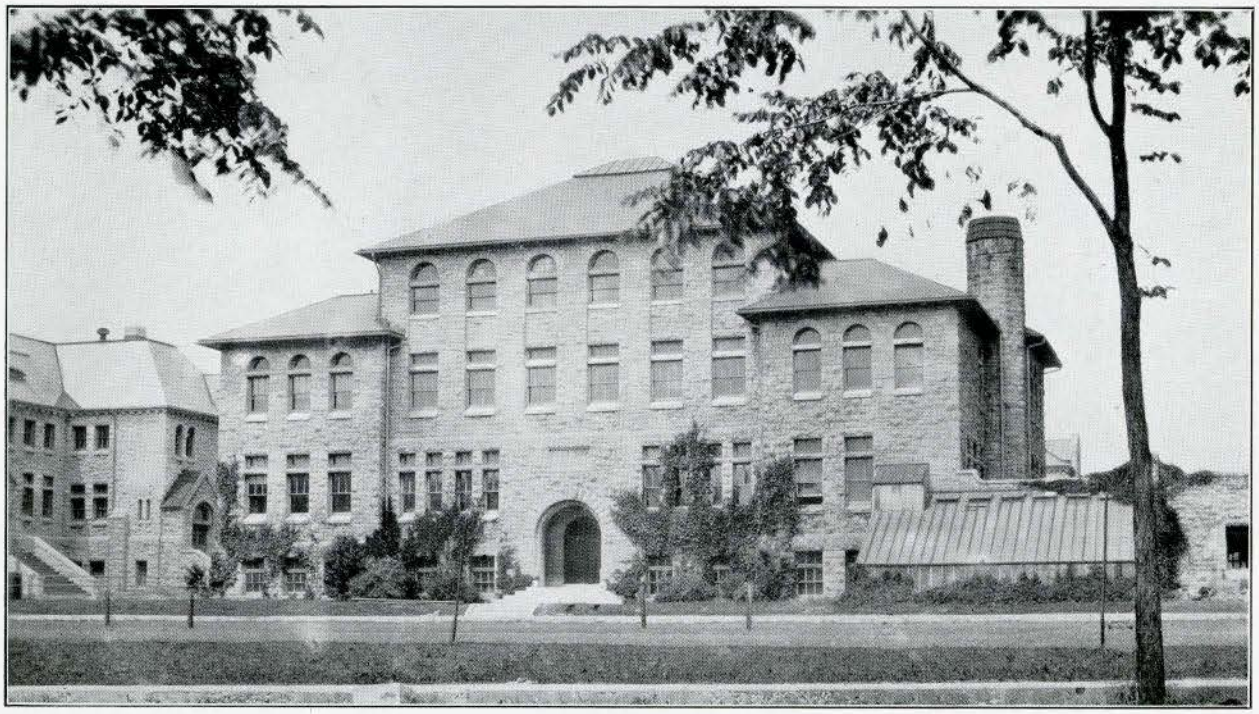
ORIGINAL BUILDING IN WHICH FIRST SESSIONS OF QUEEN'S UNIVERSITY WERE HELD IN 1842



GYMNASIUM, QUEEN'S UNIVERSITY, KINGSTON, ONTARIO, 1906

Power & Son, Architects, Kingston

OLD ARTS BUILDING (NOW THEOLOGICAL HALL), QUEEN'S UNIVERSITY, KINGSTON, ONTARIO, 1878

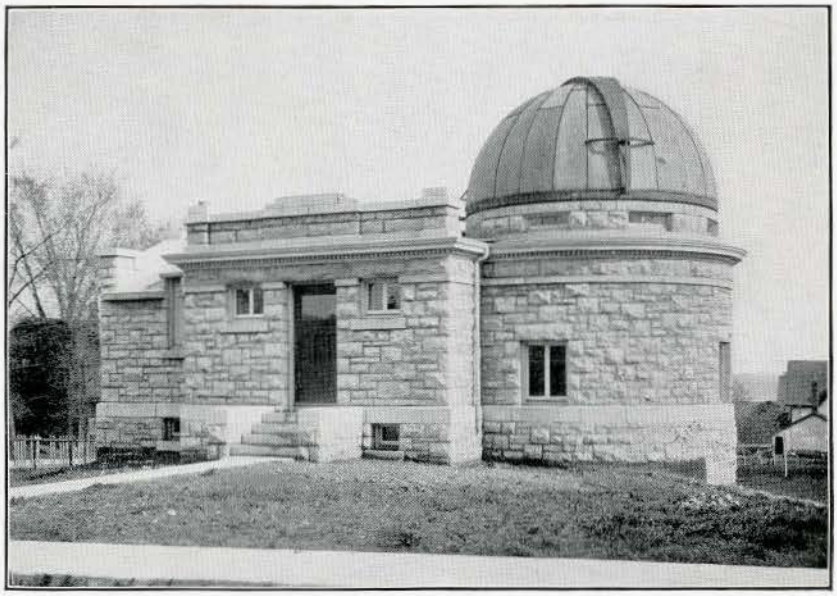


FLEMING HALL (ENGINEERING), QUEEN'S UNIVERSITY, KINGSTON, ONTARIO, 1905

Symons & Rae, Architects

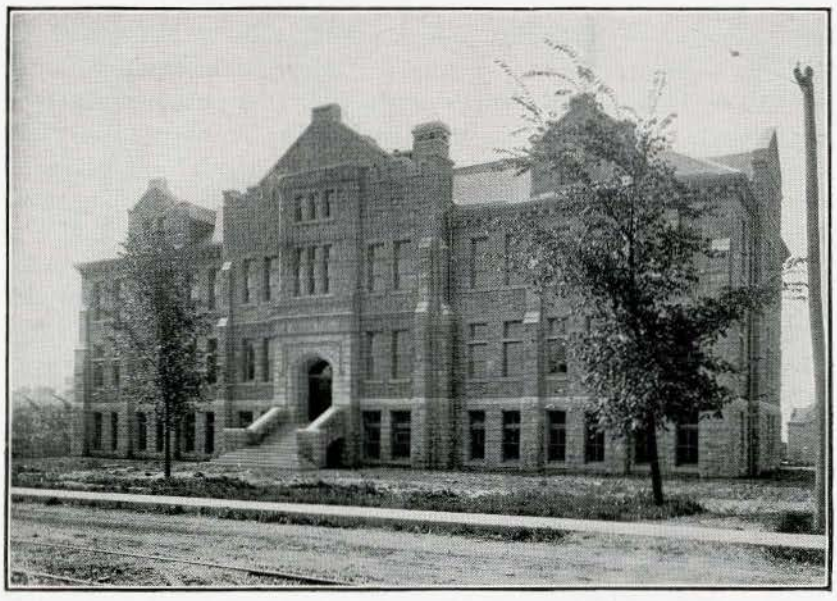
many men for the staff who were leaders in their own lines.

Queen's campus is situated on rising ground overlooking Lake Ontario to the south; the block does not, unfortunately, reach the water's edge. Other land, however, has been acquired (for extensions) which is on the lake front, and the authorities are also gradually acquiring land to the east to reach the open City Park. The southeast corner of the campus is beautifully wooded, and the main drives bordered with trees. Well arranged shrubbery has been planted to give a setting for the buildings. Some of the older buildings, as well as the newest, are illustrated. The oldest is not shown, it is now used as three houses, Principal's Residence flanked by two smaller houses. Next in age is the old square Medical Building. These are both in the local Kingston tradition, a free type of Renaissance, the walls of dressed and coursed stone. When the first Arts building (now Theological Hall) was built, this tradition was departed from and a new one set up. The stone has been laid rock-faced ever since, the buildings being in various types of Gothic, Romanesque, then Gothic again. It is arguable that there has been a loss by this change; one recalls an Old Country professor arriving to take over his work and being very disappointed to find that the fine old Court House was not the Queen's University building he was looking for! Be that as it may, and in spite of the obvious imperfections of the group, the buildings as a whole make a fine impression. They are all of the Kingston limestone which bleaches out to a light clear gray. This uniformity of material helps the group wonderfully.



OBSERVATORY, QUEEN'S UNIVERSITY, KINGSTON, ONTARIO
Power & Son, Architects, Kingston

To confirm the assertion made above, that Queen's graduates are her main support, the origins of some of the buildings may be cited; not all are here illustrated. Grant Hall was erected from funds subscribed in small amounts by the students of 20 years ago. Nicol Hall was the gift of William Nicol, a graduate, and afterwards professor in the Science Faculty. The gymnasium was put up with funds subscribed by the students and faculty. The medical professors once guaranteed the necessary funds to have a storey added to the building of their faculty. The Richardson Memorial Stadium and the Harty Arena were gifts to the athletic life of Queen's as the others were to her academic activities.



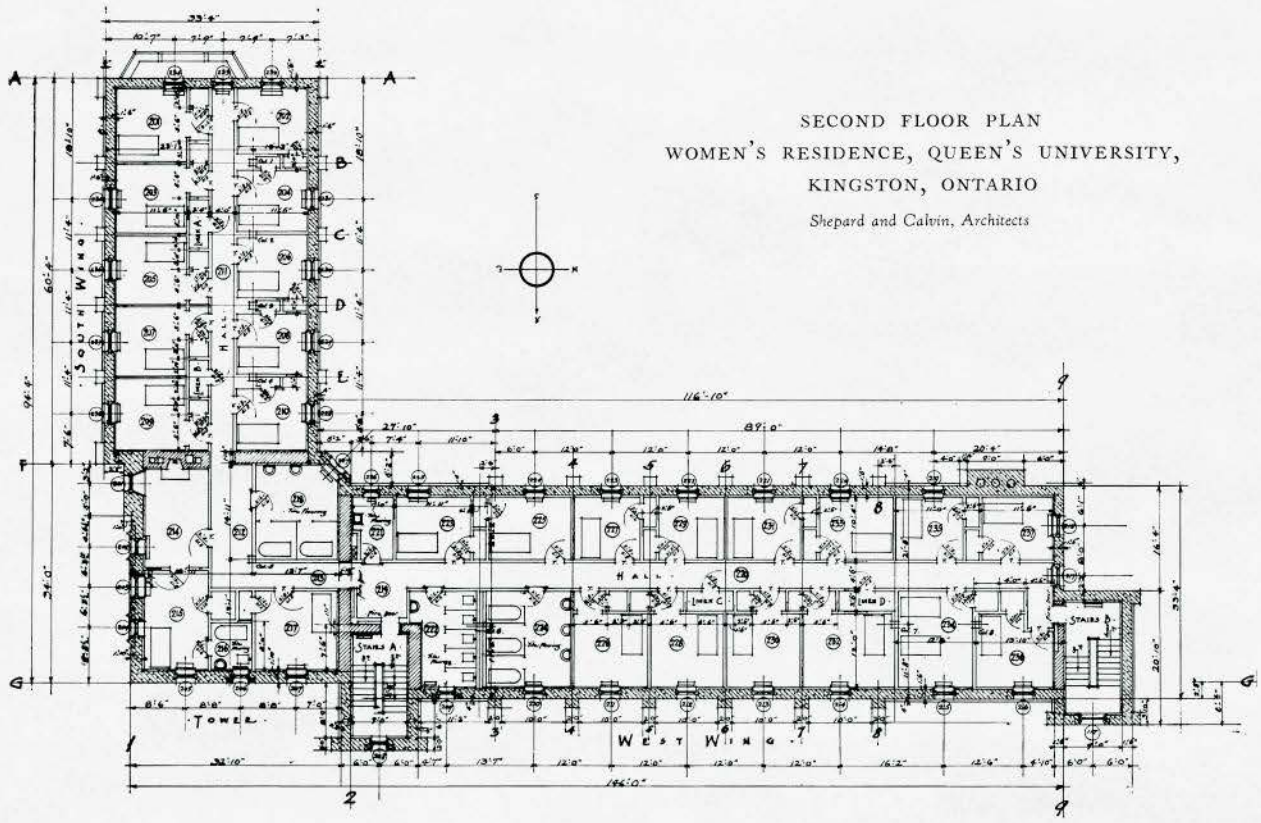
GORDON HALL (CHEMISTRY), QUEEN'S UNIVERSITY, KINGSTON, 1911
Power & Son, Architects, Kingston

The same thing holds good for the new Douglas Library, which is the fulfillment at last of a long-deferred hope. For many years the very valuable Canadiana belonging to Queen's (they are said to be second only to the records in the Dominion Archives) were housed at great fire risk in one end of what is now Theological Hall. The books, furthermore, besides this risk of their situation, were not properly available

NICOL HALL (METALLURGY), QUEEN'S UNIVERSITY, KINGSTON, ONTARIO, 1912
Power & Son, Architects, Kingston

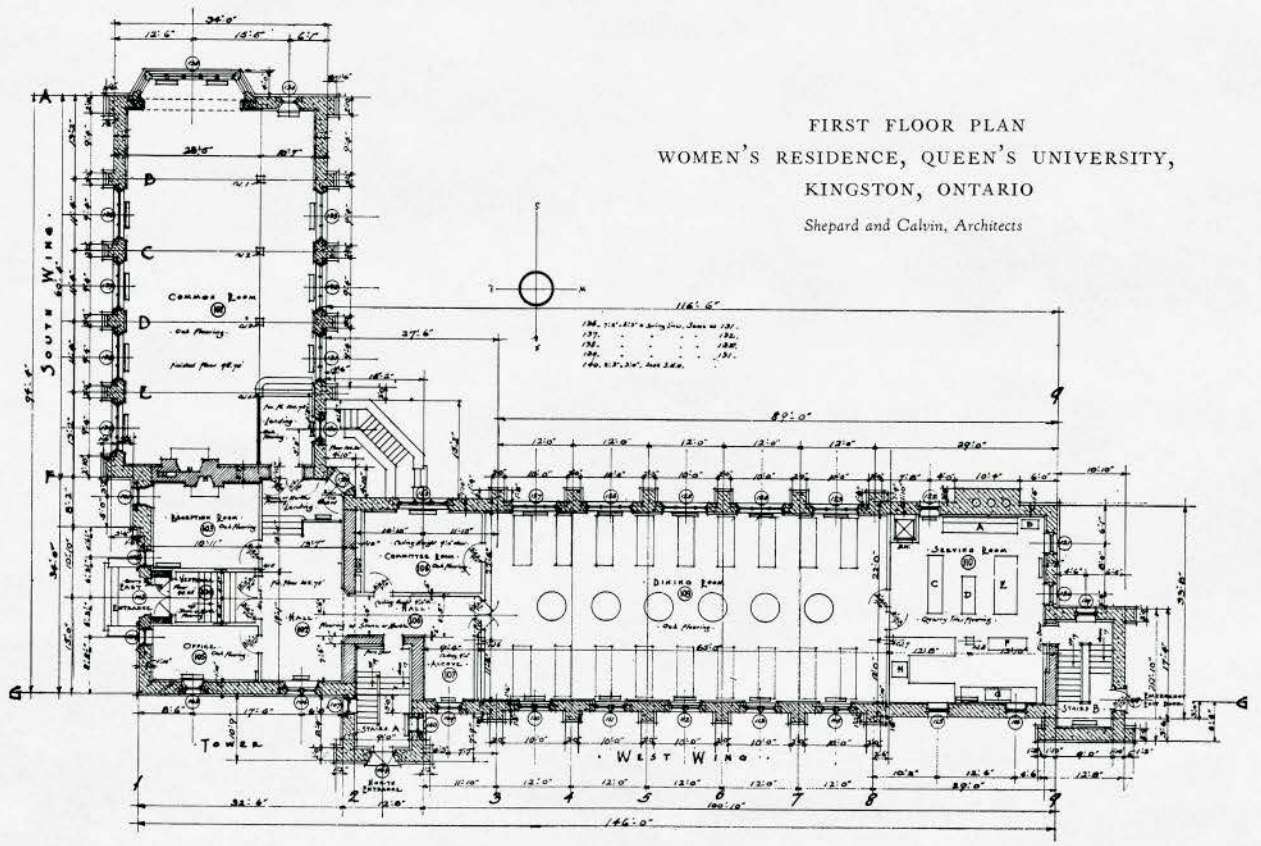
for students' use. Some small funds had been set aside for a Library, but in 1916 the late Dr. James Douglas of New York (copper-mining expert), an old graduate and then Chancellor of the University, gave $150,000 for the purpose. Various considerations postponed the erection of the building until 1923, by which time the available funds had been doubled by a grant from the Ontario Government. Work was begun in April, 1923, and the building was opened by Premier Ferguson in October, 1924. The photographs and plans, as reproduced, will give a general idea of the building, which is Gothic in style, the walls of Kingston limestone and the cut-stone Queenston limestone. These two stones are widely different in color when first quarried and set, but a year's weathering makes them match closely. The sash are steel casements; the outside doors oak, the main entrance doors are ornamented with the coats-of-arms of Queen's University, City of Kingston, Province of Ontario, Dominion of Canada. The construction is fireproof throughout, the roof is of green non-fading slate of varying thicknesses of rough texture and laid with graduated exposure to the weather. All the exterior metal work is copper. The book-stacks will have, when fully developed, a capacity of some 400,000 volumes; only one-half of the possible shelving has been installed at present, as the library has now only some 140,000 volumes. Because of this excess of size beyond present library needs, the administrative offices of the University, and the post office, are housed temporarily in the first and second floors of the Library, at the south end of the building. The rest of these floors is taken up by the offices of the Librarian and his staff, and by Exhibition and Seminar rooms. The whole of the front part of the third floor is occupied by the main reading room, which has tables and chairs for 170 readers, and is lined all round with quarter-cut oak bookshelves. The rest of this floor contains two smaller reading rooms, one for the faculty and one for periodicals, also the catalogue case dividing one end of the large reading room from the catalogue room. The charging desk is also on this floor at the entrance to the main reading room. There are also the usual library accessories such as bindery and repair facilities. An automatic elevator at the north end of the building serves the various floor and stack-room levels. This elevator is for the use of the Library staff only. There are also two book-hoists to take books from the stacks to the charging-desk on the top floor. The woodwork throughout is quarter-cut oak.

A special feature of the library is the small Memorial Hall in the centre of the first floor, in

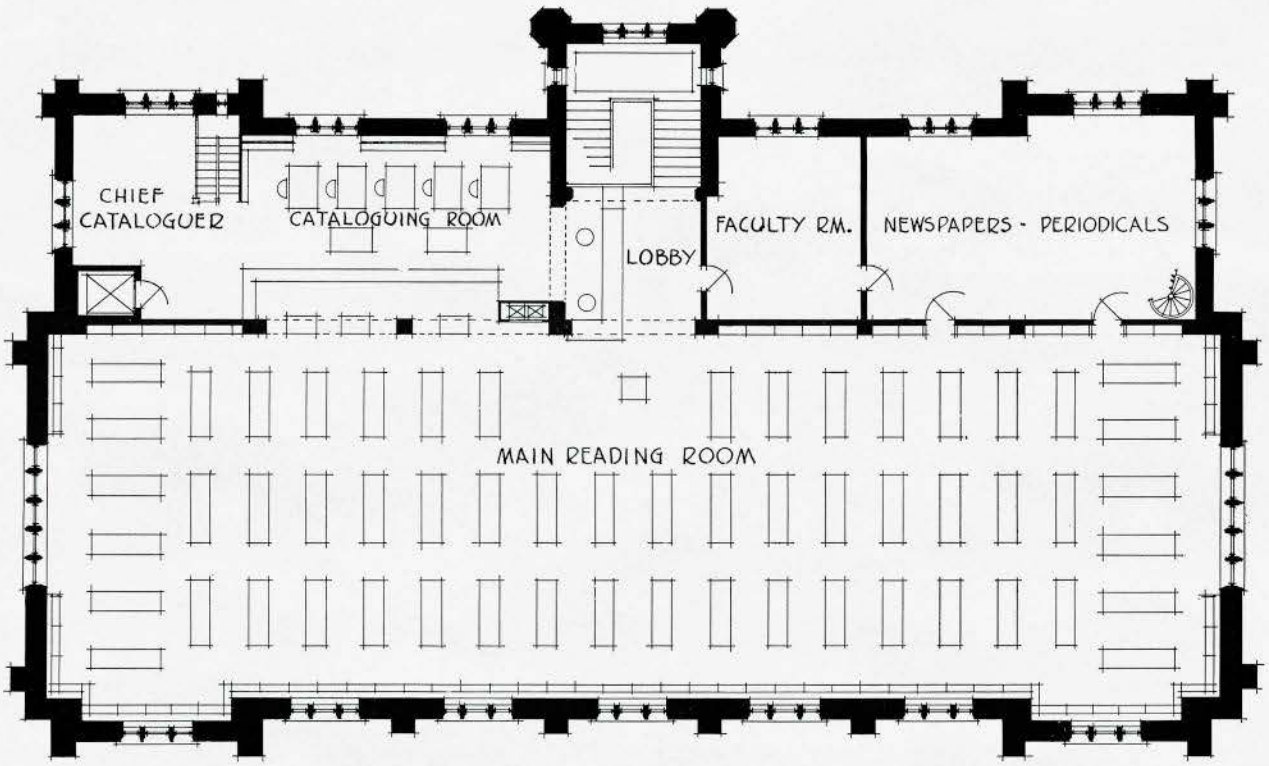


SECOND FLOOR PLAN
WOMEN'S RESIDENCE, QUEEN'S UNIVERSITY,
KINGSTON, ONTARIO
Shepard and Calvin, Architects

which is a large bronze tablet with the names of the men of Queen's Staff, her graduates, and undergraduates who lost their lives in the great war. There are some 280 names. This Hall goes through two storeys, is finished in cut Indiana limestone with a ribbed and vaulted ceiling. There are penetrations, or windows, through the upper part, at the second floor level which are to be filled with com-



FIRST FLOOR PLAN
WOMEN'S RESIDENCE, QUEEN'S UNIVERSITY,
KINGSTON, ONTARIO
Shepard and Calvin, Architects

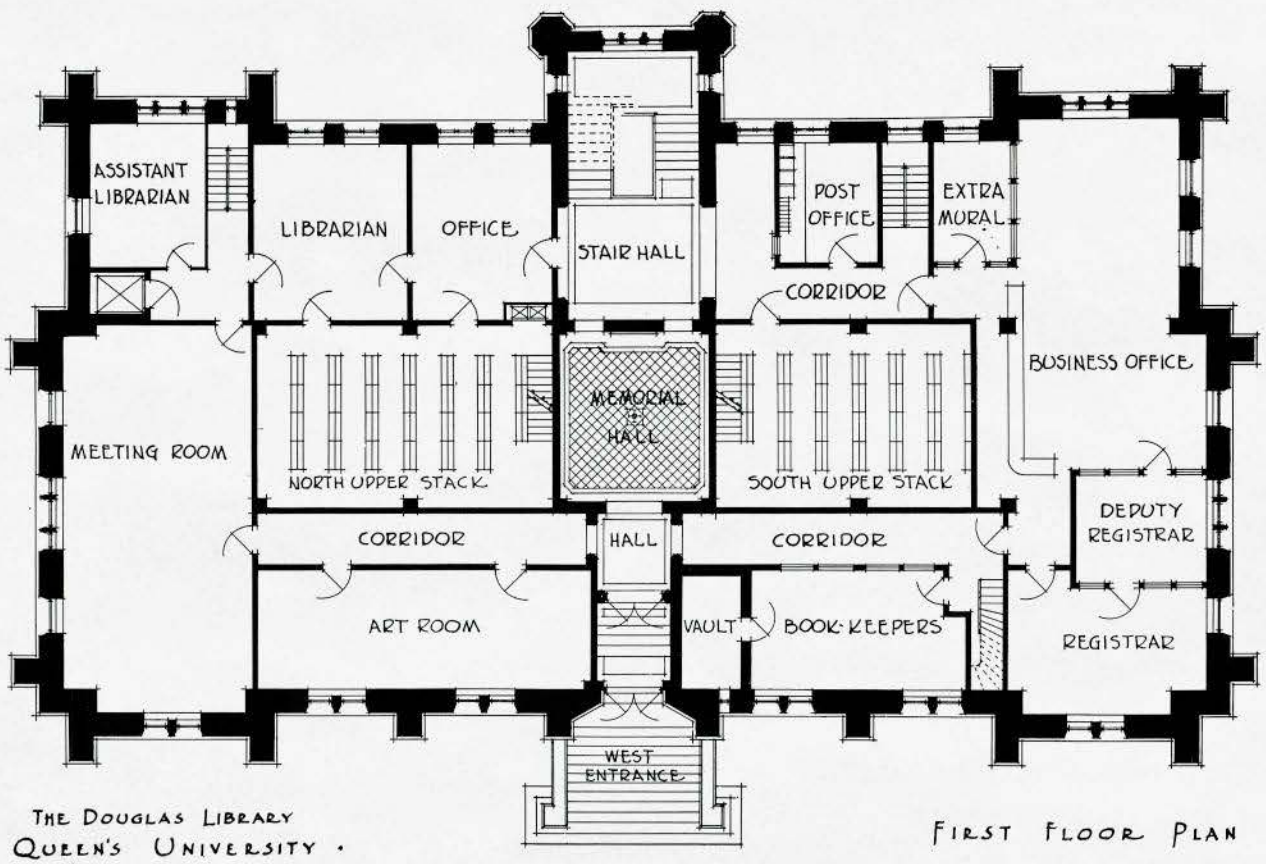


THE DOUGLAS LIBRARY
QUEEN'S UNIVERSITY
KINGSTON, ONTARIO

· THIRD FLOOR PLAN ·

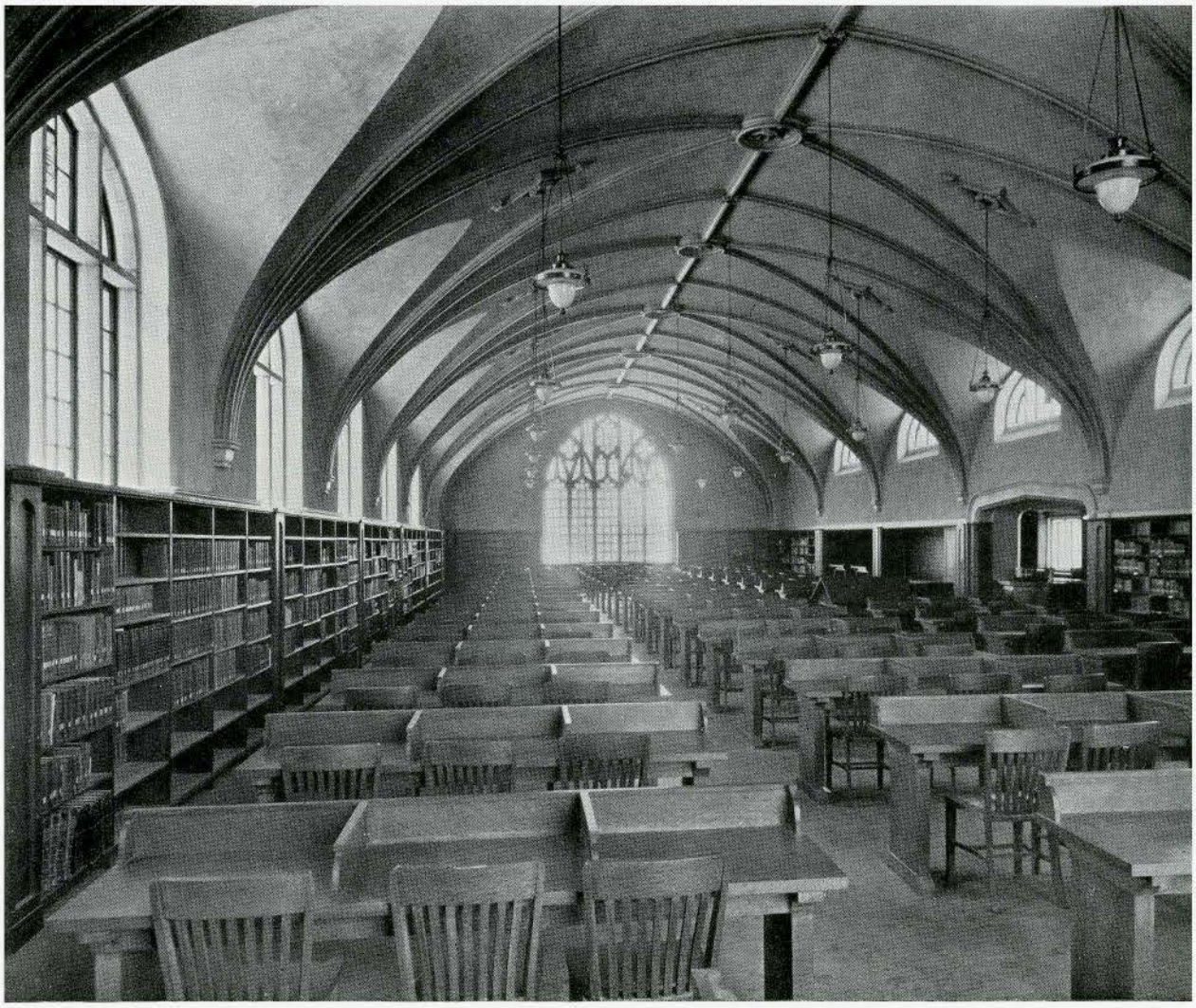
memorative stained glass. The Hall has a quarry tile floor and a base of Verde antique marble.

The Women's Residence (Ban Righ Hall) is the newest building at Queen's. It stands just across



THE DOUGLAS LIBRARY
· QUEEN'S UNIVERSITY ·
KINGSTON, ONTARIO

FIRST FLOOR PLAN



INTERIOR OF NEW DOUGLAS LIBRARY, QUEEN'S UNIVERSITY, KINGSTON, ONTARIO
Shepard and Calvin, Architects. E. L. Tilton, Consulting Architect.

University Avenue from the main campus and is the tangible expression of a long-thought-out and doggedly followed scheme of the women graduates of Queen's to provide a residence building for the women students. A good deal of progress with the collection of funds had been made before the war, but the women gave up their scheme temporarily in order to work instead for Queen's Hospital in France. In 1920 a new objective of $80,000 was set (about $125,000 was actually raised). The University gave the site and $80,000 in money to match the women's objective. Upon completion the building was handed over to the University. Building operations were begun in the early spring of 1924, and the building completed in the summer of 1925. The formal opening by Lady Byng took place 9th November, 1925. The Residence is L shaped, the main entrances are at the exterior angle; a large Common-Room in the south wing and Dining Room in the west wing, with kitchens in west wing basement are intended to serve all the women undergraduates. On the upper floors there are bedrooms for some 60 women students, suites for the Dean of Women and the Dietitian, and quarters for six maids. The Common-Room is lighted on three sides, panelled in quarter-cut oak, and has an oak floor. The Dining Room is very simply finished, with maple floor.

All the buildings of Queen's, including the Principal's residence, are heated from a new Central Heating Plant on the lake front. This plant serves the Kingston General Hospital as well as the University, and supersedes an older plant which served the University only, and which is said to have been the first of its kind at any Canadian University. The Library is heated by direct steam radiation with pumps for return of condensate. The Residence has hot-water heating, the water being heated in generators by steam from the Central Plant. Power and light in both buildings are supplied by D.C. from the Central Plant. Provision is made in both however, for using Hydro A.C. when necessary.

The architects for the Women's Residence and the Library were Shepard and Calvin, Toronto, with Mr. E. L. Tilton of New York as Consultant on the Library building.

New Construction Tendencies and Their Probable Effect on Canadian Architecture

By JAMES GOVAN, R.A.I.C., Consulting Architect, Toronto.

Joint Author of "Fuel Saving Possibilities in House Heating" Report No. 10 of Research Council of Canada, Ottawa.
Author of "Insulating and Heating Possibilities in Buildings," Journal of Engineering Institute of Canada.

PART II.—(Continued from Sept-Oct. Issue, Page 189)

IT has been shown in the previous article in the September-October issue, that ignoring laboratory test panels altogether, outdoor experiments on small houses lasting over at least one winter have been made under the Auspices of the University of Saskatchewan and the Norwegian Government. The results were given in the January and succeeding numbers of this Journal and in the September, 1924, number of the *American Architect* and *Architectural Review* respectively.

From an analysis of these experiments I gave figures proving that the ordinary methods of construction at present in use in Canada have been adopted from other countries by our Architects and Engineers, without any special regard to the peculiar demands of our climatic conditions.

That analysis showed that ordinary wall construction not insulated could be held responsible for increases of from 75 to 400 per cent. in the fuel consumption required to take care of the heat losses through such walls, when compared with similar walls insulated against such extravagant waste.

In the experiments referred to the walls used were generally similar to those commonly adopted for the construction of buildings having heating plants and the general conclusion to be derived was that only when insulation of a thickness comparable to the thicknesses ordinarily used in cold storage work was used, did the results reach the point demanded by the difference between our Canadian normal outdoor temperatures and the indoor temperatures of our heated buildings in winter.

Had it been considered advisable to go beyond the scope of these two University experiments, it could have been shown that by using other materials of high insulating value, produced in forms suitable for use in the greater thicknesses that give the most economical results in reduced heating costs for capital expended, the comparison between insulated and non-insulated construction is even more striking than was indicated in my previous analysis.

Sufficient emphasis was given, however, to the fact that a client's interests are not being properly protected by an Architect who continues to ignore the mass of proof of the value of insulation. Granted then that the majority of the members of the profession realize that our methods of construction need revision, how can they apply the data that has been prepared from the various laboratory and other experiments for their guidance?

The answer to that question is that we should study the results of such experiments in order to be in a position to give clients reliable advice regarding the heat retaining value of the walls and roofs proposed to be used. Data on this subject cannot be obtained by scanning the headlines and filling an album with illustrations clipped from our architectural magazines. If life is too short or the mental antipathies of the aesthetically inclined will not permit the study of values that affect clients' pocket books so materially, the advice of an engineer who does equip himself with such information should be obtained. One objection to the latter practice is that we cannot be certain whether the engineer consulted is also unwilling to keep himself posted on such matters, and uses rule of thumb methods for calculating his heating requirements that totally ignore the differences between the various types of insulated and non-insulated walls and roofs. The point to be observed is that if capital is invested in a building with low heat conductivity, the owner should get the benefit of such foresight in reduced capital expenditure on heating plant in addition to lower annual fuel consumption. It stands to reason that if the engineer consulted is interested in the sale of heating equipment he will want to be absolutely certain that the insulation used will do what is claimed for it, but having satisfied himself on that point, he should realize that wasted capital expenditure in building results in reduced earnings on that capital and therefore just so much less building progress in the community.

The great need of the moment is for simplified presentation of insulated construction data by scientific authorities and the assimilation of such information by the Architect, who after all is responsible for its interpretation to meet the particular requirements of each job.

The way to a clearer understanding of the results to be obtained from the changed methods of construction that are being adopted will be made easier if we can apportion correctly for our clients the amount of fuel required for the three main divisions of heat unit consumption, viz.:

(1) British Thermal Units required for windows and doors.

(2) British Thermal Units required for wall and roof construction.

(3) British Thermal Units required for ventilation.

For the purpose of illustration let us take a medium sized house of ordinary construction that requires per winter 9 tons of anthracite coal in Southern Ontario to maintan 70 degrees in the day time and 55 degrees for about eight hours each night.

Such a house could have for instance the equivalent of 8320 cubic feet air space with an air change once per hour; 930 square feet wall surface; 230 square feet glass and doors, with single glass in windows; 832 square feet ceiling under roof space.

Total annual heat loss would be as follows approximately:

	British Thermal Units.
(1) For glass and doors	35,000,000
(2) For wall and roof construction	77,000,000
(3) For ventilation	25,000,000
Annual total	137,000,000

With anthracite coal giving 12,650 B.T.U's per pound and a heating plant efficiency of 60 per cent. the foregoing values can be put in tons of coal as follows:

(1) For glass and doors	2.30 tons
(2) For wall and roof construction	5.06 tons
(3) Ventilation	1.64 tons
Total	9.00 tons

Of these three items the second is the only one that would be affected by the use of insulated construction. Without adding one dollar to the first cost of such a house it is possible to construct it so that 60% of the heat lost through the walls and roof could be saved, and the first item can be cut in two by using "double sashed" windows. Any extra cost for such "double sashing" would be offset by reduced heating plant cost so that the full recovery would be made on the fuel saving of a year or two at most.

With such construction the annual fuel consumption would be approximately as follows:

(1) For glass and doors	1.3 tons
(2) For wall and roof construction	2.06 tons
(3) For Ventilation (as before)	1.64 tons
Total	5.00 tons
Annual Saving	4 tons

Sometimes we come across individuals whose ideas of the heat conductivity of wall and roof construction and air leakage into buildings are somewhat confused. For such a case the best reference I can make is to the experiments by Messrs. Houghten and Schrader at the Research Laboratory of the American Society of Heating and Ventilating Engineers at Pittsburg, recorded in the A.S.H.V.E. Journal February and June 1924.

They proved conclusively that in a room of ordinary construction, with the external wall or walls plastered and painted three coats, the air in-filtration through the walls due to an external wind pressure equal to an indicated velocity of 55 miles per hour did not exceed three cubic feet per minute. In the same experiments they also showed that air in-filtration into such a room depends on the tightness of the sashes of the windows in their frames and the tightness of the window frame to its surrounding wall construction. These factors are allowed for in the calculations for the ventilation of a building and have nothing to do with the heat conductivity of wall or roof construction.

When we realize that the worst kind of construction may leak heat units by the million and still be absolutely impervious to the passage of air, we will understand why we can waste fuel in our buildings without affecting the purity or impurity of the air in the slightest degree. In this connection one fact has been demonstrated in buildings well insulated against heat loss through walls and roofs viz.: as the outside temperature drops, the occupants of such buildings find that they can still retain the heat generated by their heating plants and, therefore, they are less disposed to close up all windows, doors and other openings, as is so often done in the interests of comfort and economy in uninsulated buildings.

FUTURE TRENDS

When the benefits of the new construction methods suggested become generally appreciated, what effect on our Architecture will these new tendencies have? Before attempting to answer that question we should think for a moment of heat conductivity in structures other than what is conveyed from the heating plant through walls and roofs.

The necessary qualities, that have been shown to be lacking in the commonly used building materials for exterior wall purposes to resist heat transfer in the lower range of temperatures of occupied buildings, are required to a still greater degree to prevent the conduction of heat at conflagration temperatures to the structural members carrying the loads. Already tests conducted at the Underwriters Laboratories on fireproofing of steel columns show that lighter materials having high insulating value afford greater protection than many of the heavier and denser materials that we so frequently use.

The term "fireproof" is just about as misleading as the "dead air space". No building materials are fireproof in a strict interpretation of that term, inasmuch as they are all destroyed when exposed to high temperatures for longer or shorter periods of time, the duration of which depends almost entirely on their heat conductivity and, to a lesser extent, on their total amount of expansion and their relative resistance to direct fire exposure.

Economic considerations will, I believe, ultimately force us to develop more efficient protection for structural members of steel and other metals, protection that will have higher insulating value and be very much lighter in weight.

Several materials with these qualifications could now be named and their use for the purposes outlined merely depends on their manufacture in forms that will permit their application to structural members.

That develpoment will be hastened by the extended use of rustless metal alloys of various kinds in the external architectural treatment of our metal structures. Illustrations reproduced herewith show Messrs. Sproatt and Rolph's very successful application of bronze to the lower storeys of the T. Eaton Co.'s store in Toronto and Messrs. Carrere, Hastings, Shreve and Lamb's adaptation of cast and sheet aluminum for the top of their tower on the Standard Oil Building, New York.

LOWER STOREYS OF T. EATON COMPANY'S STORE TORONTO

Sproatt and Rolph, Architects

Illustrating use of bronze in exterior treatment of steel columns, girders and curtain walls. Ultimate development of this type of construction will inevitably combine the use of backing materials that will give greater fire protection to the steel structural members, decrease the dead loads and reduce the amount of heat lost through the walls.

In the case of the Eaton Building the bronze work was executed by a Winnipeg firm and the aluminum of the Standard Oil Building was produced by the Aluminum Company of America whose large development in Quebec will enable Canadian Architects to study with greater patriotic and economic interest the possibilities of their sheet aluminum alloys for roof coverings, shingles, cast decorations, etc., where the use of light, weatherproof, rustless metals is advantageous.

TOP OF TOWER, STANDARD OIL BUILDING, NEW YORK

Carrere, Hastings, Shreve and Lamb, Architects

Aluminum alloys were used for the entire top of this tower above the level of the pedemented cornice. This shows the architectural possibilities of aluminum for exterior use in buildings.

Another interesting example of the possibilities in the use of such metals for external architectural treatment was shown to the writer by Mr. Hornbostel in his office in Pittsburg. He is now at work on a church steeple using a strong aluminum alloy, Duralumin, for the open work structural members, most of which in the execution of the design will remain exposed to the weather. The decorative parts will be of cast and sheet aluminum alloys applied to the Duralumin structure. The combined result will be much more interesting in design and construction than anything of like conception that could have been built for the same cost in stone, brick or terra-cotta in combination with structural steel.

Architects pioneering along these lines will not always be satisfied to use a steel frame work and hang a heavy exterior covering around it merely for appearance, unless such a covering meets the climatic needs of this country.

The absurdity of our present building by-laws in this regard is very evident when we analyse the structural composition of the exterior wall of a modern city building. Steel girders at each storey transmit the wall load horizontally on to the vertical columns. The curtain walls between columns don't do anything more than keep out the rain, wind and snow, keep in the heat of the building, and provide something attractive to look at. Very frequently they succeed only partially in providing complete weather protection to the occupants, their appearance is nothing to rhapsodize over and their failure to prevent heat loss from the inside has been shown in the tests referred to in my previous article.

When we add to these disabilities their excessive dead load that has to be added to the burdens borne by the structural columns, do we not begin to wonder if we have reached the ultimate in economic conservation of our resources?

What possible excuse is there for a by-law that demands a wall weighing from 70 to 150 pounds per cubic foot when finished, when a wall weighing less than 25 pounds per cubic foot could be built at less cost? Such a wall could be erected with light metal structural members to take the wind pressure, backed with materials that would reduce the heat conductivity per square foot by not less than 60 per cent., and for exterior covering bronze, copper and aluminum examples exist here and there as has been shown, so that unless we are to confess to absolute poverty in Architectural inventiveness we need not

assume that we are limited to stone, marble, brick, concrete, terra-cotta, etc., especially in the thicknesses now imposed upon us.

The reduction in weight alone in the external walls of a modern skyscraper (not including window areas) due to such curtain wall construction and the use of more effective light weight fireproofing for the columns and girders would in the majority of cases result in a dead load saving of approximately from 75 to 100 pounds per square foot.

It has been said that by-laws will have to be changed to make such a development possible. Well, what if by-laws have to be changed! Are they not subject to modification as they always have been since the first man rolled a boulder in front of his cave and forbade his children to substitute a smaller one?

In contrast with the changes that will develop new materials for the exterior finishing of our buildings, experiences in another direction will undoubtedly have the effect of retaining for us the use of wood structurally and as exterior finishing material, but robbed to a very great extent of its fire risk.

Fireproof paint for both exterior and interior use can be used on wood at a cost comparing very favourably with ordinary oil paint. That can be made to reduce the fire risk from the outside, and the danger from an internal fire can be rendered practically negligible by filling the spaces between the studs and rafters with fireproof insulating materials that would prevent the passage of air. The fuel saving due to such construction can be estimated from the tests of Prof. Greig and in Norway previously dealt with and the fire-resisting qualities were tested in a small hut 4 feet by 4 feet by 8 feet recently experimented with in connection with the proposed buildings for the Philadelphia Exhibition.

As this test was conducted to obtain information for the construction of temporary buildings to house exhibits no attempt was made to provide the interior with the protection that would have been afforded by cement or gypsum plaster. Consequently the construction was limited to 2" x 4" studding finished outside and inside with plaster board. The ceiling was composed of 2" x 4" joists with 1" x 2" furring, to the under side of which was applied plaster board. The floor was built of 2" x 4" joist, 7/8 inch wood sheeting covered with 4 inches of fireproof insulation. The spaces between the wall studs and the roof joists were also filled full with fireproof insulation. The structure was raised from the ground about one foot and four draft holes were left in the floor and four in the ceiling. Prof. Thwing supplied and operated Thermo-couples and temperature readings were taken on a pyrometer.

The fuel used consisted of about three-fourths of a cord of pine and hardwood.

The inside and outside temperatures recorded were as follows:

Time	Inside Temperature	Remarks
2:15	80°	Fire lighted.
2:30	1200°	No heat through walls.
2:45	1660°	Exterior wall about 100°
2:55	1800°	Exterior wall about 100°
3:00	1710°	More fuel applied.
3:09	1850°	
3:12	1920°	
3:14	1940°	
3:21	1940°	
3:25	1970°	Exterior wall about 100°
3:30	2000°	
3:34	1980°	Ext'or of wall about 120°
3:39	1600°	Ext'or of wall about 120°
3:43	1340°	Ext'or of wall about 120°
3:48	1200°	Ext'or of wall about 120°
3:57	1140°	Ext'or of wall about 120°
4:05	820°	
4:15	700°	

The results of this extremely severe test were that the unprotected paper covered plaster board was destroyed, but not before it had afforded protection to the studs up to about 1000° F. Notwithstanding the removal of the plaster board, the insulation protected the studs so that they were only charred back from one inch to one inch and one half. The roof rafters, excepting at points where furring strips had been in contact, were untouched with the heat showing that the one inch of insulation had prevented even charring. With the exception of one spot, no fire had got through the walls to the exterior of the building, and throughout the test the temperature as noted never rose above 120°, according to observations made by Prof. Thwing.

Making allowance for the severity of the test, it would appear safe to conclude that houses or other structures, built along similar lines, may for all practical purposes be considered at least equal to "slow burning construction" if not actually "fireproofed". Architecturally this means that we may yet for some time be able to retain wood construction to give the interest and variety so necessary in our residential areas, without the terrible fire menace such construction now constitutes under the present methods of utilization.

While dealing with this question of fire prevention, do we as Architects ever realize the relationship between our appalling national fire losses and our burden of taxation?

Would there be more work all round in building construction if we did not burn down each year one dollar's worth of property for every four dollars expended on new construction?

The gradual displacement of vegetable products by mineral products in construction will certainly help to reduce these preventable losses, but even the most zealous fire-chief will admit that we have many buildings in our midst that are extremely dangerous and yet will not be replaced by new fireproof structures in our day and generation. In many cases it is not even desirable that they should be entirely destroyed, and yet many opportunities present themselves to us as Architects to reduce the risk to the community to some extent at least by providing firestops vertically and horizontally when we do any remodelling. Here again the Philadelphia experiment provides us with data that will repay study by the members of our profession.

FLAT ROOFS VERSUS SLOPING

If architecture in Canada was influenced by climatic conditions as it should be, there would be evolved a much more distinctly national type of building than anything we have to-day. Possibly it

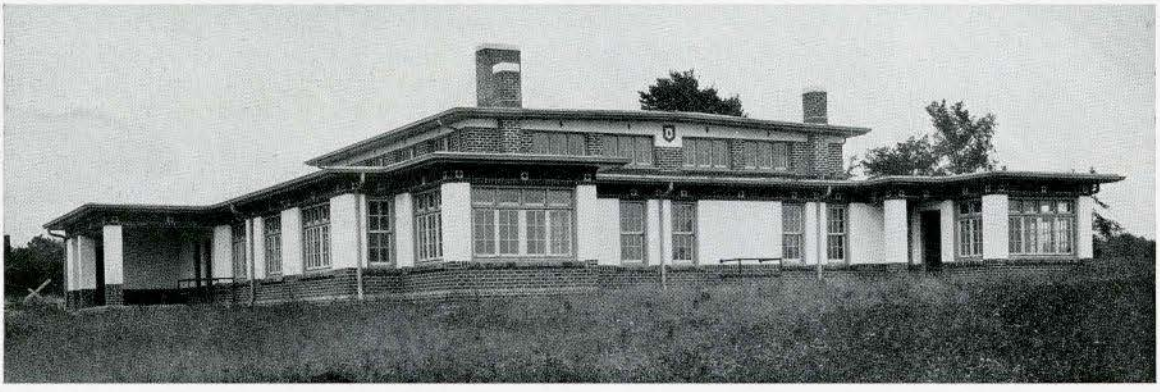
is due to the fact that the majority of Architects live in large cities, where snow is looked upon as something that has to be shovelled and carted off into the sewers at great expense, that so little attention architecturally has been given to the advantages of snow.

Just as our modern civilization has polluted our rivers and lakes to the extent that we now make ice artificially for food preservation, so in imagination we can picture giant aeroplanes flying over our metropolitan areas, in the not too distant future, delivering artificially manufactured snow, the world's greatest insulator, never appreciated until it was manufactured in a factory and marketed with all the selling energy and advertising skill that nowadays saves the public from thinking.

Of course if our tastes in food are for grape fruit from Florida and hot house grown tomatoes in Winter, it is natural that we should refuse to be guided by the people to the north of us, who still make use of snow as nature provides it to make thier igloos warm enough to live in. This point needs emphasis so much that I will again describe a test given in a paper contributed to the *Engineering Institute Journal.*

"During one of this winter's zero spells a ball of loose snow less than a foot in diameter was placed on the handrail surrounding a flat roof. On top of the snow we put a piece of pine board about 6 inches square and about one inch thick. In front of the board and with its lower end stuck in the snow we placed a small icicle about 1½ inches in diameter and about 9 inches long. The sun's rays reflected by one of Dr. Harvie's "Luxostats", or combined mirrors, set fire to the board in about fifteen seconds, then gradually thawed the icicle, but had scarcely any effect on the snow during the period of fifteen minutes or so we had the rays focussed on it."

"What a commentary on our Canadian Architecture! Provided by an all-wise Providence with a natural insulator against the severity of our climate, we do everything we can to make certain that we shall take no advantage of the assistance given. First we slope our roofs so that snow won't stay on them; and if by any chance we bungle things so that a little snow does remain around the expensive gables, dormers, turrets and valleys, we make absolutely certain of its removal by burning some equally expensive coal under it and interpose as little as possible in the way so that the coal will be 100 per cent. effective."



ONE OF THE DORMITORY BUILDINGS, BOYS TRAINING SCHOOL, BOWMANVILLE

James Govan, Architect

Planned to admit the maximum of sunlight in winter and yet be cool in summer, with flat roofs for low maintenance cost and to take advantage of insulating value of snow; 5 inches of insulation used in roof construction and 2½ inches in walls to meet climatic conditions as outlined in this article.

The cost of a flat roof strong enough to take any snow load that ever fell in Canada is less per unit of space covered than for any other equally weather-tight roof that will shed snow.

A great deal of our Canadian domestic architecture is modelled on English work and the beautiful, expansive sheltering roofs of the cottages and farm houses of Kent and Sussex have undoubtedly had a strong influence on Canadian work. An examination of that old work however shows that the effect of restfulness and dignity was largely due to the entire lack of dormers, gables or other excrescences. The roof spread over the whole area of the cottage, a cover and nothing else and very rarely was there any living use made of the large spaces from the ridge right down to the sidewall levels.

Gradually economic needs compelled the utilization of these spaces, and so the dormer and gable were added, with great loss to the architectural appearance and increased difficulty in keeping the roofs weather-tight.

Here in Canada the experience has been somewhat similar. Our clients find that they can no longer pay for space inside an expensively constructed, cut-up roof, if that space is to serve no more useful purpose than as storage space for old junk. Now these attics are being used to house human beings, whose protection from the heat of summer and the winter cold is seldom more than some thin shingles, open jointed boarding, a thin lath and plaster ceiling, and, last but not least in the eyes of so many, the so-called dead air space between the rafters.

This demand for the full use of such roof spaces will turn the attention more than ever to the advantages of the flat roof. Already in our cities and suburbs the flat roof is extensively used, but it is better suited to the needs of many different types of buildings for which Architects and owners now seem to think a sloping roof the only possible covering.

There is a prevalent idea that a flat roof must of necessity be a great heat waster. The very oppo-

site is true. Because of its snow retaining advantage, the absence of wind pressure and the greater ease with which insulation can be applied, the flat roof is lower in maintenance costs for heating as well as lower in annual repair bills.

So far as Architectural treatment goes surely the examples in Italy, New Mexico and elsewhere should give us inspiration enough to evolve something that will at least be comparable with the oversized dormer on the "bungalow" of to-day.

Other possibilities in the treatment of our buildings with flat roofs include the better lighting of the interior in the storey immediately under the roof. With the further development of glass that will permit the passage of the ultra-violet rays the future use of top lighting is indicated by a study of such a paper as the one printed in "Cement Mill and Quarry" September 20th, 1925. "Mechanical and other Properties of Fused Silica" by Elihu Thomson, Ph.D., Sc.D., LL.D. (read at a meeting of the Franklin Institute, May 1925) from which I take the liberty of quoting:

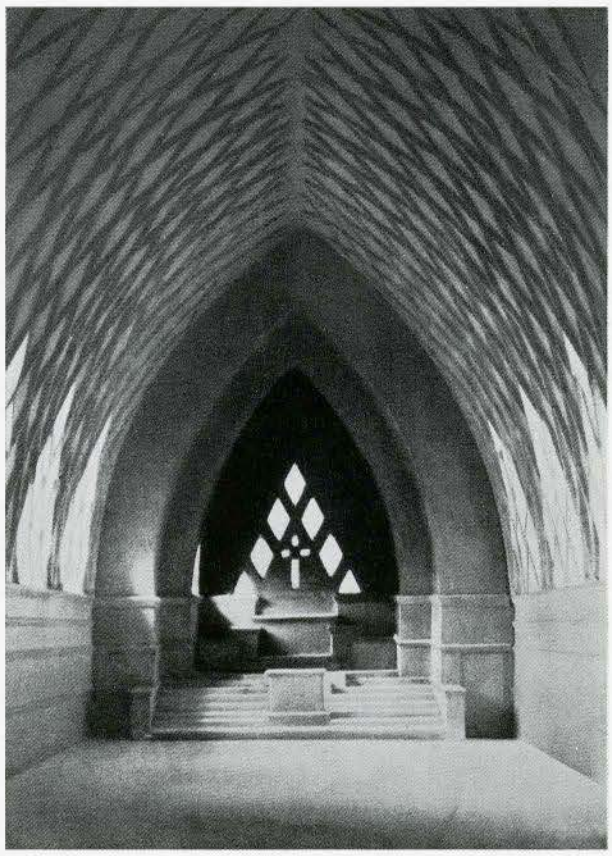
"It is probable that thicknesses of several inches of most media will not allow much of these higher rays to pass. Fused silica transmits them. Window glass is practically opaque to the higher rays. Considerable attention has recently been given to these facts. In sunshine, in open air, the invisible rays may reach the skin and produce such stimulation that the assimilation of calcium and its combination with phosphorous and oxygen to form bone goes on normally. A child deprived of this open air exposure may suffer from ricketts, a disease characterized among other things by failure to form hard, bony tissues. In animals deprived of the open air light of the sun the same tendency is noticed.

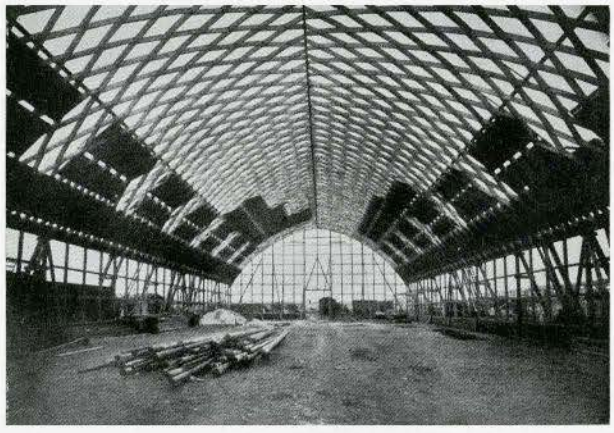
Our window glass cuts off the beneficial rays. A glazed solarium fails in that respect. In our winters when shelter is too often taken behind glass to avoid exposure to cold and when heavy clothing and short days together conspire to prevent proper solarization even in the open, it is noticed that rachitic symptoms are greatly increased. In cities the sin against humanity of converting the streets and ways into sunless canyons by the erection of tall buildings is another form of smothering out the health-giving radiations."

Those of us who attend town planning meetings and then sit helpless in a street car or limousine while the traffic officer tries to disentangle the street traffic may get some inspiration when we read that at last a helicopter has been built that can be brought to rest on its intended landing stage without having to be pulled down with a rope. With this in mind and our last fine for exceeding the parking time limit on the street, are we prepared to advise our next client that, if he must build to last more than 10 years, he might consider the planning and construction of a roof that would contribute something to the solution of these problems?

If we will have none of these flat uninteresting roof lines perhaps we may give more than a passing glance at the new type of roof construction using curved lines as shown in the illustrations reproduced herewith. The principal shapes are the gothic arch (hinged roof), the segmental arch, the broach and the dome.

This construction has particular advantages for all kinds of industrial and agricultural buildings,





NEW TYPE OF GOTHIC ARCHED ROOF

This can be built in wood or steel in any curved shape in spans up to 125 feet, without trusses, purlins or tie rods. The entire absence of columns, trusses, tie rods, etc., indicate its suitability for structures that require unobstructed vision and the free utilization of the space covered by the roof as shown in these two illustrations.

arenas, airship sheds, churches, theatres, exhibition halls, railway stations, light foot bridges and similar structures where the free utilization of the space roofed in is desired.

With the possibilities I have tried to suggest and the thousands of others our every day rush brings to our attention, are Architects in Canada less willing than others to develop for themselves architectural conceptions fathered by resource and mothered by need?

"It is the religion of the optimist who believes that the best is yet to be, and that growth, Creative Evolution, is the law of our being. But to nourish that growth the vital flame must not be quenched by custom and convention. It must be eternally renewed, and the lamp must be unceasingly cleansed of all the accretions of time."—Bernard Shaw.

The Early Architecture of Quebec

By J. RAWSON GARDINER, R.A.I.C.,

AS the years slip past we in Canada are beginning to acquire legacies from byegone ages which it will be well for us to appreciate and preserve. In the United States there are the fine old brick colonial mansions of aristocratic Virginia and Maryland, the puritan wooden homesteads of New

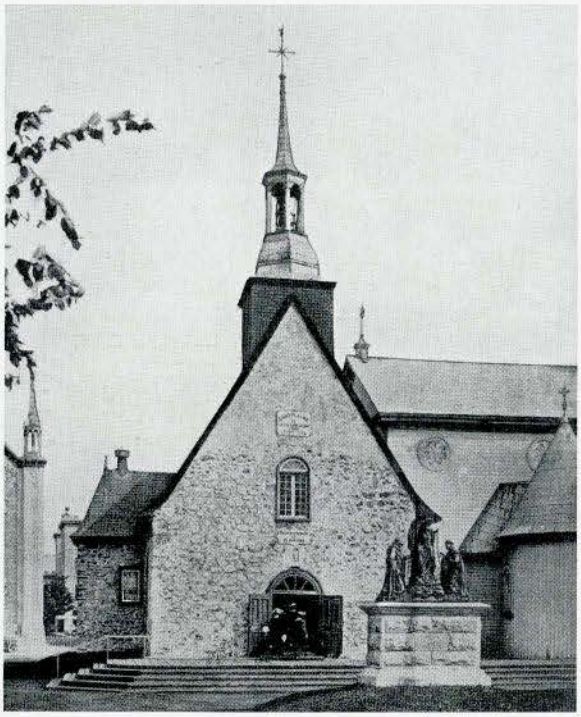


Fig. 1. CAP DE LA MADELEINE, NEAR THREE RIVERS

England and the Dutch farms and manor houses of New York, but the Province of Quebec, or New France as she was called prior to 1763, has in her simple, rugged old stone farmhouses an equally valuable legacy, as they are the natural expression of the first builders in Canada.

The simple unassuming dignity of these old stone buildings erected by the Quebec "habitant" during the 17th, 18th and the first half of the 19th century is a quality which the architect of to-day might well emulate. Few persons probably appreciate the work of our hardy pioneers when building materials had to be collected from the fields and construction was carried on, with Indians in the distant woods awaiting their opportunity.

Fortunately the Federal and Provincial Governments, as well as the architectural departments of the Universities, are beginning to realize their responsibilities, not only in the preservation of those buildings which are worthy but in holding measured drawings, photographs and other data for the future student. These old buildings recall the life and customs of the French regime and are historical documents of no mean value.

1. THE CHURCHES.

The churches of New France were usually as simple and unassuming as the farmhouses and though the type does not vary very much the workmanship was honest and the effect obtained always pleasing. Unfortunately very few of the early churches remain, as either by fire or through ruthless demolition not twelve of the French regime churches are still in existence. Even among these few, additions and alterations have at times almost obliterated the original design, so that if photographs or prints had not been preserved the old traditional French Canadian Church would be little more than a memory.

The population, until 1763, being entrely of French origin and of the Roman Catholic faith, there was no diversity of either religion or race to influence the design of their buildings, as was oftentimes to be seen in the English colonies then to the south, and which later left its mark on the ecclesiastical architecture of this province. The source of the old provincial French architecture is undoubtedly the north of France, but the style was influenced by the masons and carpenters working largely from

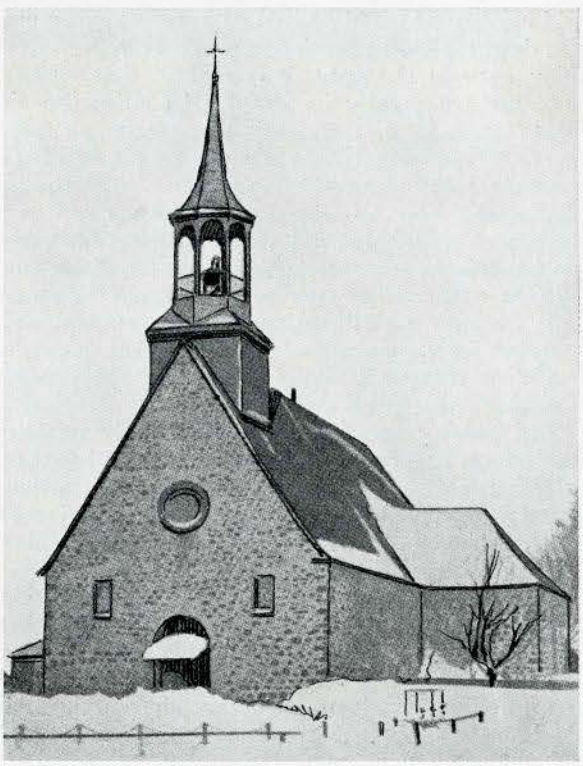


Fig. 2. CHURCH, LA CHENAYE, NEAR MONTREAL. C. 1750.

memory under the control of the priests, and by limitations in materials; thus gradually a local type was evolved which was very characteristic and suitable to the needs of these early settlers.

Fig. 3. ST. ANNE DE BEAUPRE.
Erected 1676. Demolished 1876.

The first churches were usually constructed of wood, but Parkman states that, as early at 1683, there were seven stone churches in the colony. As fire soon demolished the wooden structures they were generally replaced by stone churches of a simple and unassuming character very much in keeping with the life of the habitant. The roof was high pitched

Fig. 4 CHURCH ST. FAMILLE, ISLE D'ORLEANS. C. 1745.

and spanned from wall to wall with an elliptical barrel vault; a graceful steeple or belfry astride the front gable; the walls of field stone set in a heavy bed of mortar, three feet thick and without a buttress; an apsidal chancel with sacristy in rear; a gallery across the entrance end; and sometimes transepts, at other times a chapel instead of transepts.

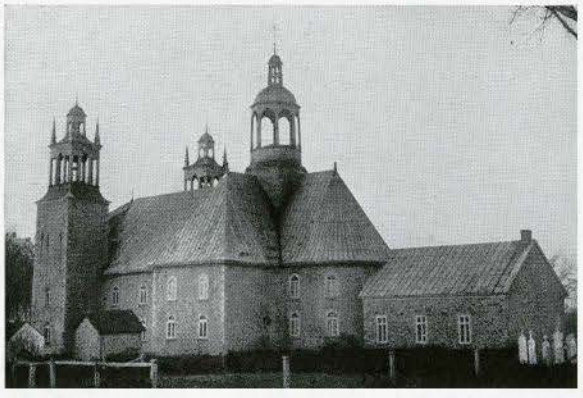


Fig. 5. CHURCH ST. DENIS, ON THE RICHELIEU. C. 1793.

This early type of church is to be seen in the picturesque little shrine at Cap-de-la-Madeleine, near Three Rivers, which externally has been preserved in its original form. (Fig. 1). This church was erected in 1715 and small churches similar to this but varying in detail were to be found in each of the 116 parishes into which the colony was divided in 1763. Picture to yourself the quiet rural beauty of these old field stone chimney-gabled farm houses

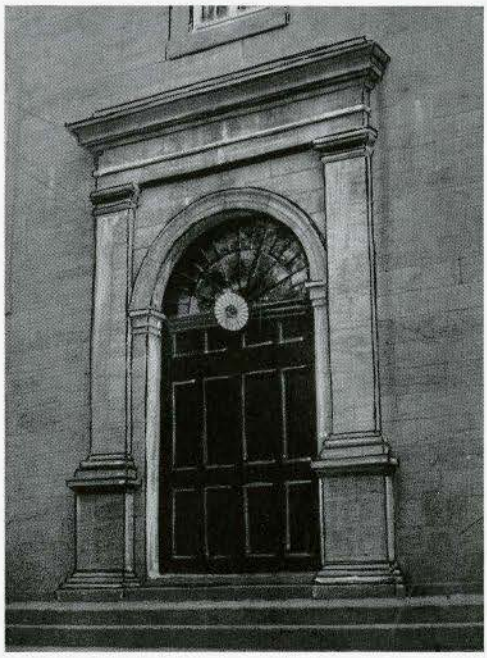


Fig. 6. MAIN DOORWAY, VAUDREUIL CHURCH.

nestling under the wing of the simple little parish church, with its tin covered steeple glistening in the sun; the outward and visible sign of the faith which holds the French Canadians as a unit.

From photographs and prints we know that this is the traditional type of French regime church as

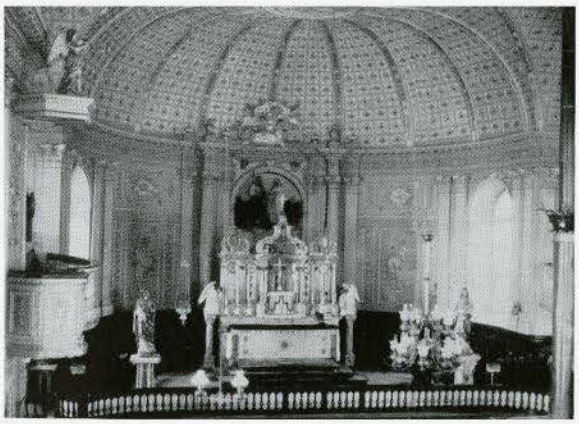


Fig. 4a. CHURCH ST. FAMILLE, ISLE D'ORLEANS. C. 1745.

the following buildings bear witness; Lachine, Pointe Claire, St. Anne de Bellevue, Lachenaie (Fig. 2), Varennes, Three Rivers, and St. Anne de Beaupre (Fig. 3), all of which have been demolished, and by the existing church at Pointe-aux-Trembles, near Montreal (1705). The greatest variation from this type is the church at St. Famille on the Island

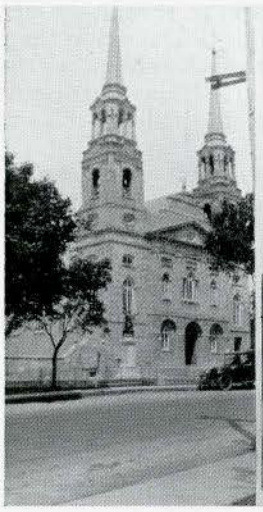
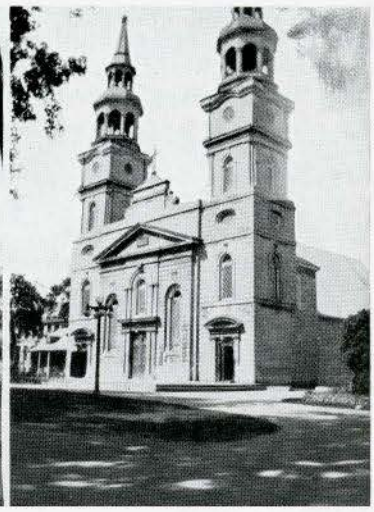


Fig. 9. ST. GENEVIEVE
1845

Fig. 7. VAUDREUIL.
C. 1787.

BOUCHERVILLE, 1801.
On S. Shore of St. Lawrence.



SAULT-AU-RECOLLET.

of Orleans which is said to have been erected in 1745 (Fig. 4 and 4A). This church has three steeples or belfries, two on the towers and the third astride the front gable, which is quite unusual. A somewhat similar design was to be seen at St. Antoine on the Richelieu, erected 1779 but destroyed by fire in 1913.

After the Treaty of Paris the country was in more or less an unsettled condition for the next twenty years, due partly to the change in government and partly to the Revolution to the south, but as the British were found to be friendly and willing to allow those of the Roman Catholic faith perfect freedom of their religion, as far as the laws of Great Britain would permit, several Catholic churches were erected in the latter part of the 18th century. These churches at first followed closely to the original lines, the builder merely increasing the size of the sacred edifice to meet the requirements of a larger congregation. This was done commonly by adding side aisles thus creating a change in the design which was probably the origin of the two towers replacing the central steeple. A smaller door was added on either side of the large central door, the front usually became more ornate and cut stone replaced the rubble work of the earlier period. Of the latter part of the 18th century there are or were excellent examples at St. Joachim (1779); Bonsecours Church, Montreal (1773) until altered in 1880; Berthier (1787); Vaudreuil (1787), and St. Denis on the Richelieu (1793). The churches at Berthier and St. Denis (Fig. 5), represent the two tower type

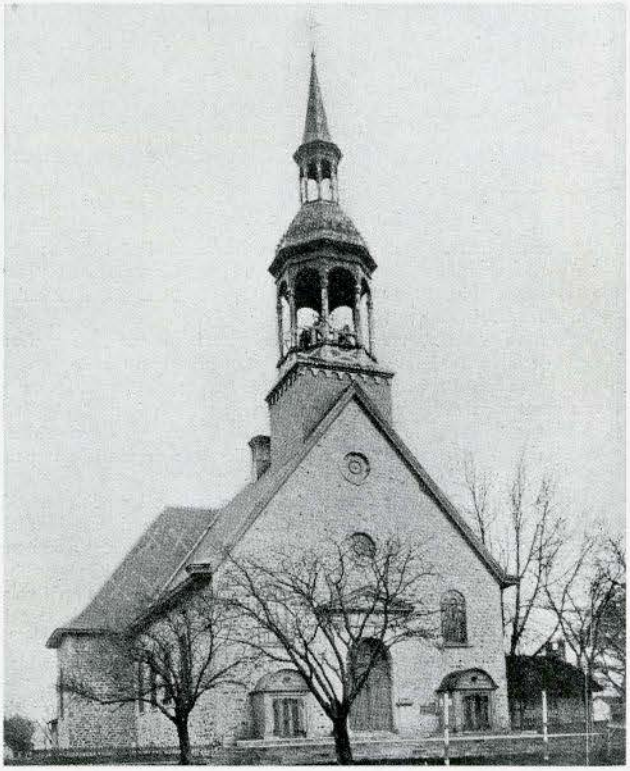


Fig. 8. BOUCHERVILLE.

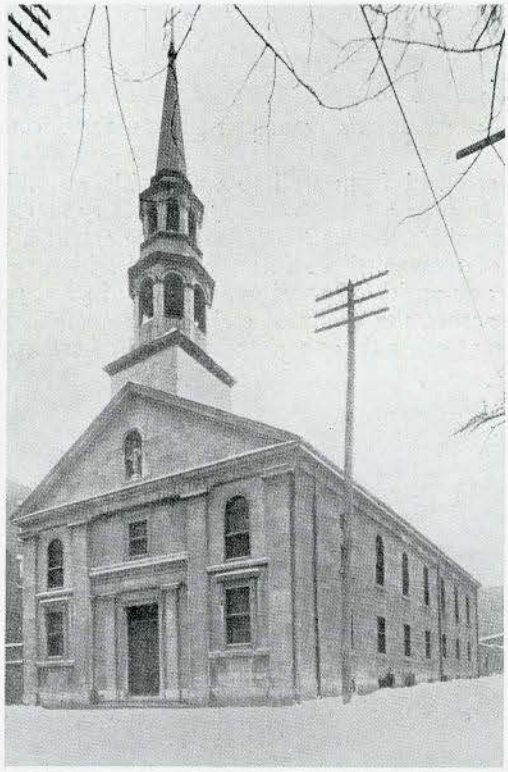


Fig. 11. NOTRE-DAME DES ANGES, MONTREAL.
Bought from Protestants in 1867.

and Vaudreuil (Fig. 7) the central steeple, an excellent design by the Royal Engineer de Lothbinière; but it has always been found a difficult task to fit the classical front on the high gothic roof behind.

At the close of the 18th century an art guild or architectural school was formed at St. Vincent de Paul, a village near Montreal, by Louis Quevillon and his three associates. The influence of the work done by these enthusiasts and their pupils was felt in Catholic church architecture for many years and the interior detail became a somewhat florid debased renaissance in place of the austere simple beauty of the older churches as seen at Lachenaie (Fig. 11. See The JOURNAL, July-August, 1925, page 145).

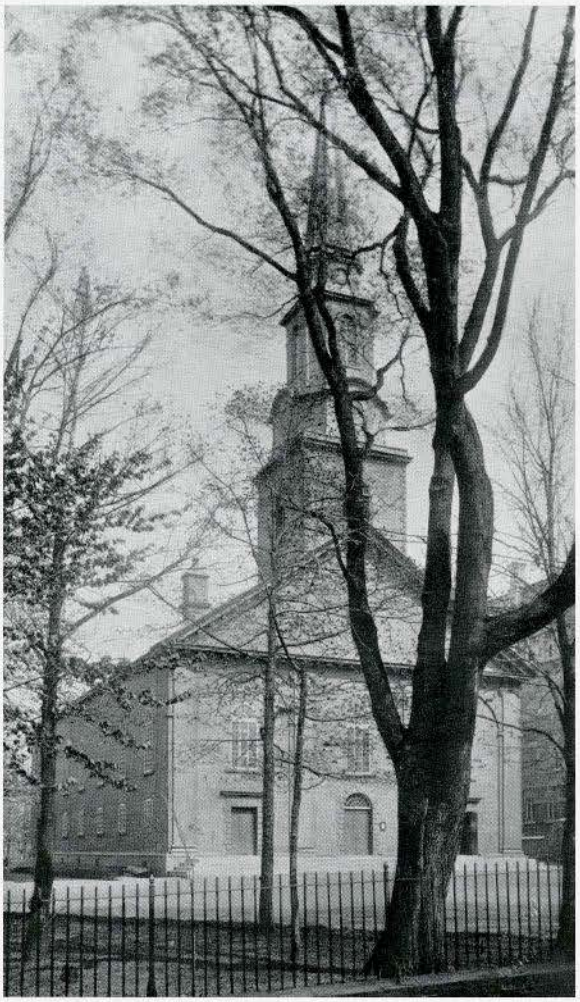


Fig. 10. PROTESTANT CHURCH OF THE HOLY TRINITY, QUEBEC. C. 1800.

During the first half of the 19th century many excellent churches were erected based on the traditional type, such as St. Roche-de-L'Achigan (1803), St. Anne-des-Plaines (1803), and at Boucherville (Fig 8), but the diversity in both religion and race were beginning to show in its effect upon the design of the churches in this period for on the one side is to be found the gothic influence as seen in Notre Dame, Montreal (1823) in the attempt at gothic tracery at St. Sulpice (1830), or at St. Patrick's, Montreal (1845), while the classic tendency is to be found at L'Assomption, in the new front to the Basilica at Quebec by de Léry in 1847, the charming church at St. Genevieve (Fig. 9) by Baillargé, a pupil of the Quevillon school (1845), or the new front to the church at Sault-au-Recollet by Ostell. The change from the little shrine at Cap-de-la-Madeleine to the church at St. Genevieve shows that we have travelled a long road but the evolution in design can easily be followed step by step. Thus the old traditional type has been either lost or so modified as to make it difficult to recognise its source.

For some time after the conquest the only Protestant clergy in the province were the army and navy chaplains, but in 1792 a small stone Presbyterian church was erected in Montreal near the present Court House and in 1800 the Cathedral of the Holy Trinity in Quebec was started (Fig. 10) while the church on Lagauchetiere Street, Montreal, shows the same classic tendency in design (Fig. 11).

From the above description it will be seen that the traditional little stone parish church of the French Regime will have to be studied almost entirely from drawings or photographs, as there are only a few left to tell their tale. Let us protect the few remaining examples left to us with loving care and preserve the records of those which have been destroyed. As it is on the old stone farmhouses therefore that we have to rely as our chief architectural legacy of this period it may be well for us to treat them with greater respect before it is too late, otherwise they will soon share the same fate as the delightful little churches.

2. FARMHOUSES.

The rugged old stone buildings erected by the Quebec habitants during the 17th, 18th and the first half of the 19th century may well be an inspiration to those interested in the early architecture of Canada as they were the first permanent structures erected in this country. Besides the churches and farmhouses there are Convents and Schools, Windmills and Forts, all of which formed part of the life of the pioneers in this northern land and if one will group these several units into one harmonious whole, the beauty and unassuming dignity of these early buildings will doubtless be better appreciated.

Compare the austere background of the chancel and the sumptuousness of the altar and crucifix at Lachenaie with some of our modern churches or compare the rugged simplicity of the old stone farmhouse near Montreal (Fig. 12), picturing the strength and purpose of these hardy pioneers, with some of the shacks to be seen on our highways and then hesitate to pull down until we feel certain that the new is better than the old.

The old farmhouses, like the churches, did not vary much in type. They were usually one story besides the roof, but occasionally two stories and roof are found as in the St. Gabriel farm. The earliest examples had high pitched roofs with no overhang or gallery, but as the houses grew wider or a gallery or overhang was considered necessary as protection from the hot summer sun, the roof usually became flatter, a bell-cast was formed as an overhang (Fig. 13) or when this projection was too great a gallery post became essential as support to the roof. The gallery is not wide but varies considerably in its height from the ground, in some cases only sufficient to be level with the snow in winter (about 18 inches) while others are four or even five feet from the ground in order to give a high and dry cellar for the storage of the necessary

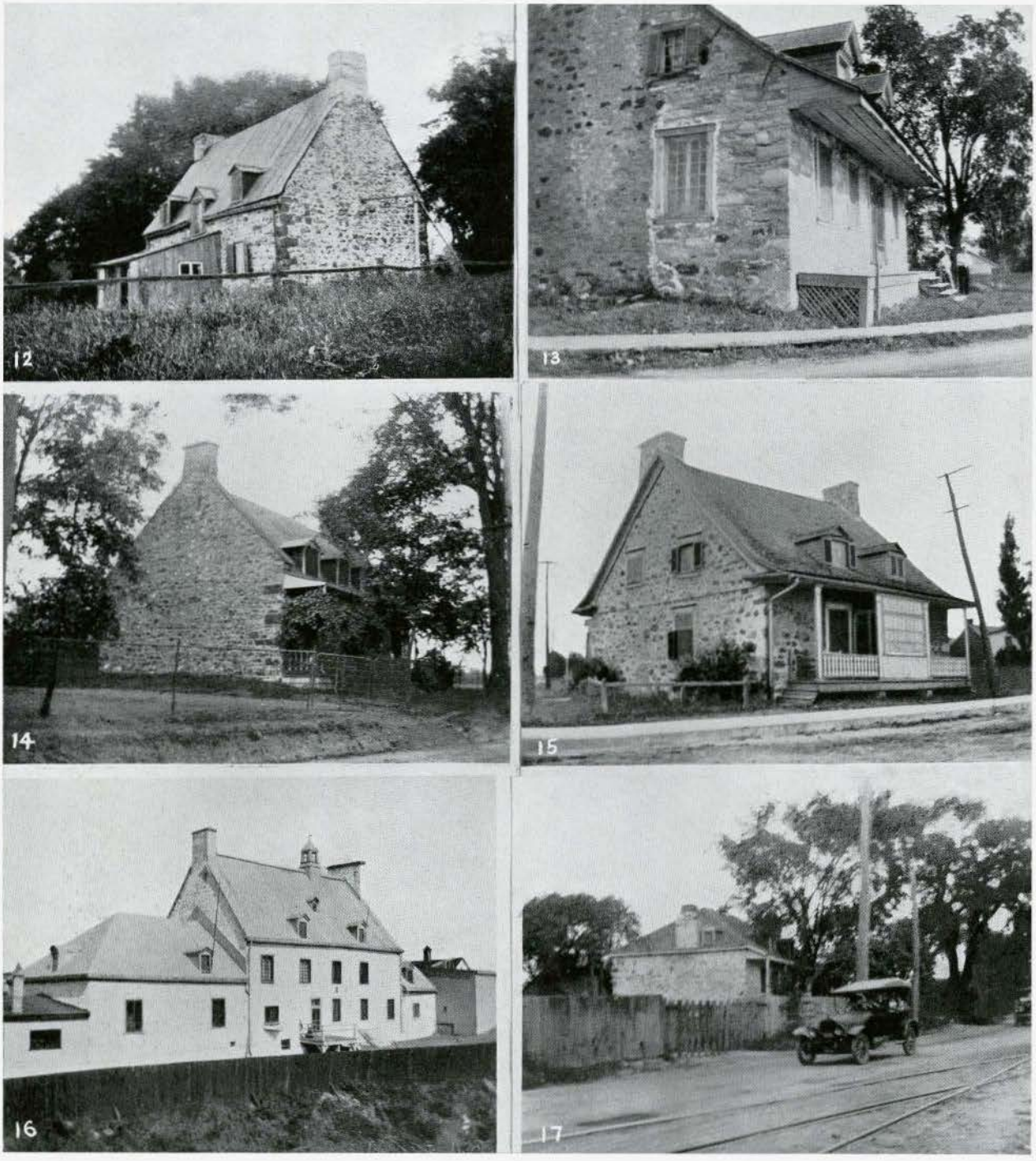


Fig. 12. Old Stone House on Lower Lachine Road, west of Verdun Asylum, overlooking the Rapids from these windows, showing high pitched roof without bell cast or gallery, dormers but no gable windows.

Fig. 13. Old House on Lachine Road, showing overhang of roof with bell cast.

Fig. 14. Old Stone House on grounds of Verdun Asylum, on north side of Lower Lachine Road, showing parapetted gable without windows.

Fig. 15. Old House, St. Lamberte, on Riverside Road to Longueil, showing roof over gable walls and windows in gable and dormers.

Fig. 16. Farm House, facing Nun's Island, front facing St. Lawrence River.

Fig. 17. Old Farm House, Lower Lachine Road, east of Verdun Asylum, showing hipped roof.

winter supplies. The roof is usually one of three types; a parapetted gable roof with large chimney in each gable (Fig. 14) or in place of the parapet the roof continues over the gable walls (Fig. 15) or a hipped roof with stone chimneys at each end (Fig. 17). The upper story is sometimes lighted by dormers only, at other times by windows in the gable walls only but the most common type has both gable windows and dormers, as giving cross ventilation so necessary during the hot summer months. The windows are invariably casements, opening inwards and divided into small panes by wood muntins.

Excellent examples of these interesting old farm houses are fortunately still to be seen and the several

variations in type can usually be found on a motor trip along the banks of the rivers in the older sections. The St. Gabriel farmhouse is one of the oldest and most interesting of these stone buildings which has been preserved in its original condition. It is said to have been erected in 1668 and additions made in 1698. The house overlooks the St. Lawrence, facing Nun's Island, as it is commonly called, as both farm and island are owned by the Sisters of the Congregation of Notre Dame which was founded by Marguerite Bourgeoys. On passing through this ven-

Fig. 18. OLD CONVENT, LONGUEUIL.

erable old structure (Fig. 16) escorted by a nun one is reminded of the days of Maisonneuve and La Salle, when life here was a precarious existence, with Indians lurking behind the trees. Here is the original chapel on the upper floor, a large bedroom with the beds and furnishings as in days of old, the roof and stairs constructed with axe hewn timbers framed and pegged without a nail, for nails were scarce in those days, and interesting detail in moulding and cunningly wrought ironwork. Amidst such surroundings it is not difficult to feel the atmosphere of two centuries ago that on returning to the street motor and street car appear almost incongruous.

3. CONVENTS AND SCHOOLS.

Of the larger buildings used for institutional purposes such as convents, colleges or schools there are numerous splendid examples, made of field stone during the 17th and 18th centuries and usually two or three stories in height besides the roof. Such buildings as the old Seminary buildings in Quebec (See The JOURNAL, July-August, 1925, page 142) erected in 1663, the Sulpician Seminary in Montreal built in 1710, with its interesting old gateway, Ionic entrance doorway, old field stone walls and the quaint clock and bells over the entrance make this one of the best examples of the early period in Montreal. Unfortunately the east wing has been demolished, thus the effect of the original front cobbled court has been lost. There were also in Montreal the Grey Nunnery on McGill Street, a three story and roof building; the nunnery of the Congregation of Notre Dame demolished in order to extend St. Lawrence Street to the River front. Besides these are the convents on Nun's Island, at Three Rivers (see The JOURNAL, January-February, 1925, page 27), Longueuil (Fig. 18), Sault au Recollet, L'Assomption (see The JOURNAL, January-February, 1925, page 29), all of which bear witness to the solidity and charm of these old convents.

During the first half of the 19th century some of those erected followed the type of the earlier convents, but there are many excellent buildings on Georgian or more classic lines, as may be seen in the school on Vitre Street, Montreal; the large convent on Mount St. Mary on Guy Street, Montreal, with its imposing doric portico; and the old Mariners Hospital in Quebec (1815); to show that although the old type has changed in many cases, there was very good work produced during this period.

4. WINDMILLS AND FORTS.

As the seigneurs during the French regime were supposed to erect a mill for grinding the grain of the farmers these quaint old windmills were to be seen on several of the seigneurial lands. They formed a most picturesque feature in the landscape and it is to be regretted that so many have disappeared and that others are allowed to fall into ruins. The seigneur was given one-fourteenth as his share for grinding the grain. The old mills at Pointe-aux-Trembles, near Montreal (1674), (Fig. 19), at Iberville and at Vaudreuil are good examples of such mills which were oftentimes used for forts as well as grist purposes. The mill at Vercheres is still grinding grain as in the 18th century.

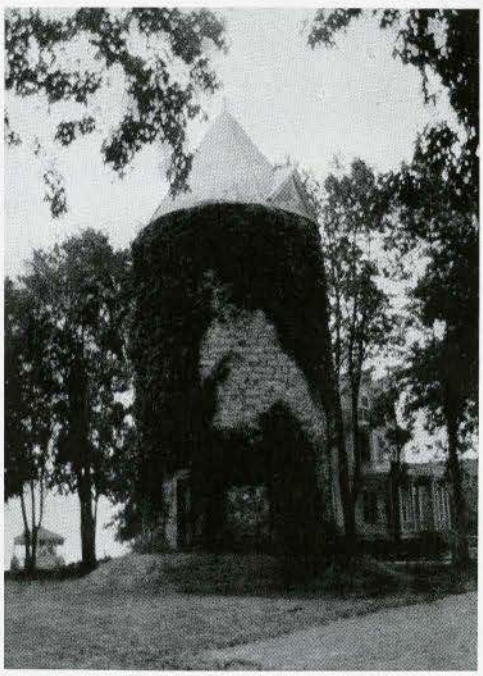


Fig. 19. WINDMILL, POINTE AUX TREMBLES.

For the defence of New France there were several forts erected at vantage points on the banks of the rivers, but many of these have been destroyed. The two round towers on the property of the Montreal College in Montreal are the two southern towers to the wall surrounding the Mountain fort. The old citadel at Quebec and the fort at Chambly have interesting architectural detail in door or gateway and the grouping of the buildings around the parade ground at Fort Lenox at Isle-au-Noir on the Richelieu, with its old moat and drawbridge, make a very pleasing picture.

The object of this article is merely to give a historical sketch of the early work in the Province of Quebec; to show that the characteristic old field stone buildings ran true to type until the end of the 18th century; that during the first half of the 19th century the original style held good for some years but that diversity of type began to appear as many a splendid Georgian or Greek Revival building proves; but that after 1850 the work began to deteriorate until one sometimes wonders if any artistic sense remained.

Professors Traquair and Carless have already drawn attention to the charm of these delightful old stone buildings and how important it is to preserve them because of their historical and architectural value. If that is not sufficient reason then the financial aspect should appeal to this commercial age. All probably realize that the interest taken in the old buildings of Quebec bring thousands of tourists and therefore thousands of dollars to this province, but we would rather think that these fine old structures were preserved because of their charm and beauty of line and because "the nation that preserves the links that bind it to the past will not lightly lose respect for its highest ideals."

Reports on Activities of Provincial Associations

EDITOR'S NOTE

Secretaries of Provincial Associations and Ontario Chapters will please be advised that all reports of their activities to be inserted in the next issue of the R.A.I.C. Journal must be mailed to the office of publication, 160 Richmond St. West, Toronto, not later than December 30th, 1925.

The British Columbia Association of Architects

Secretary
Fred L. Townley, 325 Homer Street, Vancouver

THE Forty-First Council Meeting was held at 325 Homer Street, Vancouver, B.C., on Thursday, September 24th, at 8 p.m.

The President, Mr. G. L. T. Sharp, was in the chair and Councillors J. C. M. Keith, S. M. Eveleigh, and James A. Benzie were present. Also present were Mr. Fred L. Townley, Honorary Secretary, and Mr. Andrew Y. Mercer, Honorary Treasurer.

Various business concerning local matters were discussed, and one Application for Registration moved upon.

Ontario Association of Architects

Secretary
I. Markus, 223 Howard Park Ave.

SINCE the last report of our activities appeared in the JOURNAL the Toronto Chapter have held Executive Meetings on September 21st, October 7th, October 26th and November 11th. A Special General Meeting and Dinner was also held on Monday, October 26th, at the Arts and Letters Club at which forty members were present. Mr. F. C. Lee, Chairman of the Chapter, presided. The speaker of the evening was Mr. E. F. Stevens, Architect, of Boston, who gave an illustrated address on the development of hospitals from the earliest examples commencing with the first hospital erected in England eight hundred years ago. The speaker mentioned particularly some of the Canadian hospitals recently erected and showed by the aid of slides the tendency towards the more compact plan. Mr. James Govan, late Inspector of Hospitals for the Ontario Government, also spoke, outlining some of the features of hospital construction.

The Executive Committee took up the question of articles appearing in the weekly newspaper, Saturday Night, pertaining to architecture and it was decided to communicate with the Editor and offer him the co-operation of our Chapter, so that the articles which he may publish from time to time will meet with the approval of the architects. The Executive also dealt with some applications for membership in the Ontario Association of Architects and a Special Committee was appointed to deal with these applications.

At the executive meeting held on November 11th a representative of the Quantity Surveyors Limited addressed the members on the question of Quantity Survey service. The speaker expressed the wish of his organization to secure the co-operation of the architects in issuing quantities to contractors figuring on their work. After considerable discussion by the members it was felt that the most feasible plan would be to get the Contractors' Association to take up the matter of Quantity Surveying and that the architects would then be willing to co-operate with them. It was also suggested that as the question was more than a local problem that the Quantity Surveyors should approach the Ontario Association of Architects with a view to getting their support.

The Executive also decided to take up seriously the question of awarding suitable recognition to members of the Chapter for the best designs for shop fronts, residences, office buildings, apartment houses, etc., executed during the past year. It was felt that the photographs submitted might form the basis of a Special Exhibition to be held at some suitable place to be open to the general public. A Special Committee consisting of Messrs. F. C. Lee, A. H. Gregg, R. W. Catto, MacKenzie Waters and I. Markus was appointed with Mr. Gregg as the convenor to bring in a more detailed report at the next meeting.

Competitions

LEAGUE OF NATIONS.

COMPETITION FOR THE SELECTION OF A PLAN WITH A VIEW TO THE CONSTRUCTION OF A CONFERENCE HALL FOR THE LEAGUE OF NATIONS AT GENEVA.

The League of Nations will shortly hold a competition for the selection of a plan with a view to the construction of a Conference Hall at Geneva. The competition will be open to architects who are nationals of States Members of the League of Nations.

An International Jury consisting of well-known architects will examine the plans submitted and decide their order of merit.

A sum of 100,000 Swiss francs will be placed at the disposal of the Jury to be divided among the architects submitting the best plans.

A programme of the competition when ready will be despatched from Geneva, and Governments and competitors will receive their copies at the same time. Copies for distant countries will be despatched first.

The British Government will receive a certain number of free copies. These will be deposited at the Royal Institute of British Architects, and application should be made to the Secretary, R.I.B.A., 9, Conduit Street, W.1, by intending competitors.

Single copies can be procured direct from The Secretary-General of the League of Nations at Geneva, for the sum of 20 Swiss francs, payable in advance, but will not be forwarded until after the Government copies have been despatched.

THE JACOBSON ANNUAL $1,000.00 PRIZE COMPETITION FOR 1926

Closes April 1st, 1926. Subject—Design for an Architectural Club.

Open to architects, draftsmen, students and others. For conditions apply Jacobson & Co., New York.

Prizes to be awarded in accordance with the conditions are offered by Jacobson & Company, 1st prize, $500; 2nd prize, $300; 3rd prize, $200.

WAR MEMORIAL—REGINA, SASK.

The Council of the City of Regina, Saskatchewan, propose to erect in Victoria Park, a Cenotaph as a Monument to Regina Citizens who fell in the Great War. Designs are invited in the form of drawings, with or without models. The type of Memorial commonly known as a Cenotaph is preferred, but other types of designs will be given due consideration. The drawings or designs, with or without models, must be delivered to the City Clerk not later than noon on Tuesday the 1st day of February, 1926, by mail or by express.

Copies of the conditions, etc., of this Competition may be obtained upon application to the City Clerk, City Hall, Regina, Sask., and questions regarding the Competition may be addressed to him up to, but not later than January 1st, 1926, after which no questions will be answered.

THE NEW INSTITUTE FOR THE BLIND, BUENOS AIRES, ARGENTINE REPUBLIC.

An International Competition has been promoted for the Argentine Institution for the Blind, Buenos Aires, Argentine Republic.

A booklet containing the full text of the conditions with other information (translated from the Spanish) and a plan of the ground on which the Institution is to be erected is available for inspection at the Department of Overseas Trade (Room 42), 35 Old Queen Street, London, S.W.1.

AUSTRALIAN WAR MEMORIAL—CANBERRA.

Competitive designs are invited for the Australian War Memorial at Canberra.

The competition is open to architects of Australian birth, wherever located.

Conditions regulating the submission of designs for the competition can be secured from the official secretary, 44 Whitehall Street, New York.

Obituary

J. W. POWER

It is with deep regret that we have to announce the death of Mr. J. W. Power, Architect, of Kingston, Ontario, who passed away at his Florida home on August 25th last after a long illness, at the age of 73. Mr. Power became a member of the Ontario Association of Architects in 1890 and was responsible for many of the buildings erected in Queen's University, Kingston, Ontario.

DAVID B. DICK

We regret to record the death of Mr. David B. Dick who passed away at his home at Woking, Surrey, England, on September 9th. Mr. Dick was 80 years old and formerly practised architecture in Toronto. He became a member of the Ontario Association of Architects in 1890 and upon his removal to England was elected an honorary member of the O.A.A. Mr. Dick was also a member of the Royal Canadian Academy and at one time was President of the Ontario Association of Architects.

GEORGE RABY

Mr. George Raby died recently at St. Louis, Mo., at the age of 96. Mr. Raby was born in Manchester, England, and came to Canada in 1860, where he practised Architecture. He was one of the Architects who designed the old Parliament Buildings at Ottawa which were destroyed by fire during the war.

THOMAS FRANKLYN MANVILLE

Mr. Thomas Franklyn Manville, Chairman of the Board of Directors of Johns-Manville, Inc., died on Monday, October 19th, 1925, in New York City. For the past twenty-five years he has been the directing head of Johns-Manville, Inc., one of the largest producers and manufacturers of asbestos in the world. In addition to being Chairman of the Board of Directors of Johns-Manville, Inc., the late Mr. Manville was President of a number of other industrial organizations.

Notes

Mr. Jas. Govan, Consulting Architect, has opened an office in the Northern Ontario Building, Room 905, corner Bay and Adelaide Streets, Toronto.

Mr. Neil Darrach, Architect, of St. Thomas, Ontario, has been compelled to withdraw from practice on account of ill health.

Gilbert J. P. Jacques, of Windsor, Ontario, and A. Stuart Allaster, formerly of Brockville, have formed a partnership under the firm name of Jacques & Allaster, Registered Architects, with offices at 3 Ouellette Avenue, Suite 108, Windsor, Ontario.

Alexander Trowbridge has been elected President of the Architectural League of New York to succeed the late Don. Barber.

From a total of 127 contestants in the first stage of the competition for the Canadian War Memorial to be erected in Connaught Square, Ottawa, seven have been chosen to enter the final competition which takes place during November. Of these seven four are from Great Britain, two from Canada and one from the United States.

Mr. W. L. Somerville, Architect, and Miss Frances Loring, Sculptor, both of Toronto, working in collaboration, have succeeded in obtaining a place in the final competition.

Two students of the American Academy in Rome, Lucian E. Smith, Architect, and Gaetano Cecere, Sculptor, working in collaboration, have also succeeded in obtaining a place in the final competition.

Henry Sproatt, R.C.A., of Sproatt & Rolph, Architects, Toronto, was elected Vice-President of the Royal Canadian Academy of Arts at their recent annual meeting held in Montreal.

The Ontario Gypsum Company, Limited, Paris, Ontario, announce the removal of their Toronto Office from the Federal Building to the Northern Ontario Building, Bay and Adelaide Streets, Toronto.

Manufacturers' Publications Received

INDIANA LIMESTONE QUARRYMEN'S ASSN., Bedford, Indiana.

Indiana Limestone. Details and Data Sheets.

This is a series of Details and Data Sheets showing the details of Indiana Limestone Cornices, Columns, etc. These sheets also contain illustrations of different types of buildings on which Indiana Limestone has been used. Size 8½ x 11.

ONTARIO GYPSUM CO. LIMITED, Paris, Ontario.

Insulex.—Architects Book.

This book gives a very interesting description of "Insulex", the new insulating product. It contains details drawn to scale showing application of this Insulating material. Size 8½ x 11.

"Gypsum Plaster Affords Fire Protection"

Six page folder, size 8½ x 11.

This folder gives the results of fire tests made with Gypsum Plaster.

The article has been written by Virgil G. Marani, C.E. and deals exhaustively with the advantages of using Gypsum Plasters.

SARNIA BRIDGE CO. LIMITED, Sarnia.

Massillon Bar Joists. Loading Tests.

This book gives the results of tests of the Massillon Joists made by the Pittsburg Testing Laboratory, University of California, Ohio State University, Department of Public Works, Philadelphia, Toronto University and others. In addition to the Graphic Charts the book contains illustrations of the way the tests were made. Size 8½ x 11.

TOCH BROS. INC., 110 East 42nd Street, New York.

"Shall Anything Be Added to Portland Cement"

8 page folder, size 8½ x 11.

This folder gives the results of experiments made to determine the correct coloring pigments which can be added to Portland Cement without interfering with the setting or with its tensile strength.

"R.I.W. Colored Integral Hardener for Concrete Floors"

4 page folder, size 8½ x 11.

This folder in addition to giving a description of this product also includes a specification covering the application of R.I.W. Colored Integral Hardener. The hardener is made in six different shades and is shown in the folder.

Editorial

(*Continued from page 193*).

easily convince his clients that he is quite capable of looking after their requirements. As is well known, the architects to-day are facing greater competition from engineers and contractors than ever before and it is only by making themselves conversant with technical subjects such as those published in the Journal from time to time, that they can hope to compete with the different forces that are attempting to take away the architect's practice.

STANDARDIZATION OF ADVERTISING LITERATURE

Mr. Hyde's article on the standardization of trade literature as published in Industrial Canada, from which an excerpt is given in this issue, is both opportune and timely. Mr. Hyde's contention that a large percentage of the advertising matter sent to architects reaches the waste paper basket by the shortest possible route is unfortunately only too true. If manufacturers of building materials would only consider the difficulties of the architect in filing away all the information which comes to him every day, they would no doubt get together and decide upon a system such as Mr. Hyde suggests that would enable the architect to not only file the literature sent to him, but also make it possible for him to refer to it when he requires to do so. We believe that much could be done towards this end if the manufacturers of building materials were to appoint a committee consisting of several of their representatives and arrange a conference with a select committee of the Royal Architectural Institute of Canada for the purpose of arriving at some satisfactory arrangement that would be beneficial to both the architects and themselves. It should not be very difficult to arrive at some satisfactory basis when this matter has already been successfully dealt with by the American Institute of Architects who working in conjunction with the American manufacturers of building materials evolved a standard size of advertising literature, viz., 8½ ins. x 11 ins., as well as a system of filing, the numbering for which is furnished by the American Institute of Architects.

Forty-first Annual Exhibition

The Architectural League of New York will hold their Annual Exhibition at the Building of the American Fine Arts Society, 215 West 57th Street, New York City, commencing Friday, January 29th, and ending February 28th. This Exhibition will include architecture and the allied arts and awards will be made to outstanding designs in the several branches of the allied arts as well as architecture. Entry slips must be returned not later than December 28th, 1925.

Book Reviews

MUNICIPAL REVIEW—WAR MEMORIAL SOUVENIR NUMBER—$2.00.

This volume contains numerous illustrations of War Memorials erected throughout Canada since the armistice. It is beautifully printed and the publishers are to be commended for furnishing Canadian citizens with an almost complete record of war memorials erected in Canada. The memorials illustrated in this volume vary in purpose and design. They include memorial tablets, stained glass windows, monuments, cenotaphs, memorial hospitals, university buildings, museums, memorial towers, community halls and memorial arches. There is also a memorial message written by Lieut.-Gen. Sir Arthur Currie, Commander of the Canadian Corps. The message is a very inspiring one and will touch the heart of those whose privilege it is to read it. The profits of the sale of the book, we understand, will be devoted to the war widows and orphans to whom they will be handed by a public organization.

MODERN HOSPITALS, SPECIAL ISSUE OF THE ARCHITECTS' JOURNAL, LONDON, ENGLAND. One Shilling.

Here is a most comprehensive volume illustrating numerous hospitals erected throughout the world. It includes special articles on hospital planning as well as the modern equipment of hospitals. There is also an article written by John Wilson, F.R.I.B.A., Chief Architect of the Scottish Board of Health, on the necessity of providing separate buildings for nurses' homes. It is interesting to compare the plans of the various hospitals described in this volume. Some of them are quite ingenious. We recommend this issue of the Architects' Journal to all architects who are interested in hospital planning.

Back Numbers of The Journal

The increasing popularity of THE JOURNAL has created a demand for back numbers, so that with the exception of the Third Quarterly issue of 1924, and the Sept.-Oct. issue of 1925, hardly any copies are available, the majority being "out of print." Subscribers are well advised to preserve their file complete, but if any copies are available the publishers will appreciate a report to THE SECRETARY OF PUBLICATION, R.A.I.C. JOURNAL, 160 RICHMOND ST., TORONTO 2.