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CONSTRUCTION

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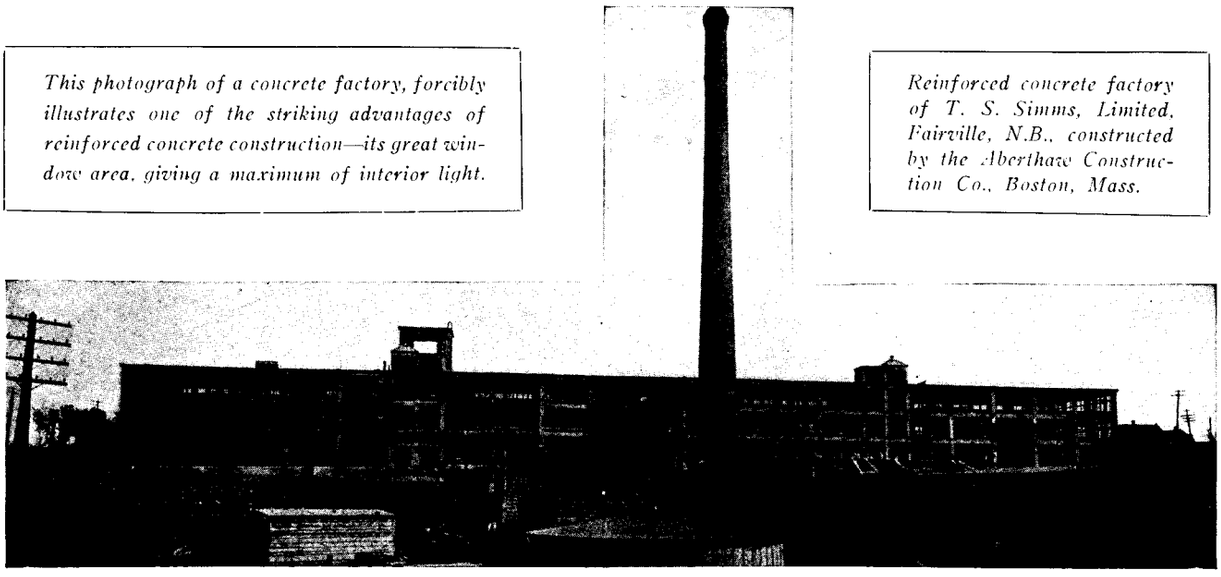

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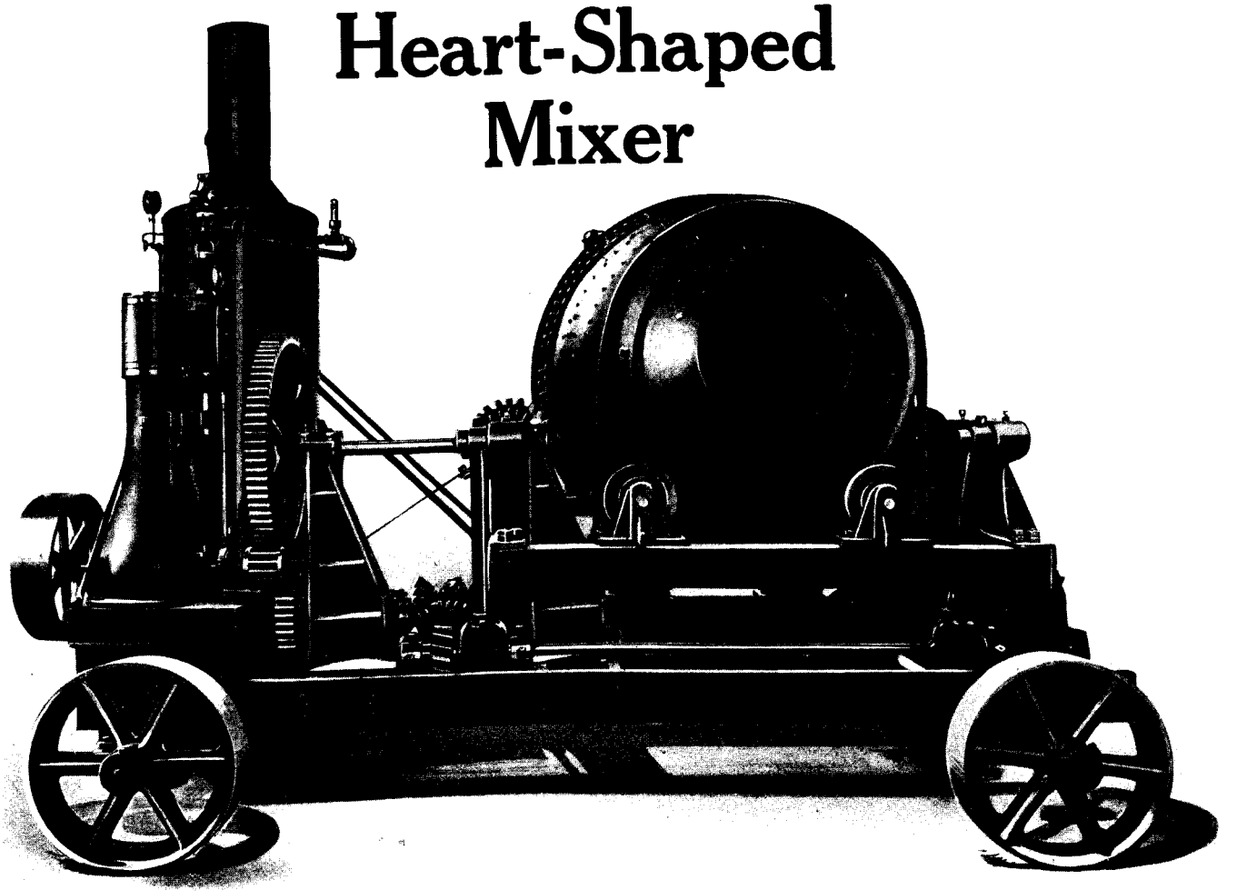

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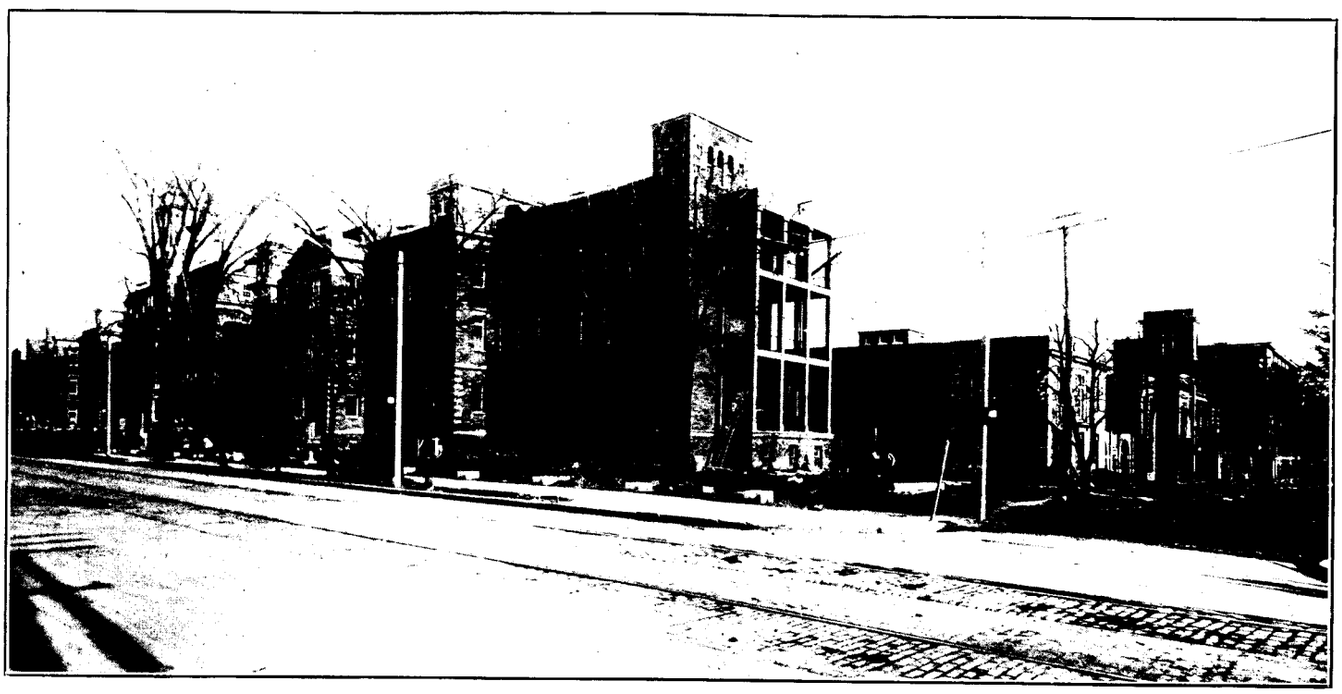
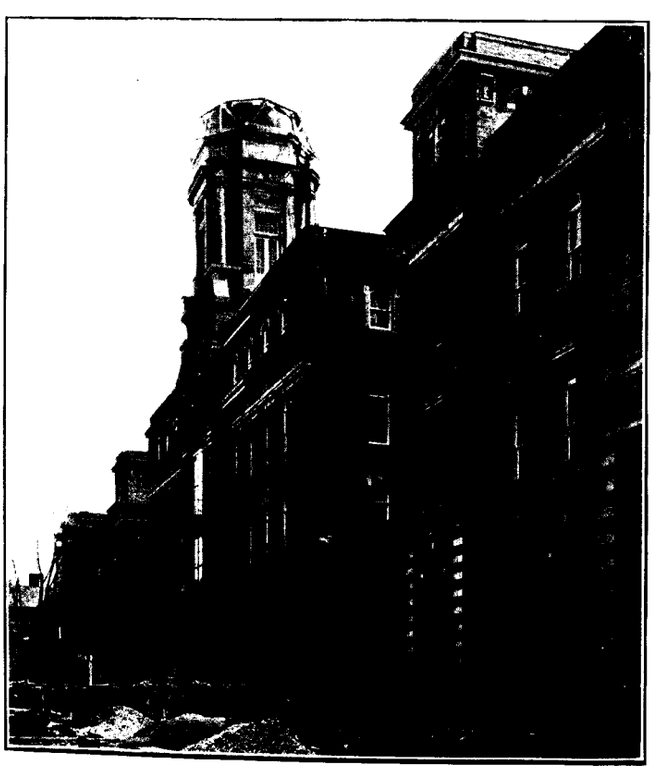


General View of Group of Buildings, Toronto's New General Hospital. Darling & Pearson, Architects.



Administration Buildings, Toronto's New General Hospital.
Darling & Pearson, Architects.

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View from Inner Court, Toronto's New General Hospital. Darling & Pearson, Architects.

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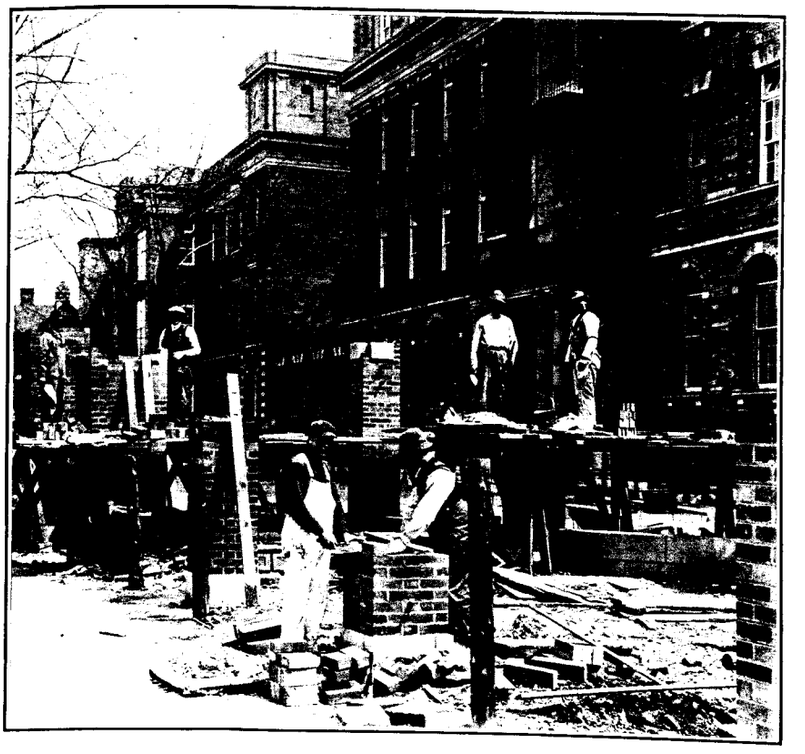

Section of North Face, Toronto's New General Hospital.
Darling & Pearson, Architects.

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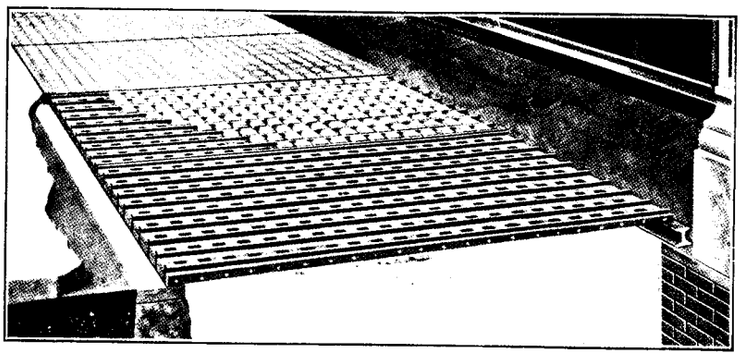

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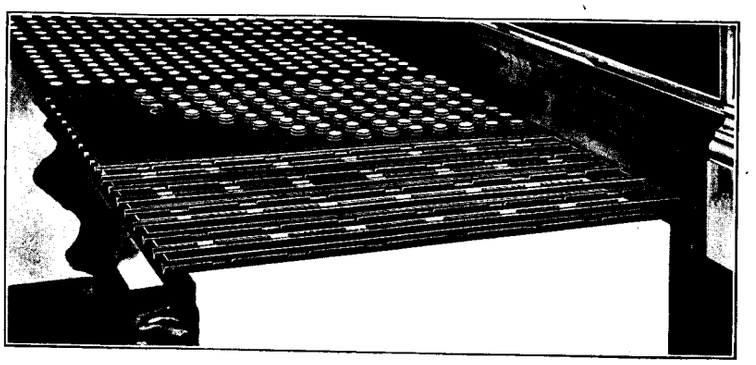

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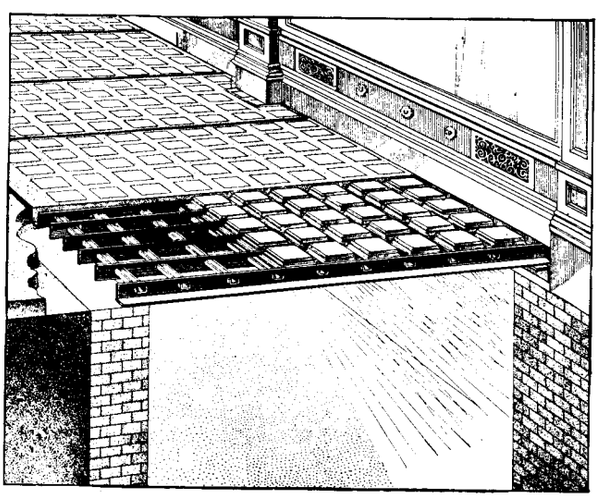

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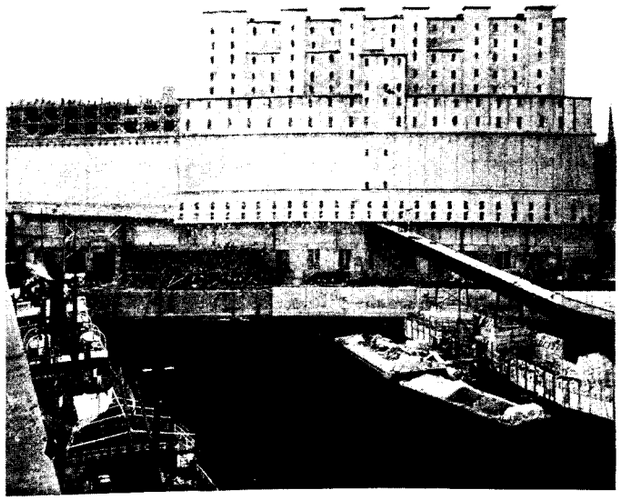

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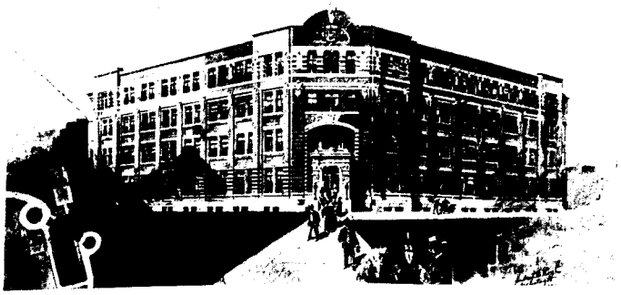

Isolation Hospital, Winnipeg. Architects—Ross & MacDonald. Contractors—Clayton Bros. Medusa Compound supplied by the V. C. North Contracting and Supply Co., Winnipeg.

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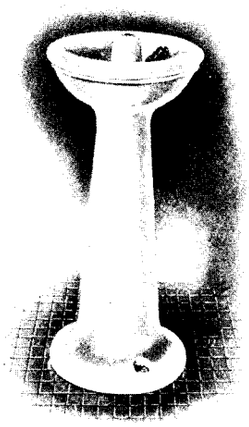

Plate F 3013.

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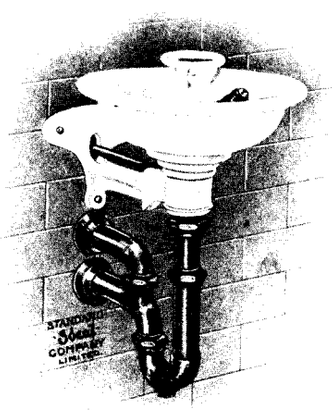

Plate F 3342.

Plate F 3305.

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ALEXANDRA WARE

CONSTRUCTION

VOL. VI NO. 5

CONTENTS FOR MAY, 1913

Full Page Illustrations

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GRAPHIC ARTS BUILDING, TORONTO, CANADA

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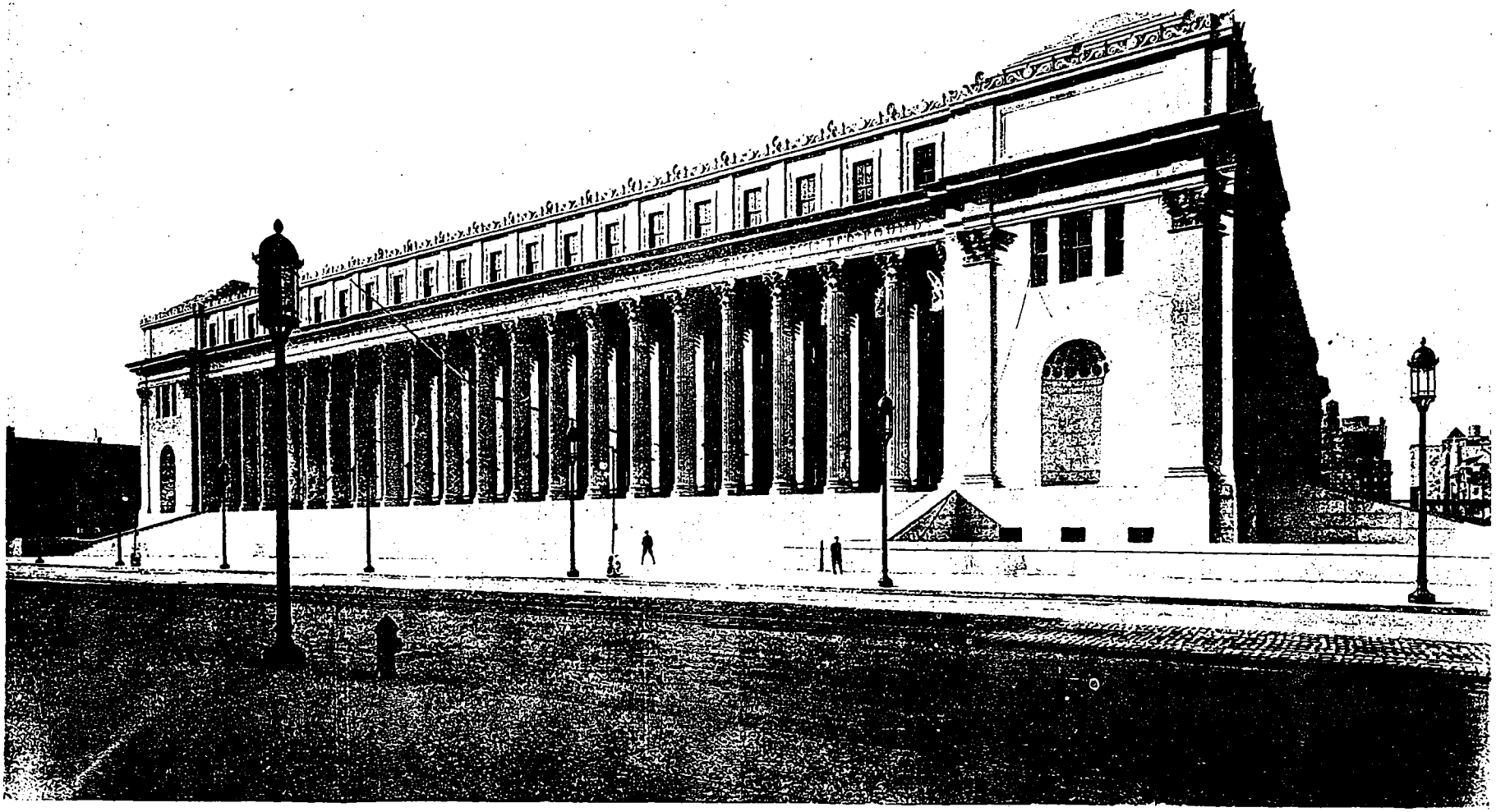
MONTREAL WINNIPEG VANCOUVER CHICAGO NEW YORK



U. S. POST OFFICE, NEW YORK CITY.

MCKIM, MEAD & WHITE, ARCHITECTS.

¶ *New Departmental Buildings at Ottawa—Advisability of competitions—The irreparable mistake of following the proposed scheme.*

ALL ARCHITECTS will commend the action of the Government in calling for general competitions for the new departmental buildings. Nothing has proven more of an eyesore than the Victoria Memorial Museum at Ottawa. In design, in plan and in construction it is lamentably weak. Our readers are too well aware of its faults to take space in mentioning them, but we feel that one example of this kind affords ample opportunity for our apologetic natures. It is only by allowing various architects to develop their ideas that we can arrive at a satisfactory solution. And it is more than gratifying to feel that a part of the Government officials, at least, are broad enough to realize what a terrible mistake it would be to have the new buildings erected by the same corps of artists who were responsible for the museum. Our commercial architecture in Ottawa is reaching a high standard and demonstrates the truthfulness of Leonard Stokes' statement that the Canadian commercial buildings are better, architecturally, than those in the old country. These same men can demonstrate their ability if allowed to execute their ideas already formulated in reference to the needs of the Government. The great demand for office room is felt in all departments, and as a consequence, the planning of new structures will soon become imperative. The location, size and style will have considerable to do with the future charm of the capital. Word comes that the Government will shortly call for a general competition of British and Canadian architects to submit plans based on the general design submitted by E. White. Is it possible that the men in charge of this work will allow the need of accommodations to blind them to every other consideration? Can they be so foolhardy as to accept a scheme which is absolutely incongruous to the design of the Parliament Buildings, the avenues which lead up to it and to the natural contour of the ground upon which it is to be located. Some potent influence must be brought to bear—and at once.

¶ *The replanning of Ottawa—Proposed scheme by E. White severely criticized by architects in general—A question of vital importance.*

THE CITY OF OTTAWA is scarcely aware of the momentous problem which is agitating the artistic sensibilities of Canadian people. It is not a question of whether the capital shall have a comprehensive plan for the beautification and future development of the city. This fact has already been settled. But the chief point to be considered is the selection of plans which will eradicate the blunders of the past and eliminate the possibility of future mistakes.

The city of Ottawa, destined to be the political centre of a great country has natural advantages over other capitals. Located on a high cliff overlooking the Ottawa River, it commands an impressive view of the distant Laurentian hills. At the present time there are two hundred and thirty-seven acres devoted to parks and playgrounds within the city limits and two thousand acres of natural park adjacent.

In view of the natural advantages and the wonderful possibilities presented, we must bend our efforts in a manner most worthy of our well known ability in matters of civic improvement. We cannot afford to consider the cost. This is the reason why neighboring cities are spending millions of dollars to obliterate the false ideas of narrow visioned men of yesterday. Surely we have learned this lesson already and why repeat the same absurdities condemned so harshly in those who failed to rectify the ignorant plans of their predecessors.

As N. Cauchon said in his lecture at Ottawa—summarized in another part of this issue: "Prominent architects who visit the city invariably express their regret that at the time when land was comparatively inexpensive this street (Metcalf) was not sufficiently widened to permit of proper treatment." Metcalf street, it is claimed, could have been made a wide avenue leading to the Houses of Parliament. The point arises, if it were possible at one time, cannot it be made practical now. It may mean the demolition of many buildings and at a great cost. But why hesitate, for these reasons? Ten years hence the

capital of Canada will be so important and the developed resources of this country so vast that the expenditure necessary to make such a radical change now will have been more than justified. Comparatively speaking, it will cost no more to make a wide approach to the Parliament Buildings now than it would have five years ago. But the rapid growth and the high class of buildings being erected in Ottawa to-day will exclude the possibility of such a change unless done in the very near future.

Several reasons have been offered why Edward White's plan for the replanning of Parliament Hill should not be accepted. Unquestionably the streets of the city should have been considered in relation to the proposed buildings. There is no point of interest at the head of any one approach and the commanding vistas, for which foreign cities are so famed, do not enter into the scheme at all. This, if nothing else, should be sufficient cause for its rejection. A second point was brought out by Frank W. Simon, a well known British architect, who said: "Ottawa is a most picturesquely situated place. Your present Parliament Buildings are wonderful, both as regards architecture and natural situation. I understand you are going to add new ones; I have, in fact, seen sketches of the proposed buildings and I am strongly of opinion that they should be designed in harmony with the present structures. As proposed, they would challenge these latter in a rather disastrous way. I do not, consequently, approve of Edward White's plans."

Leonard Stokes, in his recent visit to this country, while unwilling to comment on the proposed scheme for the new departmental buildings, said: "There should be a great deal of consideration before you take any step. The site the Government has taken north of Wellington street is a difficult one to deal with. You do not want to make another mistake."

Mr. Stokes suggested the cutting away of the cliff around Parliament Hill and constructing at a lower level a large semi-circular building on it for departmental purposes. This structure would look out on the river and locks, extending from a point east of the East Block, following the side of the cliff around below the Parliamentary Library to the jog in the cliff near the West Block. The cliff could be cut back to a sufficient distance to allow for the width of the building as well as a roadway on the concave side of the semi-circular structure. The building would be connected with the Parliament Buildings by underground passages. There would be lots of light as all the windows look out onto an unobstructed view and the building would be long and narrow. It would also give an impressive effect to Parliament Hill, particularly when viewed from the river on the east or west sides, presenting a picture of the river, then the rugged cliff for a few feet, then the departmental building, and towering above it the present Parliament Buildings, all one grand series.

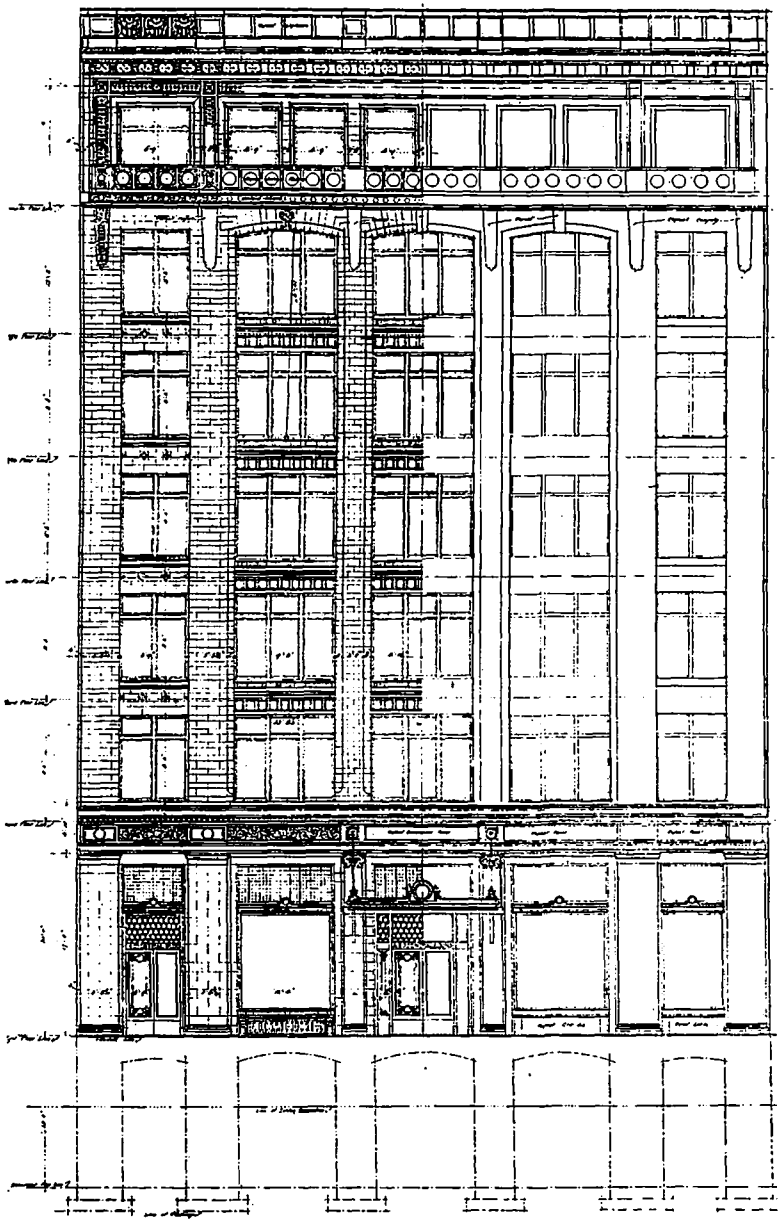
It is to be sincerely hoped that among all our representatives in Ottawa there are a few whose vision is keen enough and whose patriotism is so deeply rooted that they will make a decided stand for both a practical and artistic plan. We cannot afford to accept the first scheme proposed, especially if it contains little of commendation. Let the architects and others interested in civic improvement think seriously over this matter and after mature deliberation express yourself freely and forcibly. We need united action upon a question which means so much to every Canadian.

¶ *The atelier work—Its aid to the College graduate and the beginner—Essential to those lacking educational advantages.*

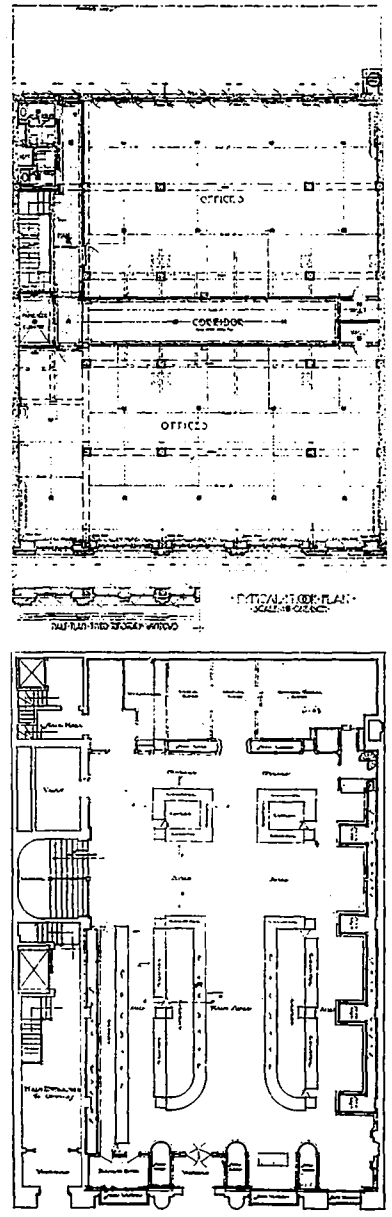
THE CRITICISM that the editorial on atelier work in the last issue is detrimental to the interests of the departments already established in the various colleges is unwarranted. The school has its own individual function and is worthy of the responsibilities placed therein. It lays the foundation for the student in his eagerness to grasp the essentials of modern work as based upon the architecture of former generations. It teaches him to concentrate his efforts on well known precedents of pure style and harmonious proportion. It gives him the power to grasp the problem intelligently, the ability to adapt pure and wholesome products of good art and the knowledge of how and where to locate the various examples which furnish the proper incentive in his work.

All this and more is derived from the careful and conscientious efforts of the college courses. But the atelier has its mission also. Here the student under the guidance of one or more practising architects of high standing can make himself more proficient in the use of his mechanical training. His work assumes the nature of a post-graduate course and broadens the theoretical into the practical. The student can apply himself to the advanced problems, while the young man who cannot avail himself of the preparatory work in college, is able to grasp the fundamental principles under the guidance of men who are well versed in the needs of the beginner and who are fully capable of criticizing in a wholesome practical manner. We do not wish to detract one iota from the university courses, in fact we strongly urge every young man to grasp the exceptional opportunities which such institutions extend. But in placing an H.C. upon the young man of ability simply because he is not in a position to enjoy these privileges is wrong and should not be countenanced. Were we to debar from the profession all those who never graduated from a school of architecture, there would be a dearth of good men to carry on the large amount of work which is being done throughout the Dominion. Since some of the largest offices debar the draftsman who has not a degree we feel that our readers would more than appreciate a statement from them as to how they justify their position.

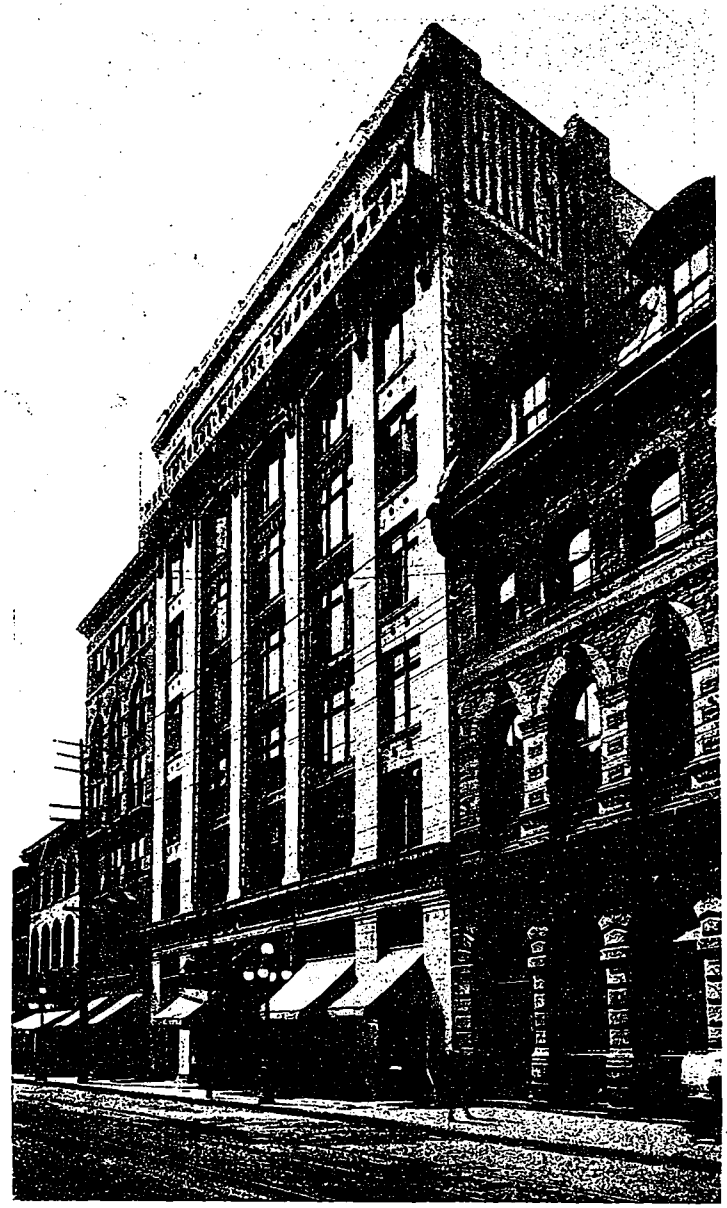
THREE GENERAL VIEWS OF OTTAWA, ONTARIO.



DETAIL OF MAIN FACADE.



GROUND FLOOR PLAN.



MAIN FACADE.

BIRKS BUILDING, OTTAWA, ONT. WEEKS & KEEFER, ARCHITECTS.

STORE ROOM IN BIRKS BUILDING, OTTAWA.

Two New Buildings, Ottawa, Ont.

FOR SOME YEARS the commercial side of architecture in Ottawa has been at a complete standstill. Few buildings were erected until recently which showed any marked advance, and consequently a false impression was given to the thousands who visit the capital city annually. It is encouraging to note the vast improvement in this direction during the last two or three years, and bespeaks a promising future.

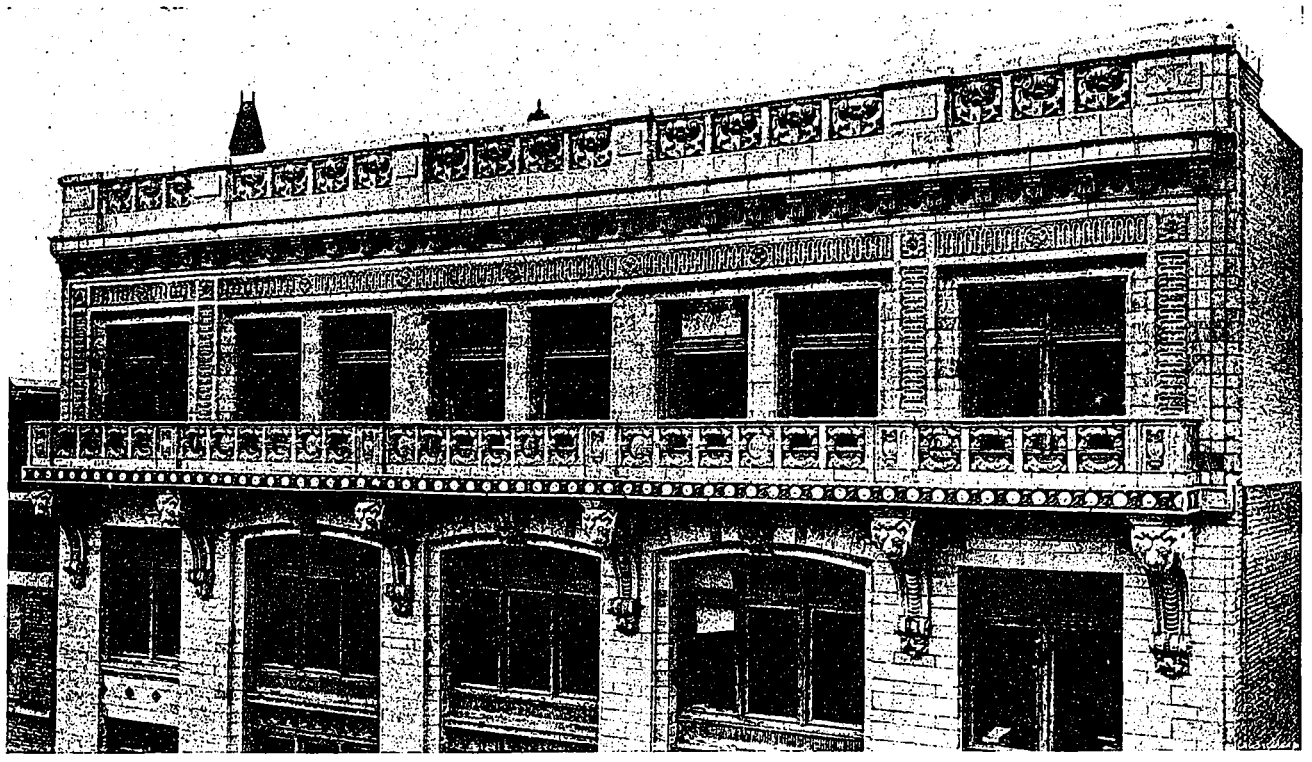
No city should receive more attention to the character of its buildings since the whole country is more or less measured by the artistic development of its capital. Ottawa is exceptionally favored in its natural surroundings and should allow of no new structure which might detract from the general artistic appearance of its streets. Once the atmosphere of beauty permeates throughout the city there will be little need of unfavorable comment.

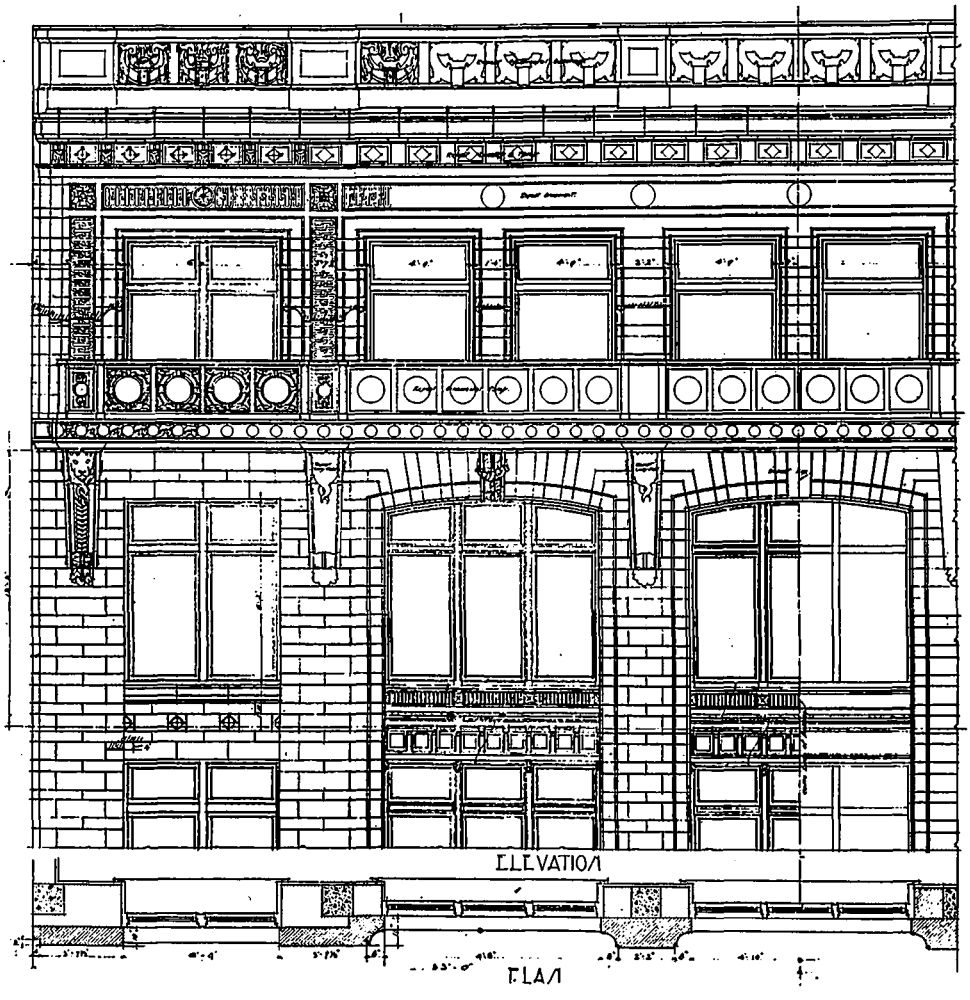
The buildings illustrated in this number reveal the high standard set by the profession, while others in the course of erection plainly demonstrate that a decided step forward has been made along the lines of dignified and artistic architecture.

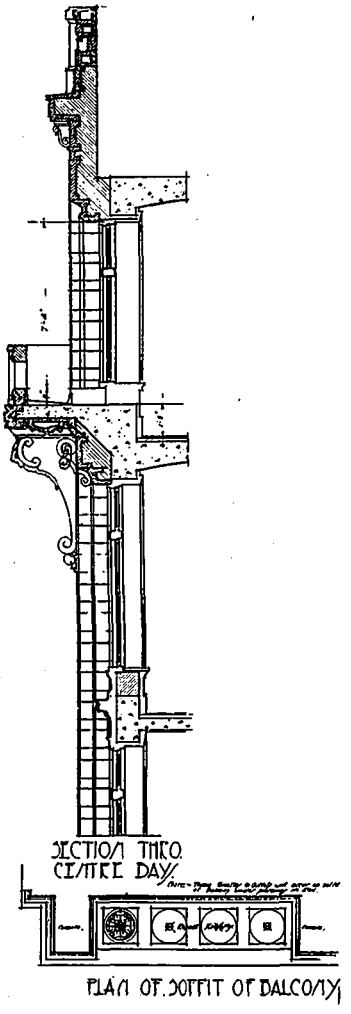
Birks Building, Ottawa.—The new Birks building is a reinforced concrete structure designed to accommodate the business of Messrs. Henry Birks & Sons, Limited, jewelers, who occupy the ground floor, basement and half of the second floor. All floors above the ground floor are devoted to office purposes. The facade of the building is of English terra cotta. Upon the interior the store is finished with moulded plaster ceilings supported by columns of Violet Breche marble, the slabs being 14 feet long in one piece; the floors are finished with marble mosaic, while all fixtures, counters, show cases, etc., are of mahogany. The heating is by the vapor system. All public corridors, toilets, etc., are finished in terrazzo and marble.

Canada Life Building, Ottawa.—The building for the Canada Life Company is a fireproof structure with reinforced concrete columns and slabs. The ground floor is occupied by the business offices of the Canada Life Assurance Company, the upper floors being subdivided for private offices. The entrance hall is panelled in Missisquoi marble with marble mosaic covering the entire ground floor. The walls of the business office are panelled with African mahogany, the ceiling beams and cornice being richly modelled in plaster. The front of the building is finished in English semi-glazed terra cotta, and was one of the first high buildings to be erected on Sparks street.

One is led to believe that the new impetus to building will bring about a wholesome atmosphere conducive to an artistic centre. It is already noticeable in the business sections, the hotel and apartment districts and throughout the home territory. With the proper selection of a design for the new departmental buildings, Ottawa will undoubtedly become one of the most beautiful capital cities of the world.



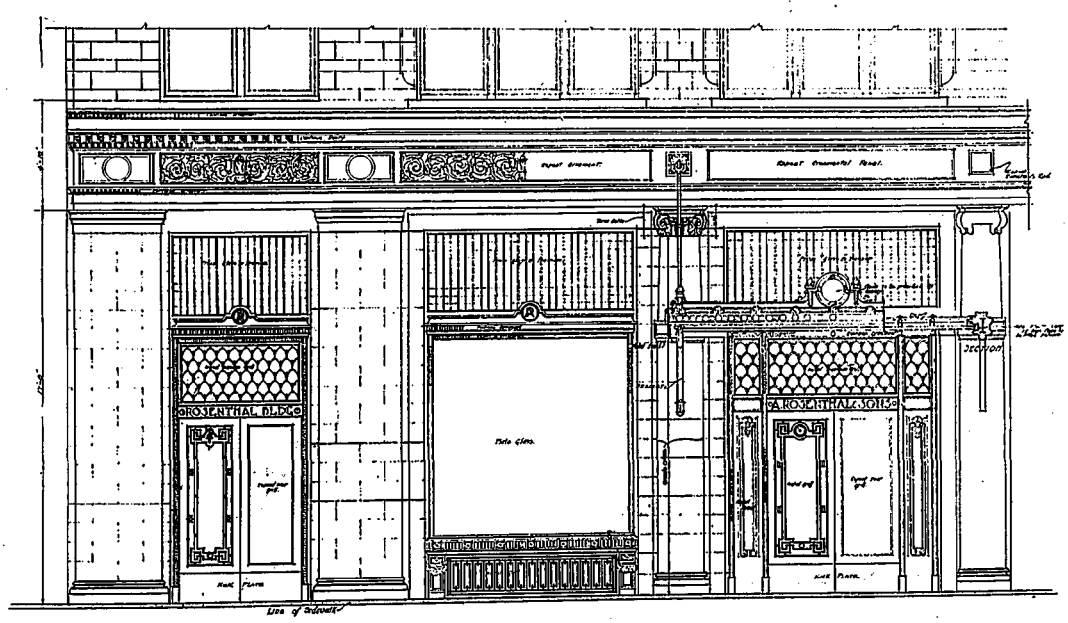




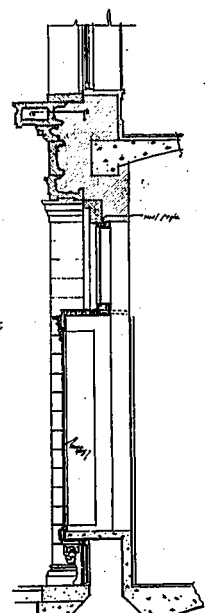
DETAIL OF CORNICE AND BALCONY.

BIRKS BUILDING, OTTAWA, ONTARIO.

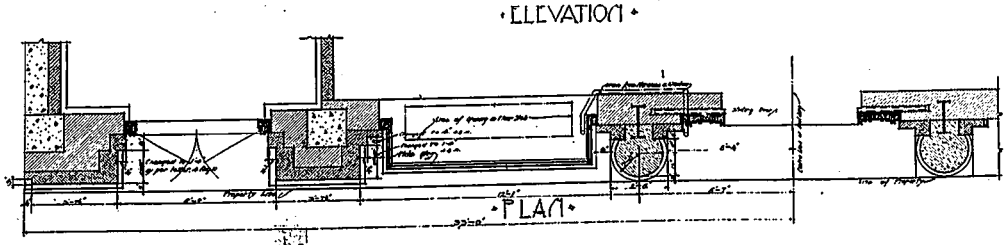
WEEKS & KEEFER, ARCHITECTS.



ELEVATION



SECTION THRO SHOW WINDOW.

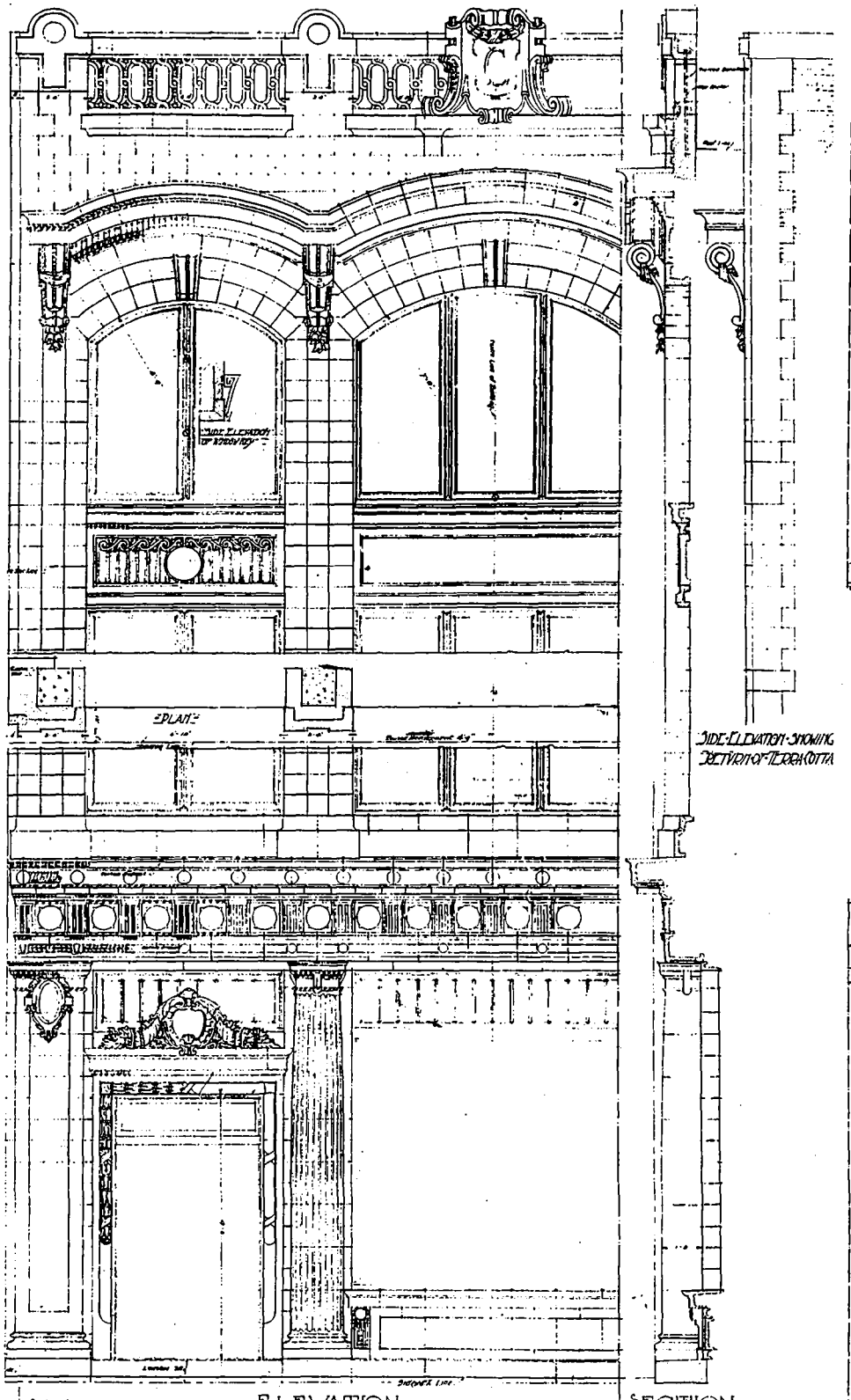


PLAN

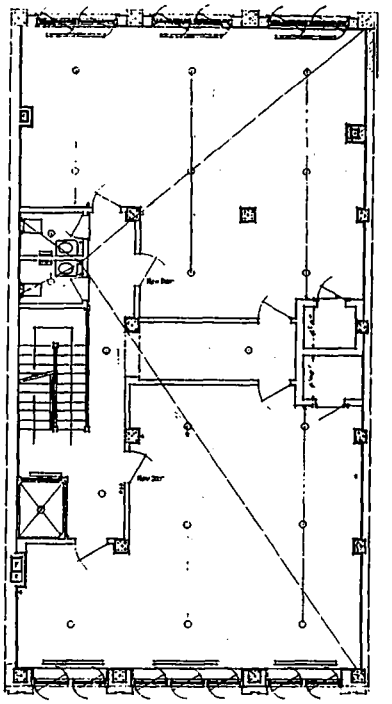
DETAIL OF FIRST STORY.

BIRKS BUILDING, OTTAWA, ONTARIO.

WEEKS & KEEFER, ARCHITECTS.



BUILDING FOR THE CANADA LIFE INSURANCE COMPANY LIMITED SPARKS STREET OTTAWA 3/4 INCH SCALE DETAIL OF MAIN FACADE DRAWING NO 13 WEEKS & KEEFER ARCHITECTS 220 SPARKS STREET OTTAWA

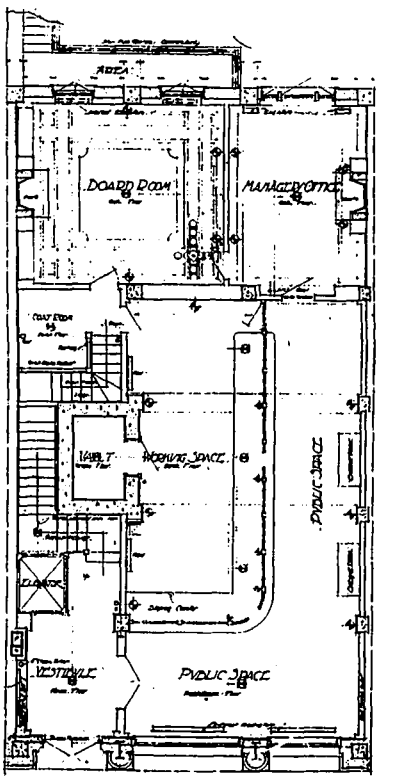


TYPICAL FLOOR PLAN.

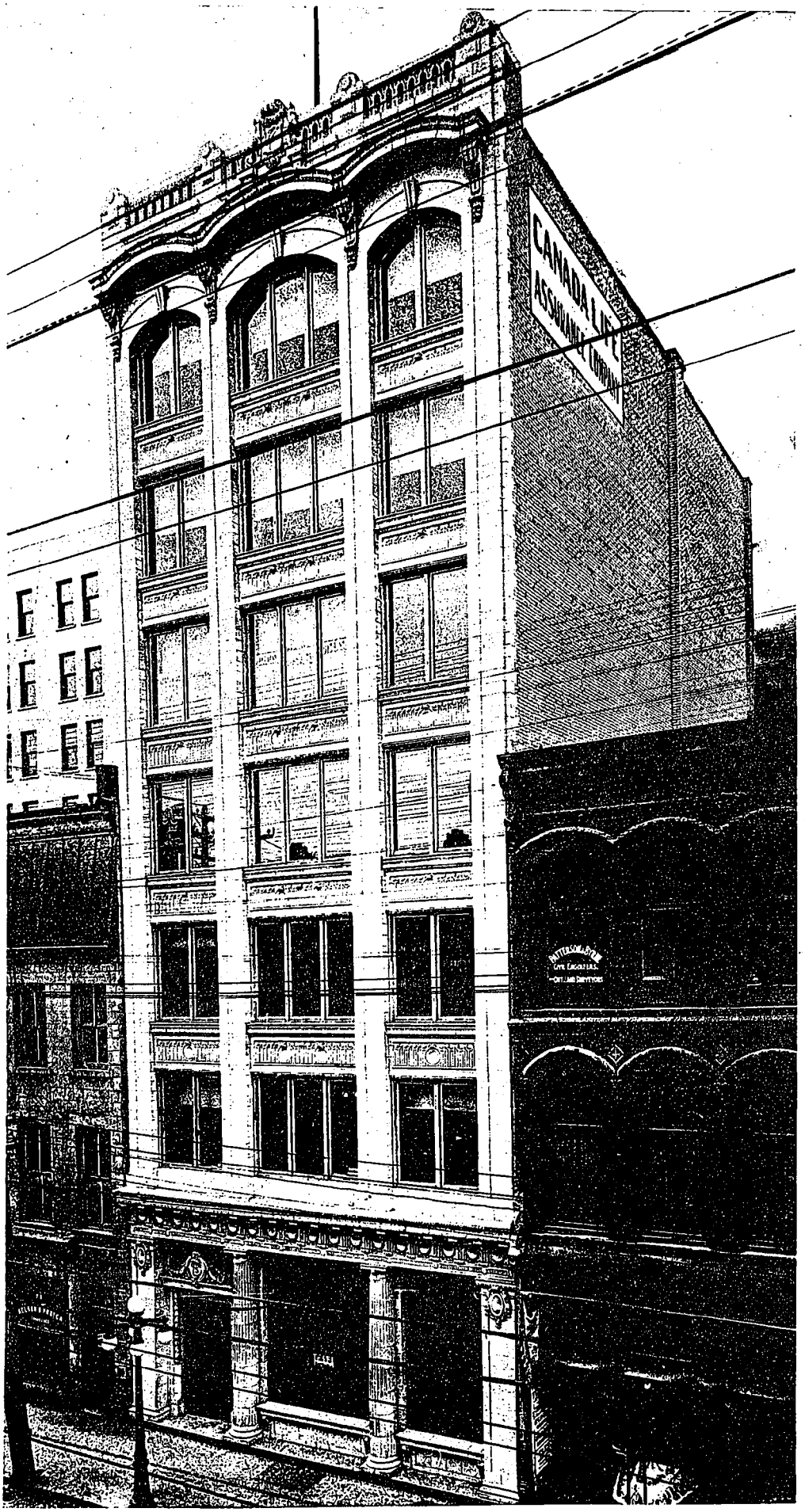
CANADA LIFE ASSURANCE BUILDING,

OTTAWA, ONT.

WEEKS & KEEFER, ARCHITECTS.

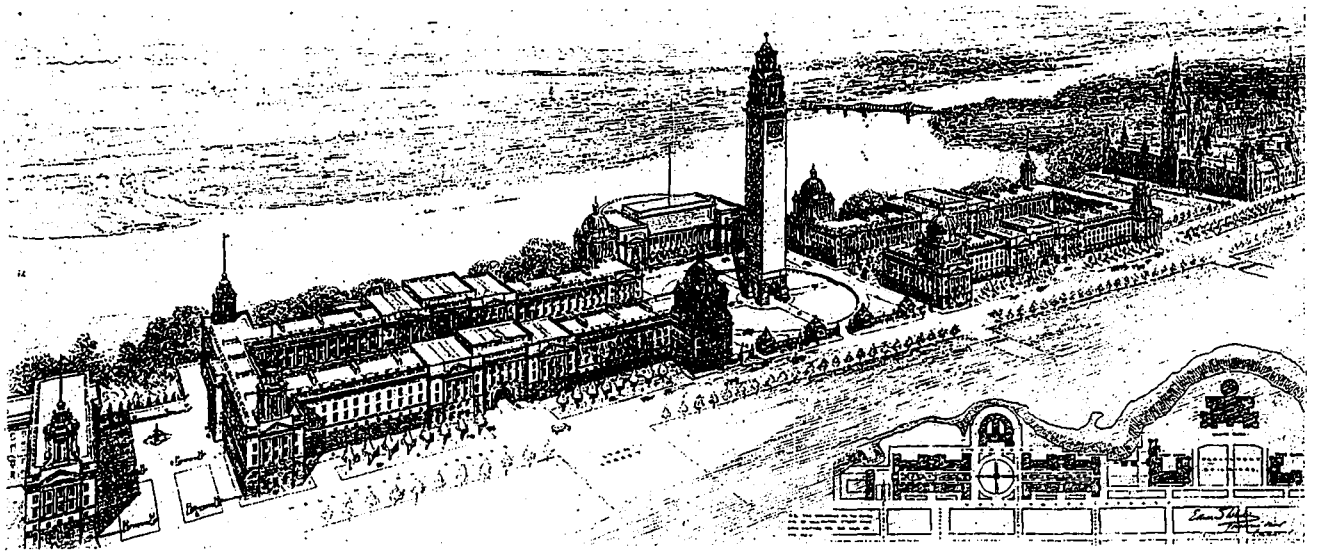


FIRST FLOOR PLAN.



CANADA LIFE ASSURANCE COMPANY, OTTAWA, ONT.

WEEKS & KEEFER, ARCHITECTS.



PERSPECTIVE VIEW OF PROPOSED SCHEME, BY E. WHITE, ARCHITECT.

The Replanning of Ottawa

FOR some time the replanning of Ottawa has been the cause of a great deal of discussion and consideration by the people of the Federal Capital. Particularly has this been the case during the past year, since it became apparent that the Government must enter upon an extensive building programme if it is to cope with its great need of office accommodation. At present a great number of private buildings are rented to supply office space and this arrangement does not prove at all satisfactory because of the scattering of departments and branches thus necessitated over various portions of the city. The volume of Government business is rapidly increasing, due to the remarkable growth of the country.

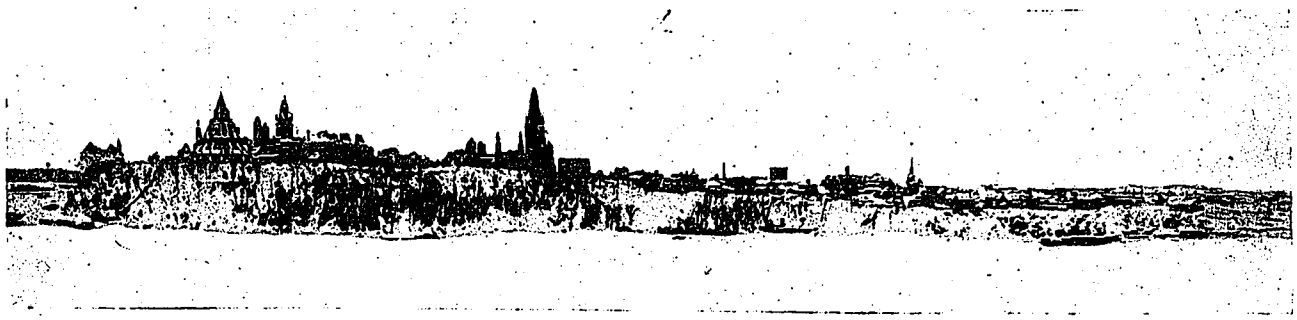
Last year the Government expropriated a considerable tract of land west of Parliament Hill, the area extending from the cliffs which overlook the Ottawa River to Wellington street. It is somewhat less in width than the portion commonly known as Parliament Hill, which also stretches from Wellington street to the cliff. The new district extends along Wellington street approximately 1,700 feet.

How to best utilize this new area for departmental buildings is the question that has brought the discussion of replanning the city to an issue. N. Cauchon, of the engineering firm of Cauchon & Haycock, is preparing plans of the city and surrounding localities for the Government. The primary object is to provide a map for the guidance of the Provincial Railway and Municipal Board in passing upon plans of new subdivisions, as well as to form a groundwork for the future improvement of Ottawa and outskirts in keeping with the artistic and practical needs of our Capital City.

It is believed that when this new map has been submitted to the Government, steps will be taken to provide a commission with authority over the entire question of improving the layout of the city. It has been the cause of considerable regret that when the Houses of Parliament and the East and West Blocks were built no provision was made to have a wide central avenue leading through the city to them with ample provision for a monumental approach to the main building and Parliament Square. Excellent use is made of similar opportunities in other capital cities, but in Ottawa, Metcalf street, which could have formed such an approach, is slightly out of line. Prominent architects who visit the city invariably express their regret that at the time when land was comparatively inexpensive this street was not sufficienlty widened to permit of proper treatment

Mr. Cauchon recently gave a lecture before the Women's Art Association in which he advanced a scheme to provide against a similar mistake in the new group of departmental buildings. He suggested the widening of Lyon street, which parallels Metcalf street four blocks further west, into a broad boulevard running through a central portion of the city and having for its focal termination the main feature of the new departmental group. The treatment would be somewhat similar to the Champs Elysees in Paris, which forms an impressive vista from the Arc de Triomphe to the Louvre. The main feature in the departmental group would form a commanding position when looking up the widened Lyon street, which could be called the King's Way.

The Dominion Government recently engaged the services of Mr. E. White, of England, who—assisted by Sir Aston Webb—prepared a plan for the treatment of the lands recently expropriated. One of the accompanying illustrations shows their



SKETCH SHOWING EXISTING BUILDINGS.

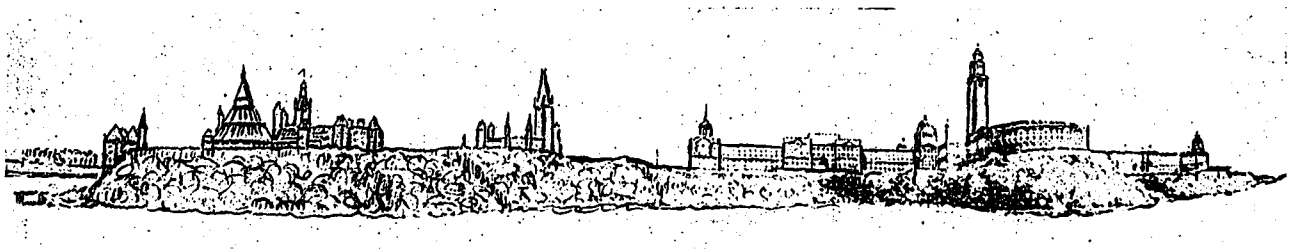
plan as submitted to the Government—a view from the south. A second sketch shows the view from the Quebec side of the Ottawa River as the cliffs appear to-day, and a third as they would appear with the erection of the proposed buildings.

Mr. Cauchon, in discussing these plans, considered them to be wrong in principle. He argued that in the treatment of extending flat surfaces, long horizontal lines should not be used since they only tend to accentuate the flatness, but that vertical lines should predominate in the composition to balance the low effect of the natural conditions. He maintained that the proposed buildings are wrong also in plan because no advantage is taken of the city streets in order to provide focal points for the existing vistas.

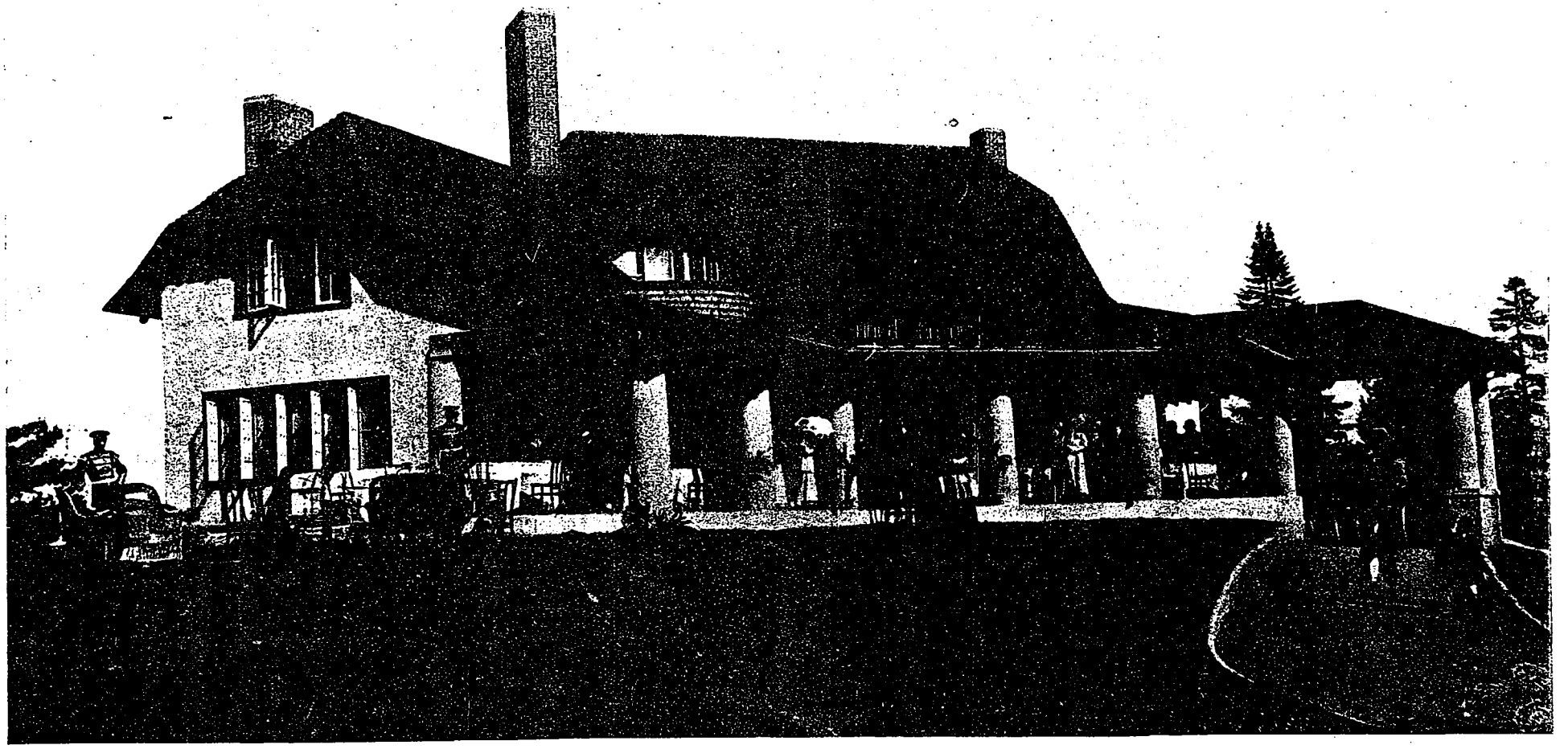
He stated further that the plans were wrong in style, being a very modern Renaissance, and would not harmonize with the Gothic architecture of the Parliament Buildings, which naturally form the keynote to the whole composition. The central tower was also criticized as not being an integral part of the building and lacking ostensible function. He suggested a style of architecture that, while not necessarily of the Ogival Gothic which prevails in the main Parliament Buildings, would be of a transitional character naturally evolved from it. For example, he cites the early French Renaissance, which combined adaptability of plan and openings to modern needs. A tall building was recommended along Wellington street somewhat similar to the Chateau Laurier, roughly outlined in composition with towers facing the vistas and curtain walls between.

For the river elevation the idea was advanced to have a series of masonry terraces to the water's edge, the architectural lines of which should be carried around the face of the present promontory on which the existing Parliament Buildings are located. This irregular promontory would be cut back in order that the lower stories might not be foreshortened as they now appear when viewed from the opposite side of the river. Such a treatment with an embankment driveway along the water's edge would unite the present and the future buildings in one architectural composition with the river as the common plane. Mr. Cauchon explained how this was particularly desirable from the fact that the new buildings would be on a bench some 40 or 50 feet lower than the present buildings, and unless united to the former in a comprehensive composition would always appear as a disjointed grouping.

Mr. Cauchon said that the architects in all parts of the Dominion should take an even greater interest than heretofore in the Federal Government buildings. He urged that they express their views freely, in order that the public may become enlightened and co-operate with them in raising the artistic standard of our public buildings and make them representative of Canada's great growth. He strongly urged that the design of all great public buildings should be on a competitive basis, giving the public a chance to get the best and the architects an opportunity to produce structures of artistic and practical merit. It is only in the case of public buildings that there is an opportunity of designing idealistic work. With strong, wholesome criticism from the profession and united action on the part of all deeply interested, the development of Ottawa will be along wholesome and practical lines.



SKETCH SHOWING PROPOSED ADDITION.



OTTAWA HUNT CLUB,
OTTAWA, ONTARIO.

WEEKS & KEEFER, ARCHITECTS.

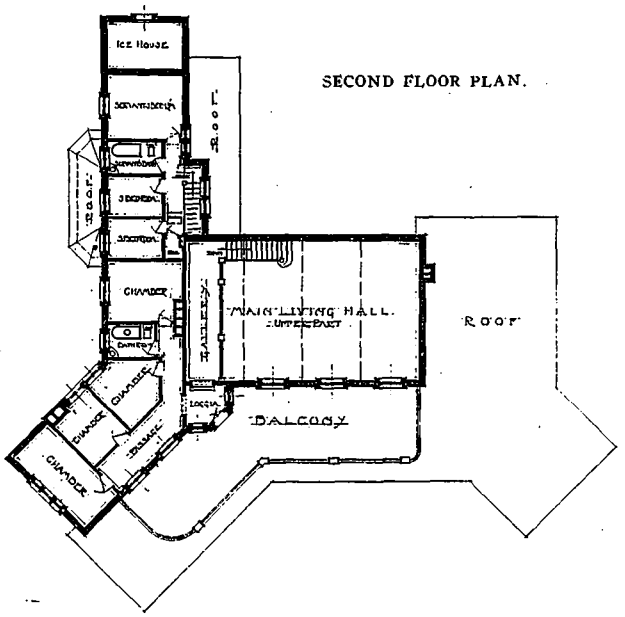
Two Club Buildings, Ottawa, Ont.

CANADA'S WEALTH in natural sports has necessitated the construction of club buildings throughout the various provinces. The rapid growth in the cities has increased the number of such organizations and enriched the landscape with artistic and homelike buildings. Ottawa already possesses a number of attractive clubs, and is continually adding others, which are equipped in a thoroughly practical manner and whose architecture furnishes an expression of the spirit within. The examples illustrated here are representative of the vast improvement in this direction and augur well for the future position the Dominion may strive to hold in this phase of its life.

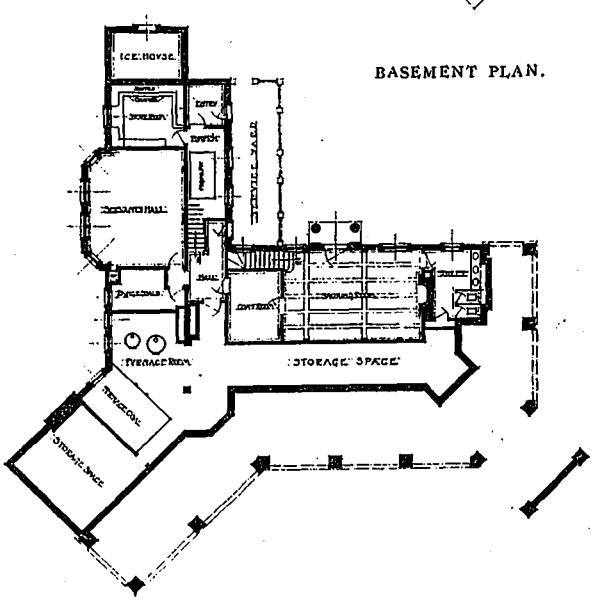
Hunt Club Building, Ottawa.—The building is located on a magnificent site on the Rideau River, about seven miles from Ottawa. The central feature of the club house is the large assembly hall, two stories in height, with easy connection to dining-room and service portion. The plan is of a "Y" type, giving a maximum amount of light to all parts of the building. The sleeping rooms for members are located above the dining-room, kitchen, pantries and servants' quarters being located in the rear wing. By taking advantage of differences in grade the smoking-room is located below the assembly hall, the floor being at the level of the stable yard in the rear. The building is of frame construction, the exterior being finished with cement stucco on metal lath. The overhanging roof of the verandah and porte cochere gives a very pleasing effect of shade.

The Royal Ottawa Golf Club.—The Royal Ottawa Golf Club is situated on the Aylmer Road about four miles from the city of Ottawa. The site is a commanding one, overlooking the links, the River, and in the distance the Laurentian Hills. The building is built of rough red brick with wide white joint, above which the finish is gray stucco. The roof is shingle, which have been allowed to weather to a warm gray tone. A broad verandah encircles the front wing of the building, while a dining verandah has been provided at the rear. The interior on the main floor has been devoted to the various club rooms and service, the upper floor being laid out for members' bedrooms and servants' quarters. Large fireplaces give a homelike appearance to the interior; the ceilings are beamed, and the walls panelled with open strap work. Large and numerous windows give an excellent view in all directions. The building is heated and extensively used in the winter as well as during the golf season.

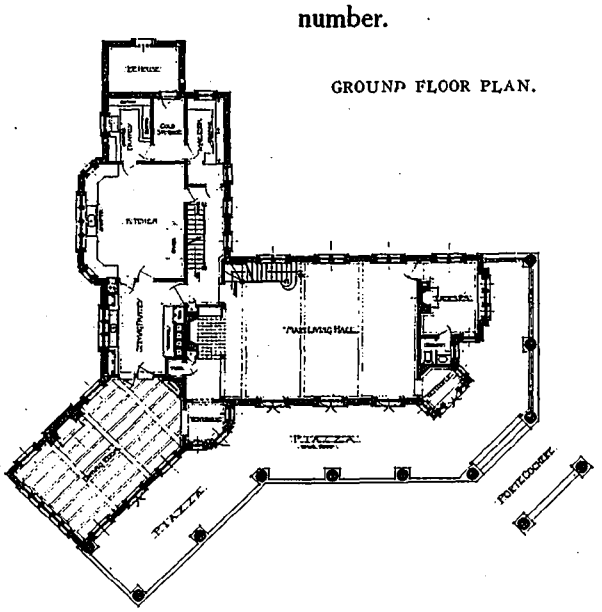
A few club buildings recently erected in the States are shown in this number.



SECOND FLOOR PLAN.

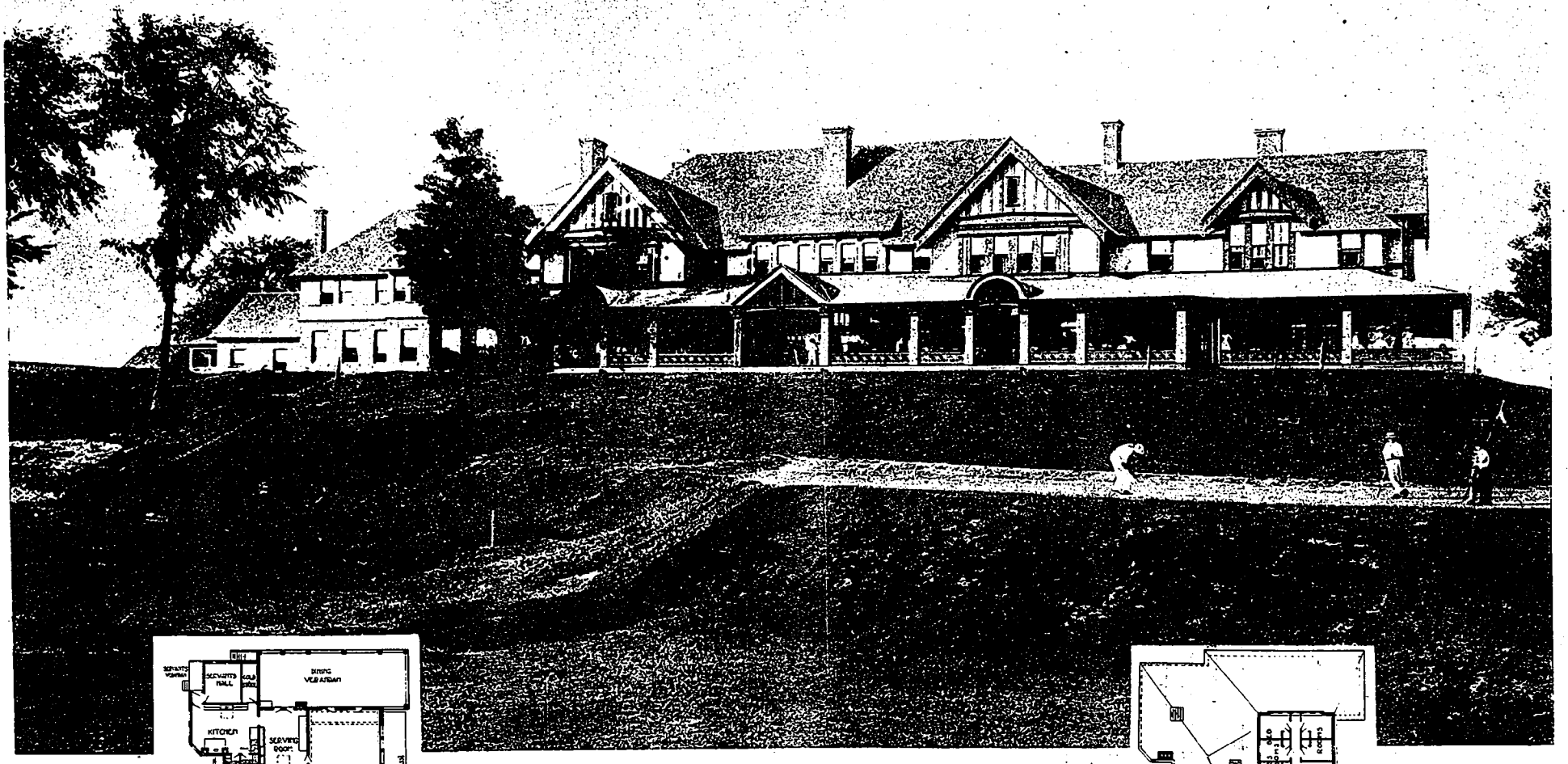


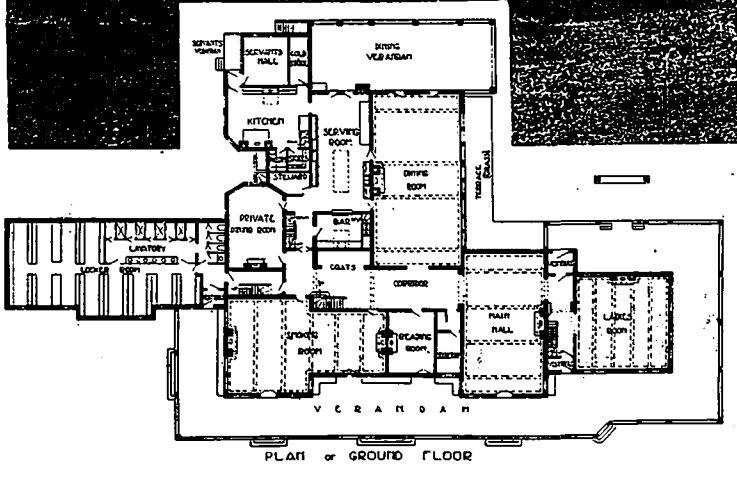
BASEMENT PLAN.



GROUND FLOOR PLAN.

PLANS OF OTTAWA HUNT CLUB, OTTAWA, ONT. WEEKS & KEEFER, ARCHITECTS.



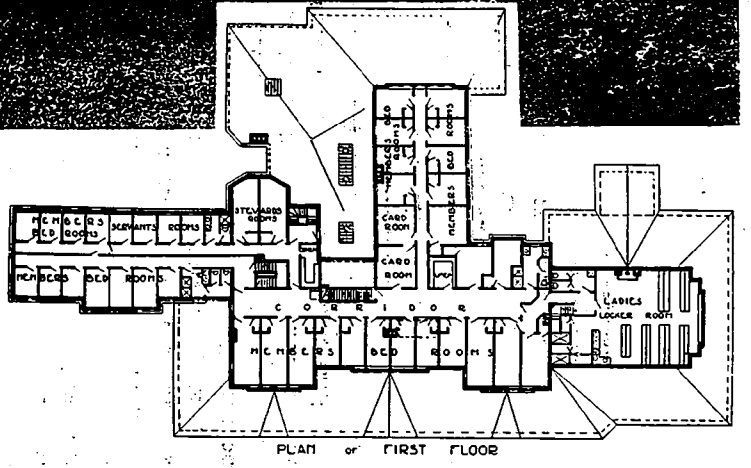


PLAN or GROUND FLOOR

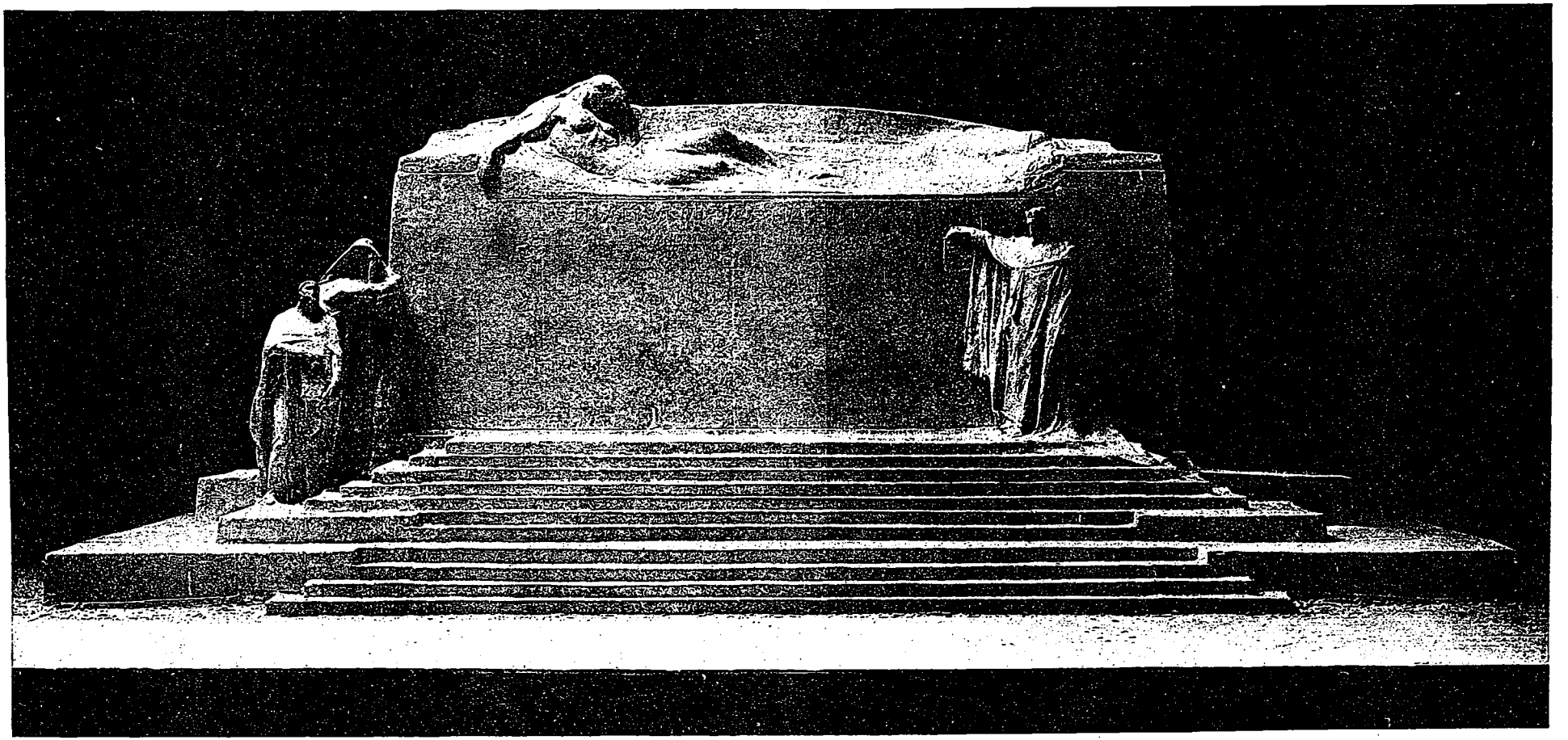
OTTAWA, ONT.

ROYAL GOLF CLUB,

HORWOOD, TAYLOR & HORWOOD,
ARCHITECTS.



PLAN or FIRST FLOOR



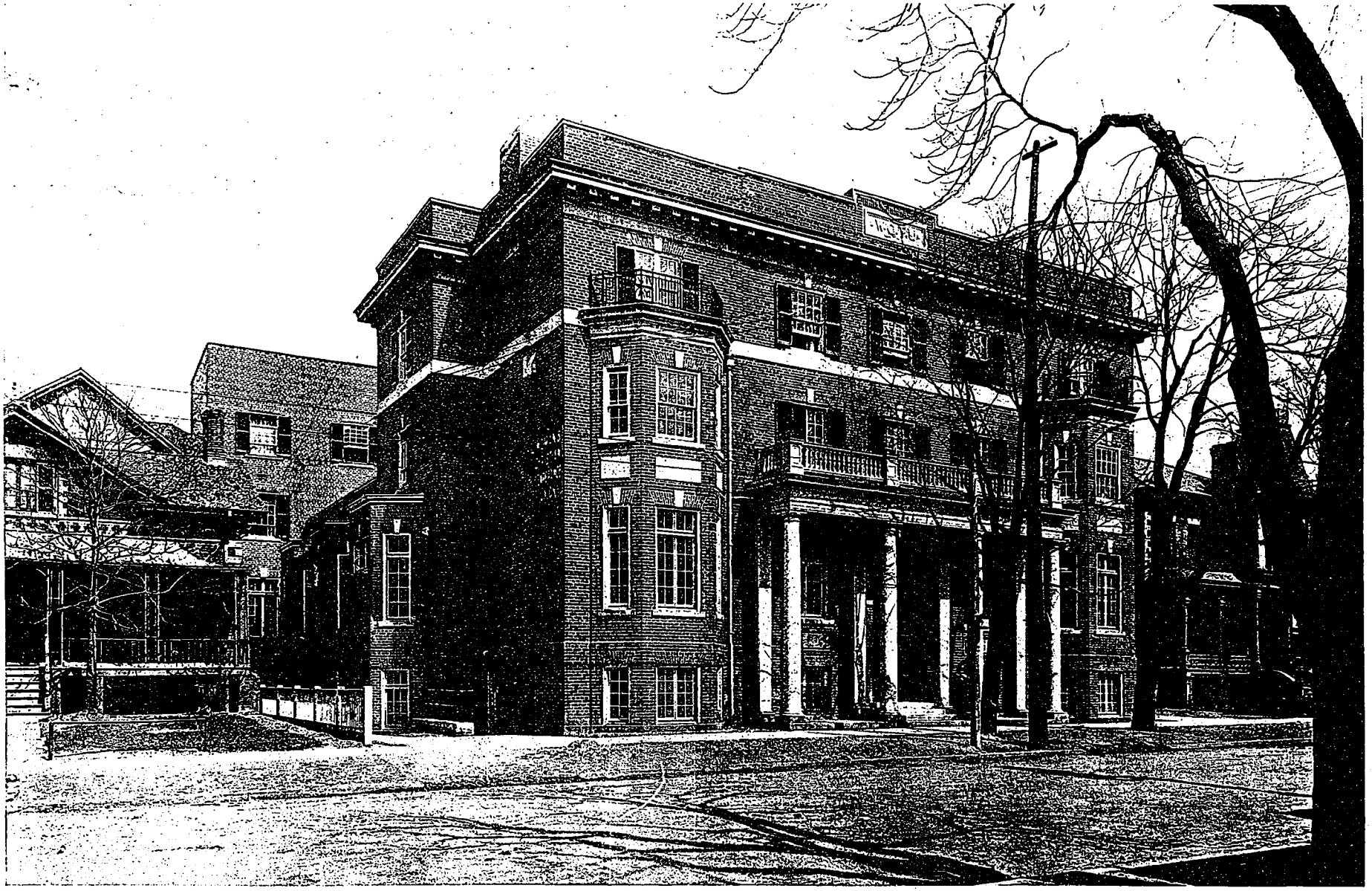
MEMORIAL TO THE LATE KING EDWARD VII.

The above design has been accepted by the Federal Government as a fitting memorial to the late King Edward VII. The site for the monument is on the slope of Parliament Hill, Ottawa, and will be fifty-five feet long, the lower figures ten feet high and the reclining figure fifteen feet in length. Walter Allward, of Toronto, won the competition over some forty contestants, of which only five were Canadians. S. Nicholson Babb, London, was awarded second prize.

The motive of the design is that of the King as a Peacemaker, the King standing in meditation, over him the spirit of Peace, an heroic figure carved in the stone, dreaming of the past, while the symbol of War (the cannon) lies half buried at her feet.

On the steps at the base of the wall stands the figure of Justice, erect, strong and reliant, ready to help and support Knowledge (which is Truth), in her task of civilizing and enlightening the world. On the wall are the words: "Through Truth and Justice he strove that War might cease and Peace descend o'er all the earth."

Mr. Allward conceived the idea of placing the King against a simple background of stone, so that the full expression of this figure might carry at a distance, at the same time affording an opportunity for a pose, kingly and thoughtful. The contour of the monument is such that it does not compete with the various towers and turrets, at the same time it is sufficiently high and broad to be a dignified and impressive mass placed above the level of the small details of the bridge, traffic, etc. The various parts unite to form one complete ensemble of harmony and dignity.



WOMAN'S CHRISTIAN TEMPERANCE UNION BUILDING, TORONTO, ONT.

BURKE, HORWOOD & WHITE, ARCHITECTS.

W. C. T. U. Building, Toronto, Ont.

BURKE, HORWOOD & WHITE, Architects

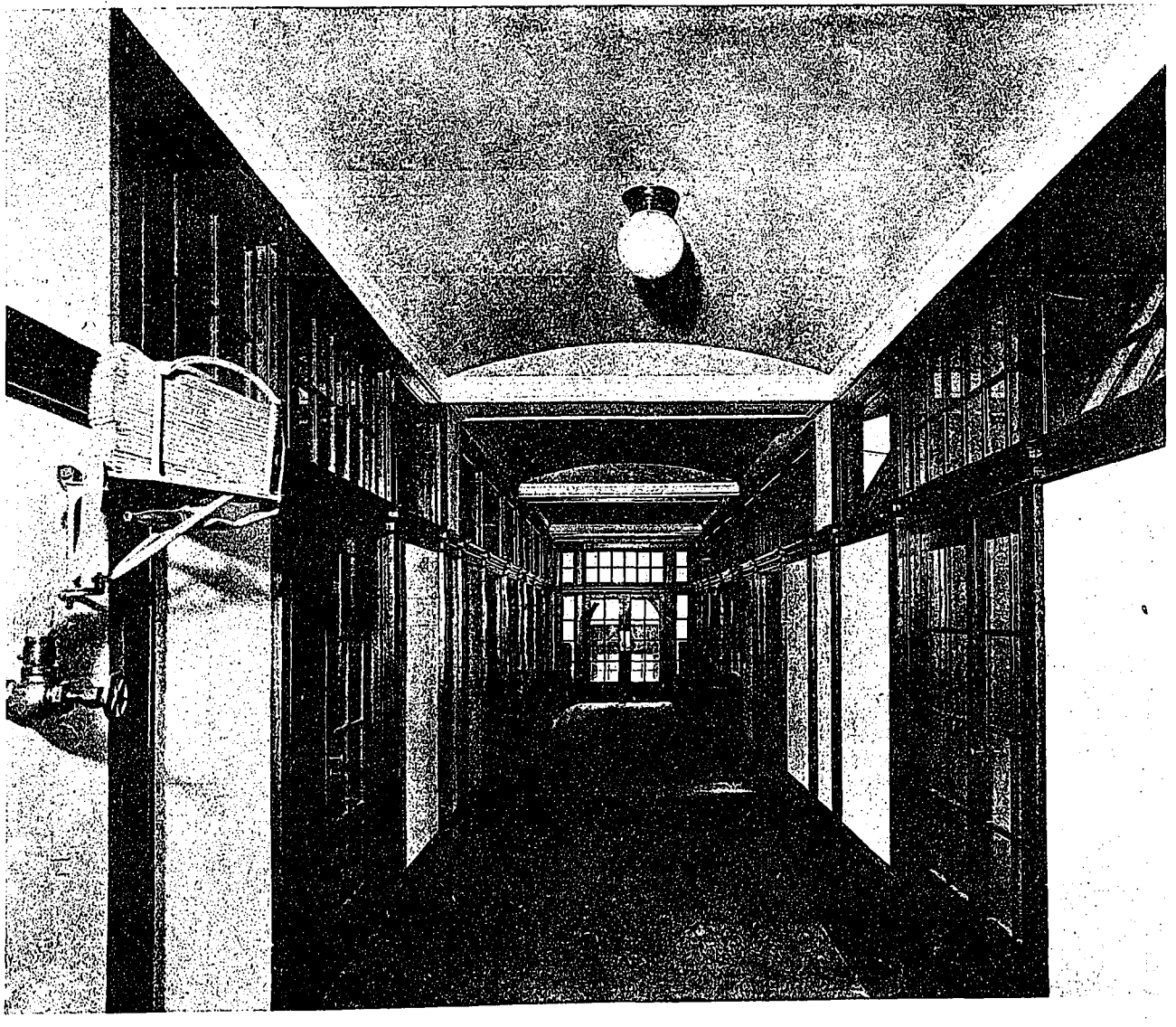
THE ONE prevailing idea in planning this Woman's Christian Temperance Union was to furnish a thoroughly up-to-date home for girls. Lodging benefits, educational facilities and physical culture, all enter into one comprehensive scheme. The character of the work accomplished by this organization and the vast need for revenue necessitates a building that is inexpensive and at the same time practical and wholesomely designed. This has been accomplished in a large degree by making the motive a Georgian treatment depending upon the simplicity of line and color for the general effect—a worthy example to emulate.

The interior is of deep red brick laid in English bond with large white mortar joints. The entrance portico of wood is painted white and opens into a vestibule of marble steps and wainscot, and walls of tinted paneled plaster.

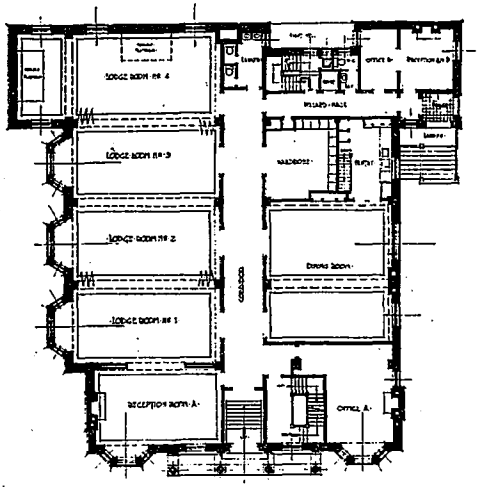
Upon the interior the basement walls are of brick with all woodwork in Georgia pine. Aside from the heating arrangements, this floor provides for the large gymnasium, shower baths and locker rooms.

On the main floor the corridor and dining-room are finished in oak, the lodge rooms in ash, and the reception room in mahoganized birch. The walls are finished in plaster possessing a champagne tint. Living quarters occupy the second and third floors with sitting rooms arranged for in the second story only.

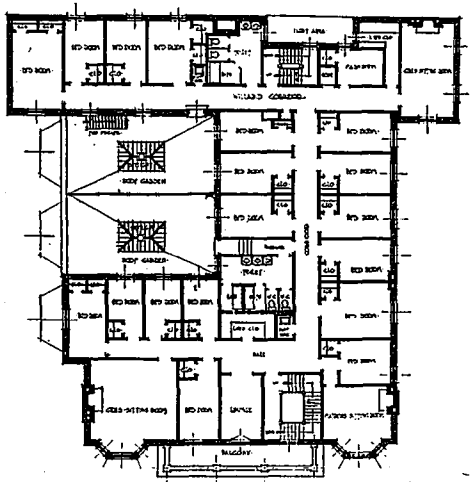
To the left of the entrance vestibule is the reception room, the administrative department directly opposite. One of the important features of the building is the large assembly hall, which can be divided into small lodge rooms by means of accordion doors. The cost of the completed structure was 16½ cents per cubic foot.



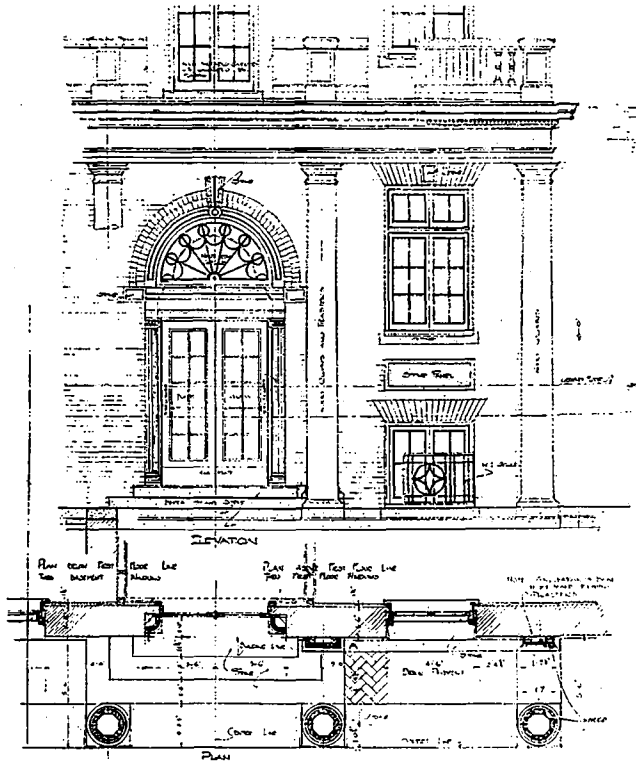
MAIN CORRIDOR.

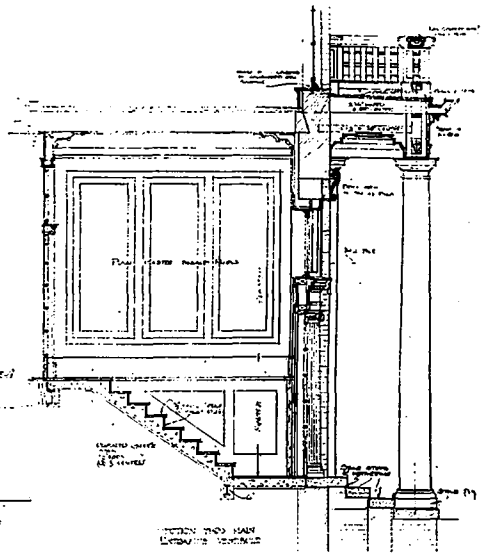


FIRST FLOOR PLAN.



SECOND FLOOR PLAN.

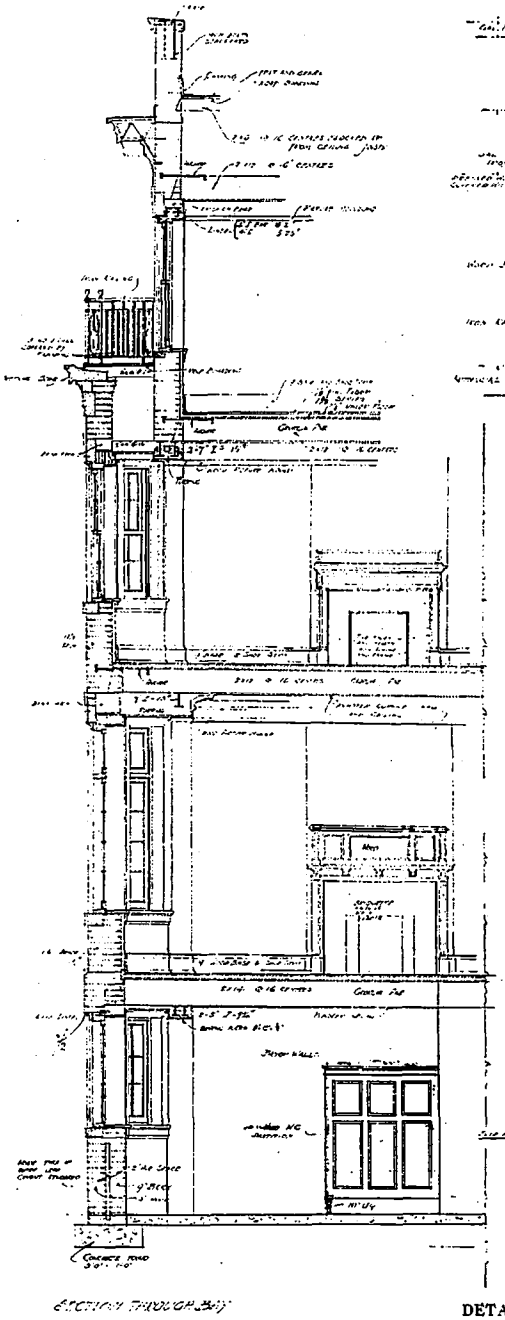




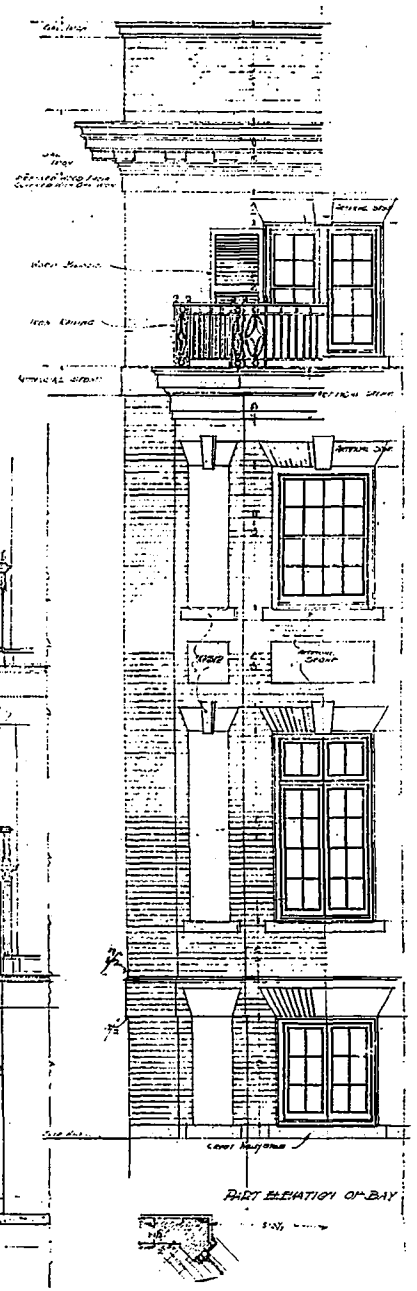
DETAIL OF MAIN ENTRANCE.

W.C.T.U. BUILDING,
TORONTO, ONT.

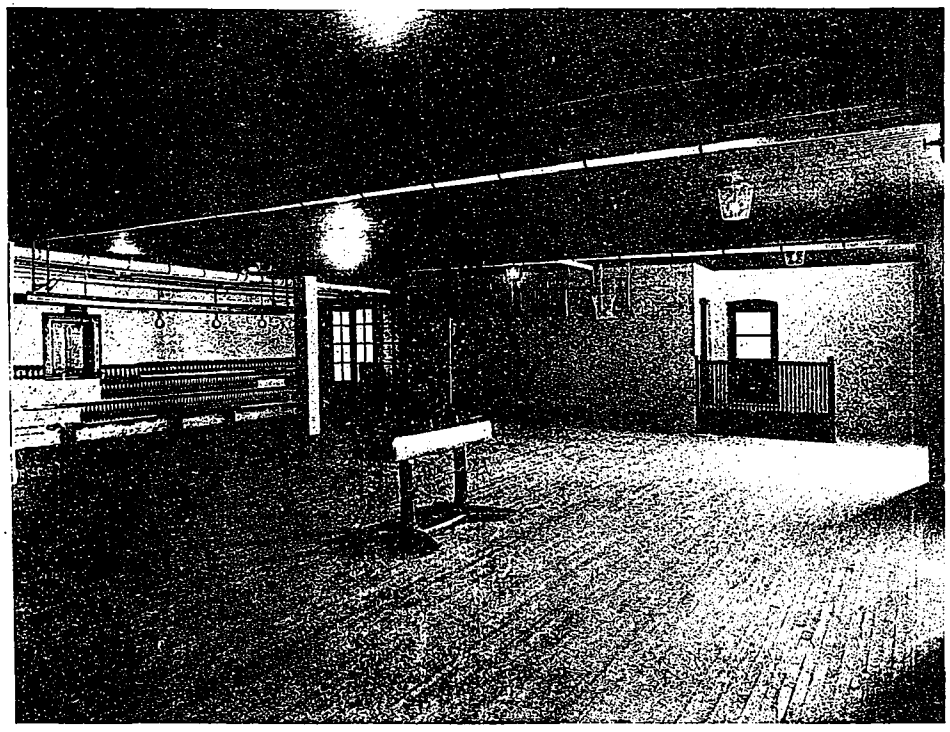
BURKE, HORWOOD & WHITE,
ARCHITECTS.



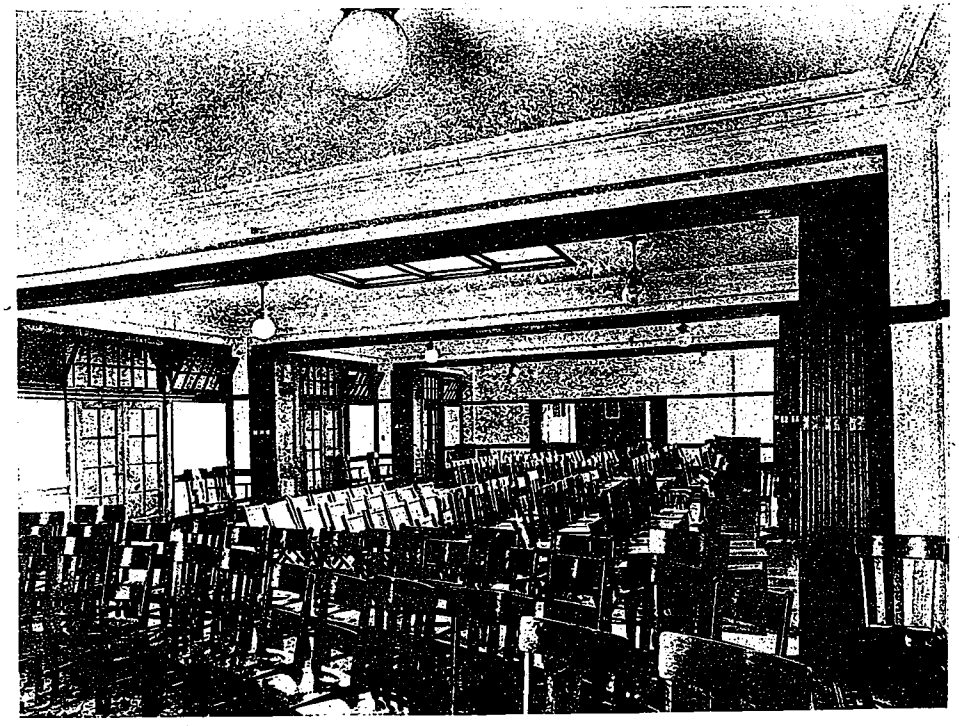
SECTION THROUGH BAY



DETAIL OF BAY.



GYMNASIUM.

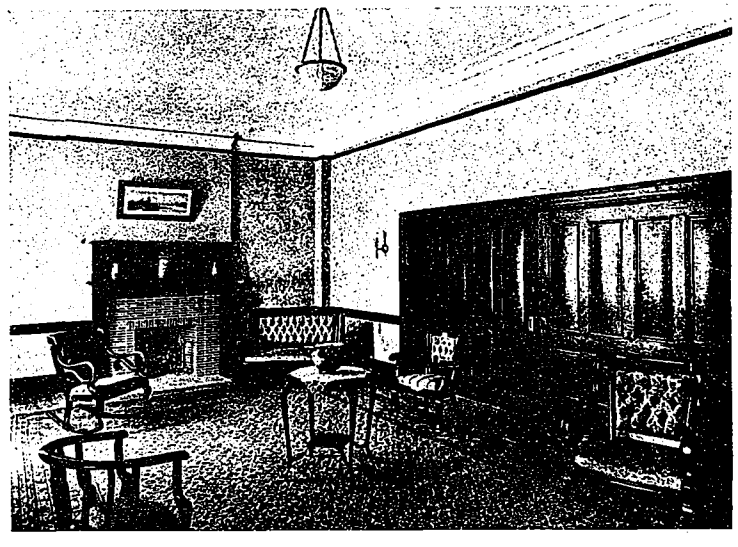


LODGE ROOM.

DINING ROOM.

W.C.T.U. BUILDING,
TORONTO, ONT.

BURKE, HORWOOD & WHITE,
ARCHITECTS.

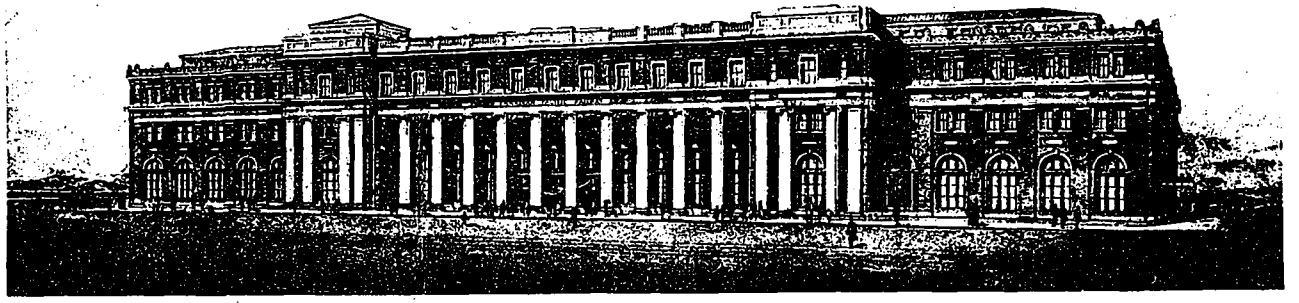


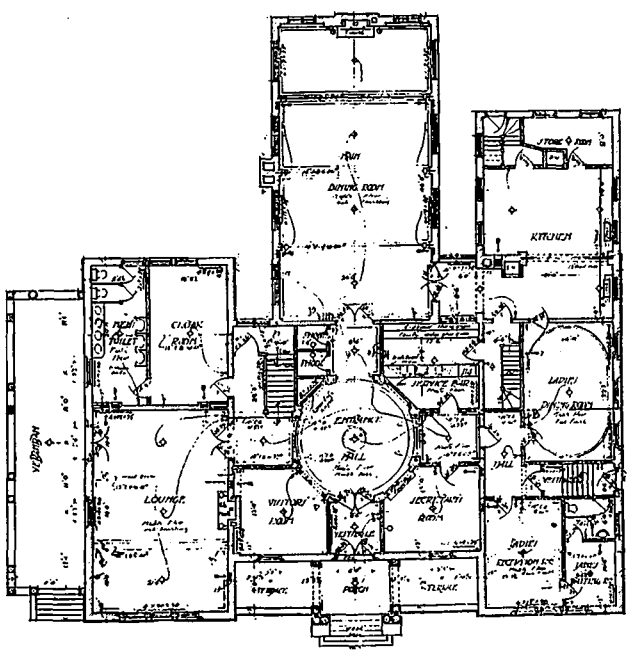
RECEPTION ROOM.

The Canadian Pacific Railway, in order to cope with the ever increasing traffic as well as anticipating the future growth of the city, is erecting a new terminal at Vancouver. The company has already begun the erection of the additions to the Vancouver Hotel, which are costing $2,000,000, and the appropriation for the construction of the new station is just short of $1,250,000. The building will be erected adjoining the present site, extending some 400 feet on Cordova street. The design calls for a treatment of brick and limestone, with a granite base. The comfort of the passengers has been considered from every point of view, and when completed, it will be one of the most up-to-date terminals in the world.

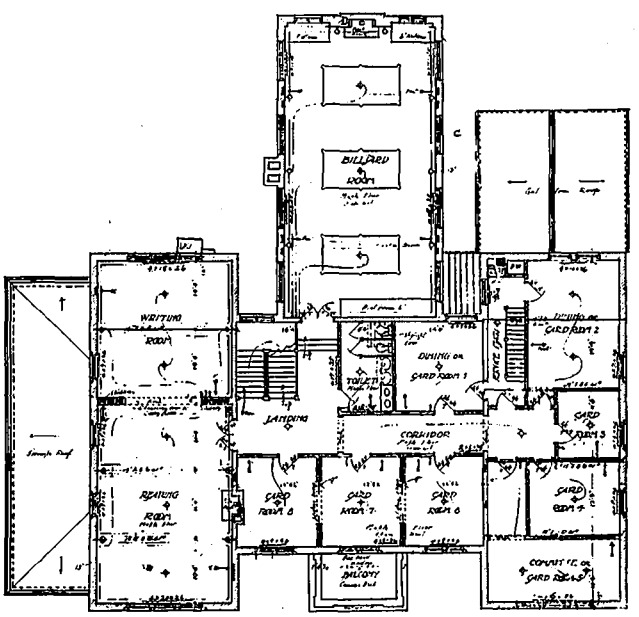
C.P.R. STATION AT VANCOUVER, B.C.

BAROTT, BLACKADER & WEBSTER, ARCHITECTS.





GROUND FLOOR.



FIRST FLOOR.

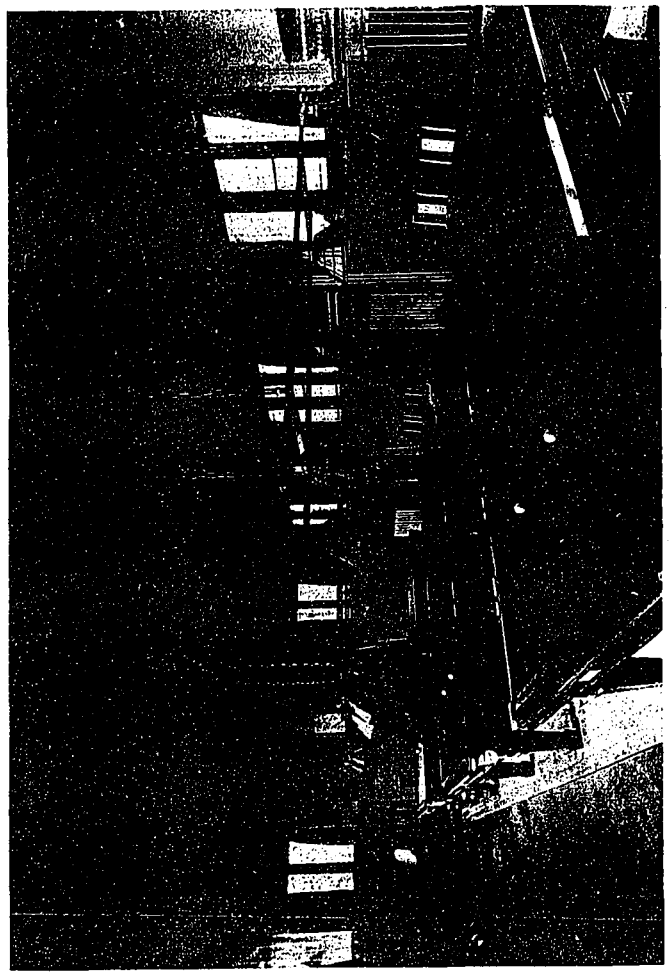
ASSINIBOIA CLUB, REGINA, SASK.

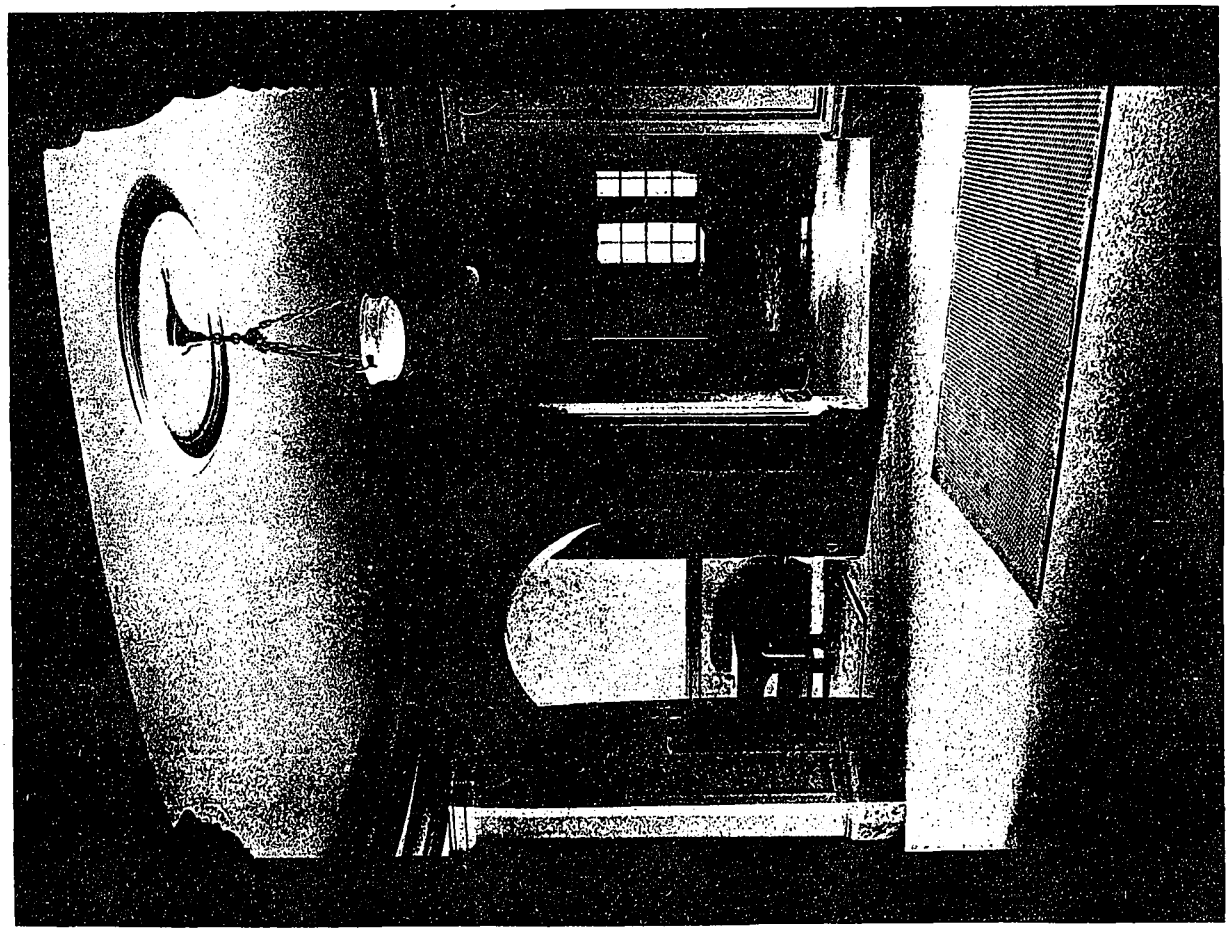
STOREY & VAN EGMOND, ARCHITECTS.

This club is recognized as one of the finest and best appointed clubs in Western Canada. The central feature of the ground floor plan is a circular rotunda giving access to the large lounge room, visitors' room, dining room, secretary's office, and ladies' department. The top floor is devoted to guests' bedrooms and the basement to help, stores, etc.

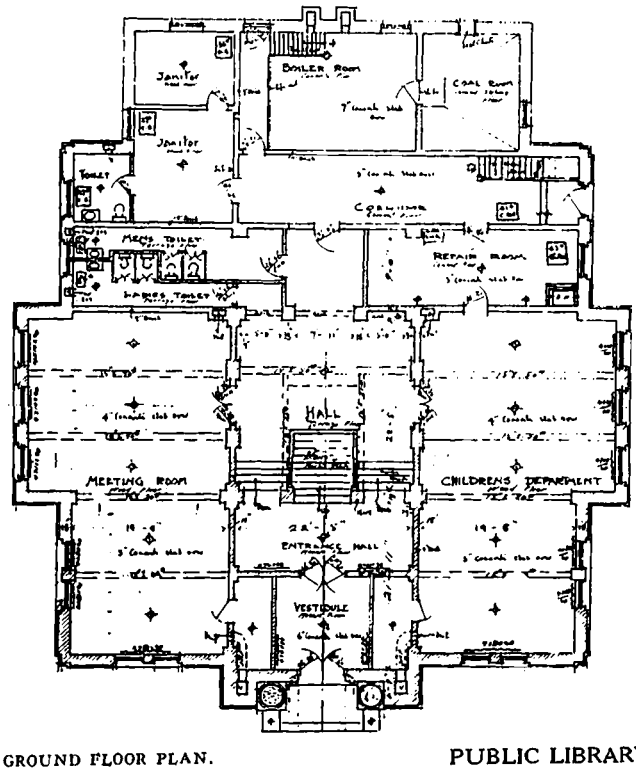
A principal feature in planning is the ladies' department on the ground floor, consisting of reception room, returning room and dining room, with separate ladies' entrance. Upon the interior the decoration is carried out in decorative plaster work, fumed oak finish, mosaic flooring, marble work, parquet flooring.

This building was erected at a cost of $65,000.00.

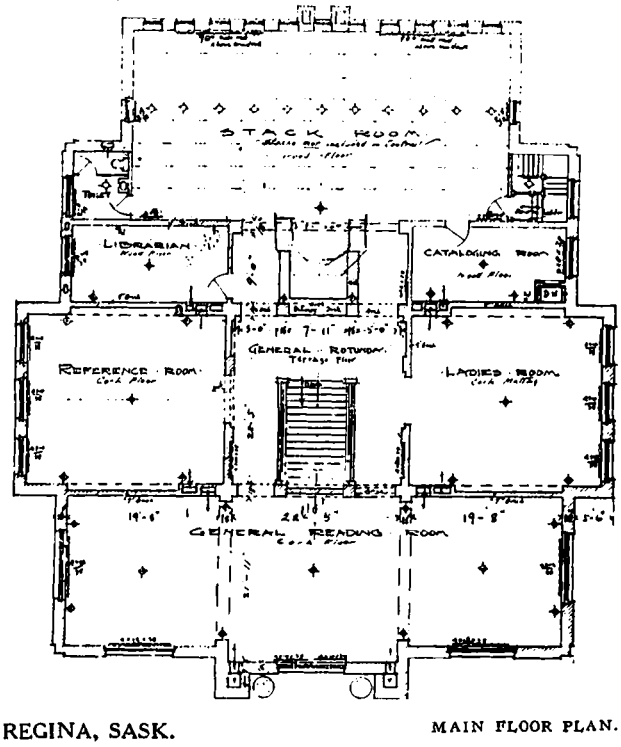




ROTUNDA, DINING ROOM AND BILLIARD HALL,
ASSINIBOIA CLUB, REGINA, SASK.
STOREY & VAN EGMOND, ARCHITECTS.



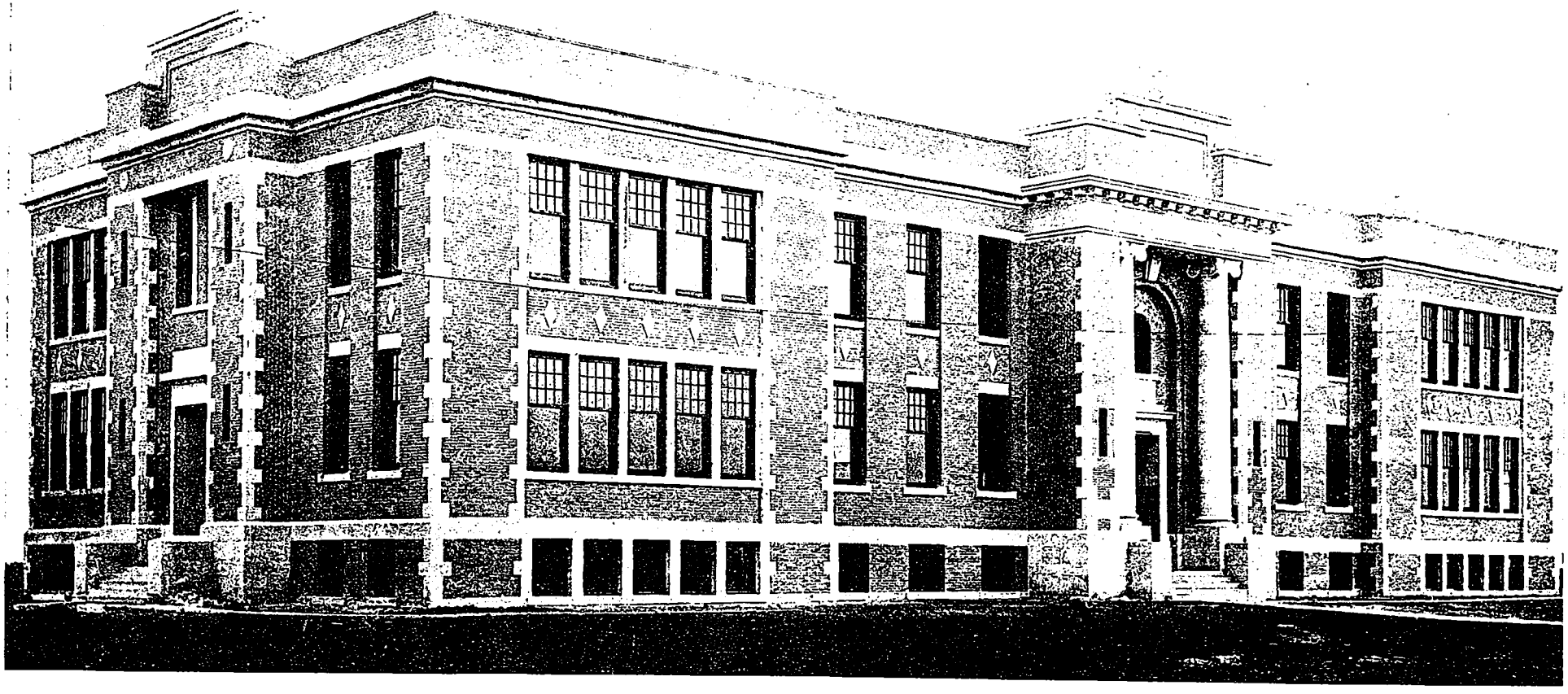
GROUND FLOOR PLAN.



MAIN FLOOR PLAN.

PUBLIC LIBRARY, REGINA, SASK.
STOREY & VAN EGMOND, ARCHITECTS.

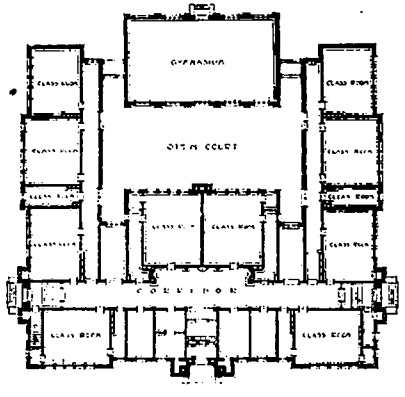
The exterior of the library is in stone and buff brick. The building is entirely fireproof with reinforced concrete construction; floors of cork and tile mosaic; stairway of marble. The central rotunda has a domed ceiling with skylight above, accessible to general delivery room, ladies' reading room, librarian, reference room, and general reading room. A heating plant is provided for in sub-basement at rear in addition to a vacuum steam heating system. The stack room is arranged so that a mezzanine floor can be added to double the capacity. . The library, which is specially noted for its practical arrangement, cost $50,000.00, and exemplifies the general progressive spirit of the Western cities.



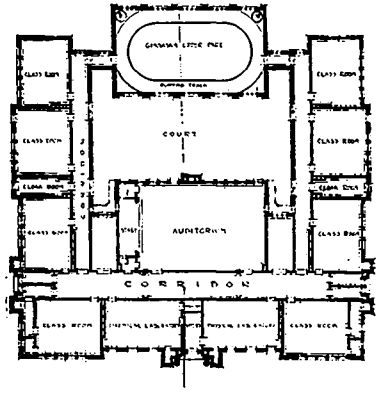
COLLEGIATE INSTITUTE, REGINA, SASK.

STOREY & VAN EGMOND, ARCHITECTS.

A large addition to this building is now under construction, with a plan for doubling the present capacity. The structure is fireproof with brick and stone walls and reinforced concrete floor construction; iron and slate stairs; vacuum steam heating; and exceptionally large gymnasium. This will be the largest collegiate institute in the Province of Saskatchewan, with an approximate size of 175 by 160 feet, two stories and basement in height. The total cost of building will be $200,000.



GROUND FLOOR PLAN.



FIRST FLOOR PLAN.

CONSTRUCTION

A · JOURNAL · FOR · THE · ARCHITECTURAL ENGINEERING · AND · CONTRACTING INTERESTS · OF · CANADA

FREDERICK REED, Editor

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

Entered as Second Class Matter in the Post Office at Toronto, Canada.

Vol. 6 Toronto, May, 1913 No. 5

CURRENT TOPICS

HUBERT SAVAGE, A.R.I.B.A., has opened up an office for the practice of architecture in the Haynes Block, Fort street, Victoria, B.C.

* * *

ON THE TOP floor of the new head office building of the Bank of Toronto, King and Bay streets, Toronto, is now located the new quarters of Messrs. Carrère, Hastings and Eustace G. Bird, architects.

* * *

THE NEXT convention of the American Society of Municipal Improvements will meet at Wilmington, Del., Oct. 7-10, 1913. The committee on fire prevention consists of Alcide Chaussé, chairman, of Montreal; Norman S. Sprague, of Pittsburg, Pa., and L. C. Willis, of Dallas, Texas.

THE SCHOOL BOARD at Victoria, B.C. has decided to call for competitive designs among the architects in reference to new buildings. This plan is to be in force after the present schools under construction by the board architect, C. E. Watkins, have been completed.

* * *

THE BUILDERS' EXCHANGE of Regina, Sask., has elected the following officers for the ensuing year: J. M. Taylor, president; D. Smith, vice-president; William Whiteford, secretary; H. Potts, George Minkley, A. Young, and W. A. Wilson, executive committee.

* * *

CORRECTION.—The plans on pages 154 and 155 of the April issue of "Construction," pertaining to the competition for the Winnipeg City Hall, belong to the perspective on page 157, and were part of the design submitted by Hugh G. Jones, architect. The plans on pages 156 and 157 should have been placed with the perspective on page 155 and credited to Brown & Vallance, architects.

* * *

THE FOLLOWING notice from Medicine Hat shows the rapid growth in some of our Western cities: The curling rink is being fixed up for sleeping quarters and the City Council will approach the Canadian Pacific Railway in regard to a supply of boarding cars to help meet the house shortage. The curlers abandoned curling for the balance of the winter in order to let the city have the rink.

* * *

CECIL S. BURGESS, A.R.I.B.A., formerly of McGill University, has accepted the position of superintendent of architecture for the University of Alberta, which is establishing a department of architecture. Work on the new buildings will begin in a short time, the site of which comprises 258 acres on the south shore of the Saskatchewan River. Mr. Burgess, before going to Montreal, was a practitioner in Edinburgh, London and Liverpool. He is a native of Scotland and a member of the Quebec Association of Architects.

* * *

THE VANCOUVER Chapter of the British Columbia Society of Architects will hold an exhibition, beginning on the evening of June 18, and continuing for a period of two weeks. The exhibition will consist of a selection of the best architects' work, executed and contemplated, in that section. In addition to the work of the local architects, the Architects' Chapter has arranged for a complete exhibition of the photographs of the buildings of the World's Fair now in the course of construction in San Francisco. The general committee in charge consists of Messrs. J. R. Putnam, W. T. Whiteway, T. Hooper, A. A. Cox, W. S. Painter.

WILLIAM PEARSON, president of the Winnipeg Housing and Town Planning Association, at a recent meeting of the Industrial Bureau of that city, announced that it was the intention of the association, if possible, to raise a million dollars which would be devoted entirely to housing, the work embracing the construction of a sufficient number of homes to take care of the ever-increasing population of Winnipeg. Numerous reforms that will tend to beautify the city, if carried out, were proposed.

In addressing the meeting, Mr. Pearson said:

"The city expresses the ideals and spirit of its people, and the citizens to a large extent are moulded by the physical characteristics of the city, that is by its building and general layout and the amount of attention it devotes to parks, play grounds, and public institutions of various kinds."

The Industrial Bureau has done magnificent work in the way of bringing industries to the city, and the association's duties are supplementary to the work of the Industrial Bureau in dealing with what he might describe as environmental conditions. He thought each one should cooperate for the beautifying of their surroundings and the health of the city and its home, thus working for a well planned city.

* * *

THE FOLLOWING notice, issued by Alcide Chaussé, Hon. Sec., will be of interest to the old and new members of the R.A.I.C.: The new charter of the R.A.I.C., adopted by Parliament on the 1st April, 1912, provided for the federation of the provincial associations of architects throughout Canada, recognized by the Royal Institute, and as such federation was effected at the fifth general annual assembly of the R.A.I.C., held at Ottawa, on the 7th October, 1912, all members in good standing of the five federated provincial associations are now members of the R.A.I.C. without paying any entrance fee or annual subscription. The old members of the R.A.I.C. in good standing and not members of any of the five federated provincial associations, remain members of the R.A.I.C., but they will continue to pay their annual subscription to the R.A.I.C. until such time they have joined one of the five federated provincial associations. The old members of the R.A.I.C. who are also members of any one of the five federated provincial associations will not have to pay any more annual subscriptions to the R.A.I.C. after the date of federation. The by-laws of the R.A.I.C. will be revised and amended to conform to the conditions created by the new charter, at the sixth general annual assembly of the Institute, which will be held at Calgary, Alberta, in September, 1913.

* * *

THE FOLLOWING JUDGMENT, handed down recently by Mr. Justice Lennox, of the High Court, in the action taken by Denison & Stephenson architects, vs. E. W. Gillett Co., Ltd., may prove of value to our readers. The case deals with the employment of a clerk of works and is clearly outlined in the judgment itself:

"Counsel for the defendants argued that this action should be decided upon the question of credibility. Determined by this standard, my judgment is unhesitatingly in favor of the plaintiffs. Even leaving out the important factor of probability—taking the naked testimony and the manner of giving it alone—I am convinced that Mr. Dobie instructed the plaintiff Denison to engage a clerk of works for the defendant company and agreed that the company should bear the expense. The evidence of the other plaintiff, uncontradicted, while he does not go to the length of saying that Dobie gave instructions at that time shows that he was interested in the wages to be paid and is strongly corroborative of Mr. Denison's evidence. I am satisfied, too, that whether from the discussion on the 15th of June, 1911, when the plaintiffs were retained or the terms of Exhibit 20, clause (c), Mr. Dobie realized all along that it was for the company to decide whether there would be a clerk of works, and if employed, employed at the company's costs.

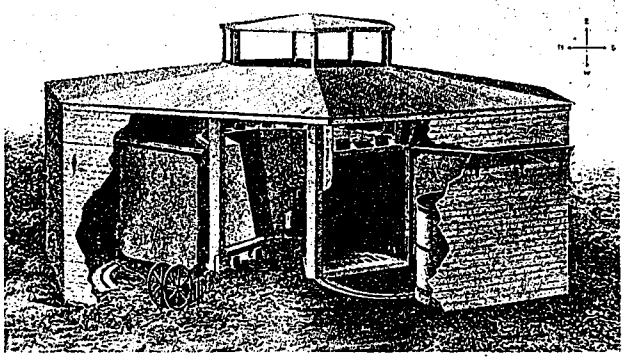
"The probabilities, however, are peculiarly cogent in this case. The defendant company had engaged a Chicago architect, Mr. Beman, and were to pay him 5 per cent. commission and his travelling expenses. The oftener Mr. Beman came to inspect the greater the cost. He was not to provide a clerk of works. Both Beman and defendants found that it would be better to have an associate architect in touch with local conditions, and necessary as a matter of law, and consequently, as defendants allege, an arrangement was come to between Beman and the plaintiffs to which the defendants were not parties, that the plaintiffs would perform for Beman the professional work which had to be done in Toronto, on a division of fees. It was no part of Beman's contract to engage or pay for a local superintendent or clerk of works—this is shown by clause (c) of exhibit 20, and is sworn to, and it might have been done with a good deal better grace by Mr. Beman. How, then, could Mr. Dobie imagine that the plaintiffs were to undertake this charge? As it was they visited the works at least 100 times, and presumably relieved the defendants from paying the travelling expenses of Mr. Beman for as many trips from Chicago. Probabilities? Even if Mr. Dobies' manner of giving evidence had been more satisfactory than it was I would find it difficult to believe that for weeks before there was any work to oversee he and Mr. Craig were time and again enquiring about a clerk of works, anxiously and repeatedly asking who was to pay for him and always answered in the same way, "we pay," and the more so as at the time it is sworn that the plaintiffs were bound to keep a man constantly there.

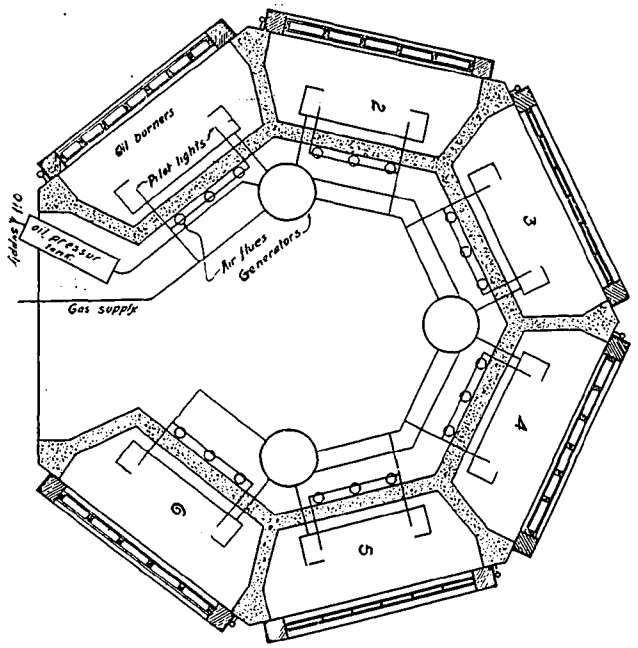
"There will be judgment for the plaintiffs for $1,100, with interest from the 22nd of November, 1912, and the costs of this action."

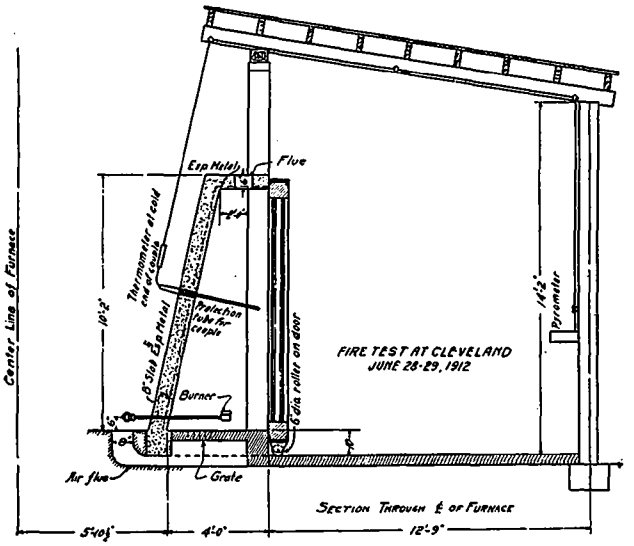
Fire Resisting Value of Plastered Partitions

THE FOLLOWING is a brief summary of tests recently held in Cleveland, Ohio, to show the relative fire resisting value of various typical plastered partitions. The work was under the supervision of V. D. Allen, building inspector, who appointed for the board of examination and report, L. H. Miller of the Bethlehem Steel Co.; Professor J. H. Nelson, Case School of Applied Science, and W. S. Lougee, architect. Figure 1 gives a general view of the testing furnace, while 2 and 3 show the plan and vertical cross-section.

The panel to be tested formed the outer wall of the furnace, being built into a frame made from nine-inch channels, lined with brick; the whole being hinged on the one edge and supported on a wheel rolling on a curved steel track at the other, forming a door which could be readily opened by means of a block and tackle without injury to the specimen. Heat was thus applied to the partition on one side only, and was







FIGURES 1, 2, AND 3.
GENERAL VIEW, PLAN AND VERTICAL CROSS SECTION OF FURNACE.

produced by a gas flame under perfect control. The furnace was provided with pyrometers and peepholes for examination of the heated side of the specimen during the test.

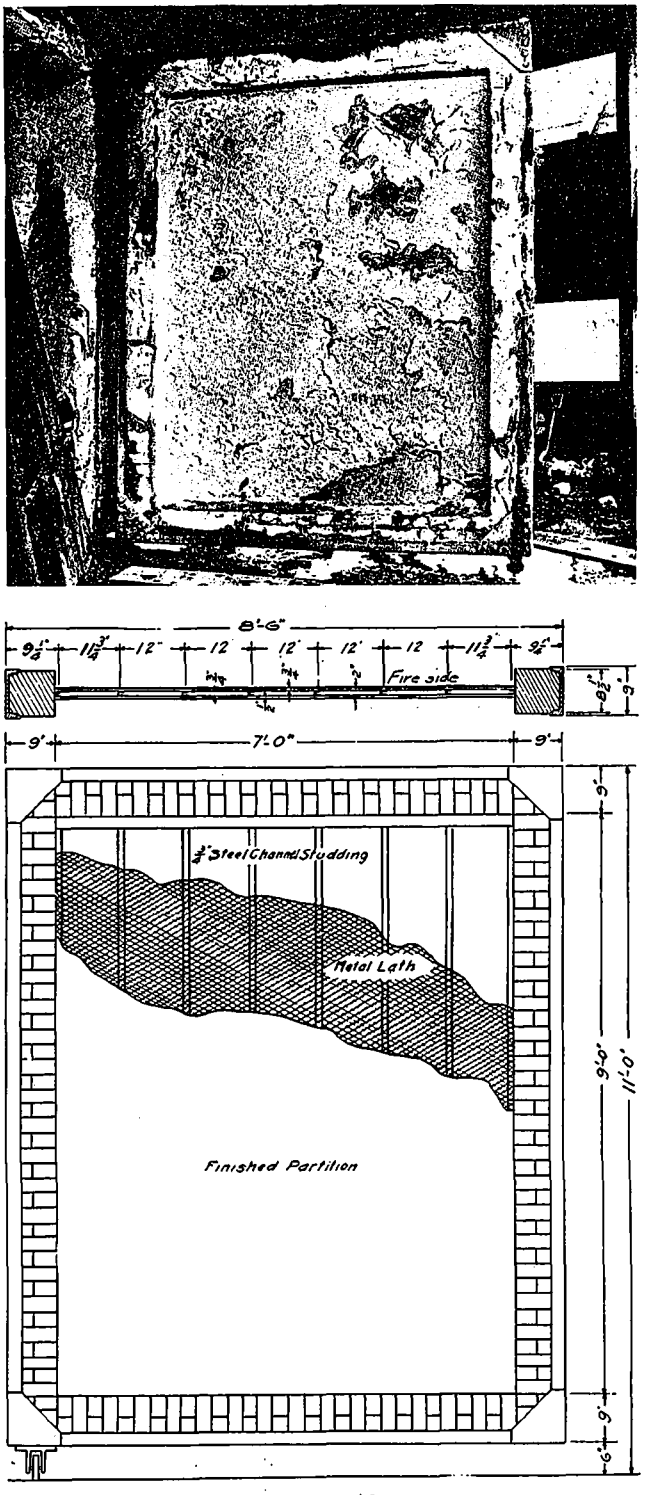
The method adopted is similar to that prescribed by the American Society of Testing Materials as a standard test for fireproof partition construction, which calls for a temperature raised to 1,700° F. during the first half hour and held at that temperature for one hour and a half. At the end of the heat test the partition is subject to a stream of water from a 1⅛ in. nozzle under 30 pounds pressure for two and a half minutes. The only variation from the rule worth noting is that the temperature at the end of the test averaged 1,900° F., providing the specimen was still in existence.

The description of the tests in this synopsis is given in the order of their merit. It should be stated, however, that the opinion of relative value is but a personal one. The full report, printed in booklet form, gives all the facts, enabling one to confirm or dispute the judgment here expressed.

Panel No. 3 was constructed with three-quarter inch rolled channel studs, spaced twelve inches apart and lathed on one side with 24 gauge metal lath wired to studs. Plastered to a solid thickness of two inches with cement mortar mixed one to two and a half, containing one-tenth as much hydrated lime as cement and one pound of hair in the scratch coat to each bag of cement.

This partition was not thoroughly dried out, and the explosion of confined steam threw off part of the outer plaster coat early in the test, but in spite of this, an almost perfect test resulted. After one hour the temperature of the outside of the wall was 280° F., while the temperature of the furnace was 1,840° F. The furnace temperature was finally forced to 1,929, the outside temperature not being taken, as the thermometers only registered 300° F. Owing to unequal expansion the panel deflected at the

centre 3½ in. toward the fire, but only opened one crack on the inside in doing so. The application of the hose reduced this deflection to 2¾ in. The water when thrown against the red hot plaster caused a portion of the outer coat to chip off, but not of sufficient quantity to expose the lath. The panel was



PANEL NO. 3.

left apparently in good enough condition to go through the same test a second time.

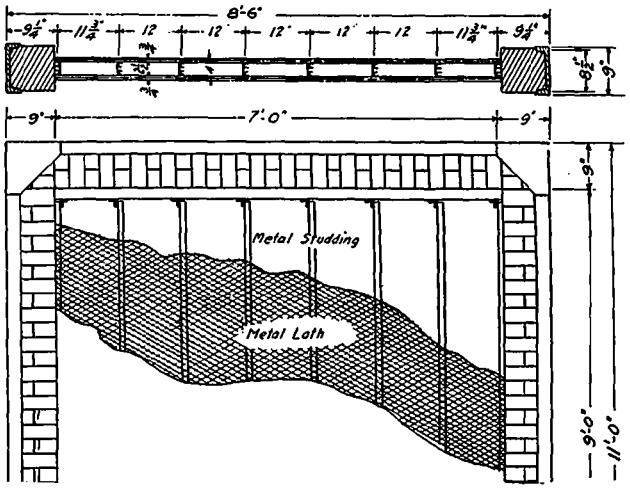
Panel No. 5 contained two and one-half inch 18 gauge sheet metal studs, spaced twelve inches apart and lathed on both sides with 24 gauge metal lath wired to the studs. Three coats of cement plaster formed a finish on each side of the partition.

The behaviour of this panel during the test was very similar to the solid metal lath and stud panel. It showed no less heat conductivity than the solid panel, and deflected somewhat more. The water test washed the plaster out sufficiently to expose the lath over a limited area near the hottest part of the flame. This exposure of the lath was the only phase in which the test was less satisfactory than that of the solid partitions. The highest pyrometer reading in the test was 1,976° F.—nearly 300 degrees above the specifications for a standard test. As the plaster did not disintegrate badly in the immediate vicinity of the pyrometer, it was evident that the fire where the plaster did disintegrate was much hotter than the instrument indicated.

Panel No. 4 was built according to the standard specification of the Associated Metal Lath Manufacturers for cement stucco outside walls. The outside of the wall, which was the side toward the fire in the test, consisted of 24 gauge metal lath attached to wood studs spaced twelve inches on centres. As herringbone lath was not used in these tests, it was necessary to place quarter-inch round rods between the lath and the stud in order to get key at the studs. The outer wall was plastered with three heavy coats of lime and cement mortar, the last coat being applied between the studs to the clinch of the first coat and the three totalling one and one-half inches in thickness. The inside of the wall had metal lath applied directly to the studs and plastered three coats of cement plaster.

After this test had run about forty-five minutes the gas generator broke, and the test was consequently discontinued until the next day. It was then completed with a due allowance for additional time necessary to heat the furnace. The maximum heat attained inside the furnace was 1,943° F., at which time the average temperature on the opposite side of the partition was about 300°.

When it is considered that the temperature of a wood fire varies between 800° and 1,100° F., and that the partition was built with wood studs and tested at a temperature that varied from 1,100° to 1,943° for over an hour and three-quarters, the result of this test is astonishingly good. After the fire and before the water test the partition was apparently in very good condition, but the water test exposed the lath over a third of the wall area. The washing out of the plaster was far greater than in the case of the hollow metal lath and metal stud partition, and was probably due to the greater amount of lime used in the plaster. Removal of the lath to examine the studs showed that they charred away by distillation to a depth of perhaps half an inch from the red hot inner face, but were still in good enough condition to support a floor. This was doubtless due to the absence of an air current between the studs. The key of the plaster on the outside of the wall was not injured.

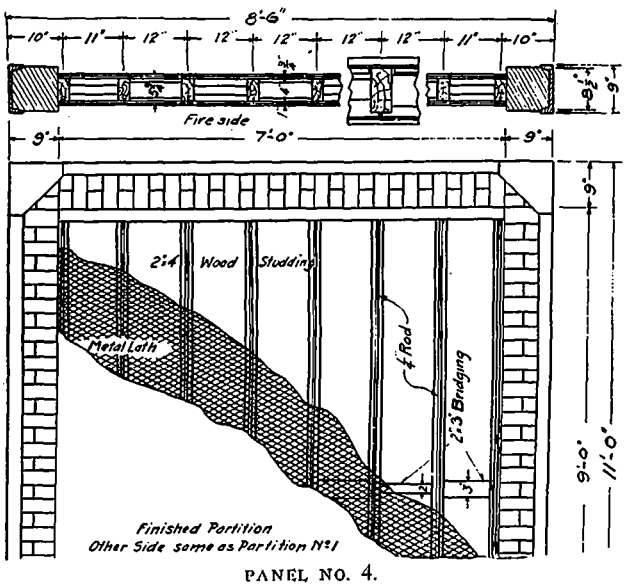


PANEL NO. 5.

Panel No. 1 had 24 gauge metal lath on both sides of wood studs spaced twelve inches apart, and plastered with three coats of cement plaster.

In general this panel was tested similarly to the cement stucco panel, although the result was not as good. The cracks which opened during the test became large enough to admit air to the studs so that later on the combustion of the studs themselves occurred, instead of combustion of the gases distilled from the studs as they reached the open air through the cracks. As the decrease in the amount of these escaping gases was first noted one hour and thirty-eight minutes after the start of the test, it is probable that this was approximately the time at which the stud took fire. The application of the water only exposed the lath over a small area. The partition after both the fire and water test was still an efficient fire stop, although during the last half hour of the test it was not in condition to support a floor.

This test is of particular interest to school and apartment house architects, as metal lath is commonly used in these buildings as a fire retardant. A partition which will hold the floods during a severe fire lasting an hour and a half and will act as a fire



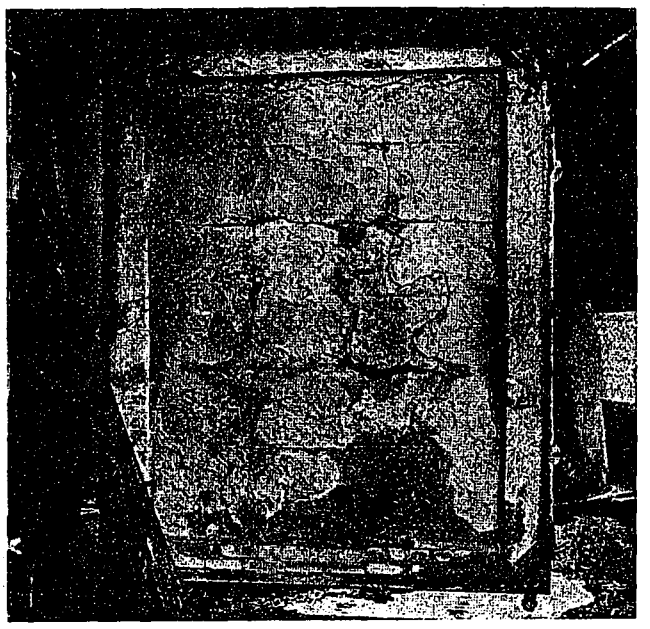
PANEL NO. 4.

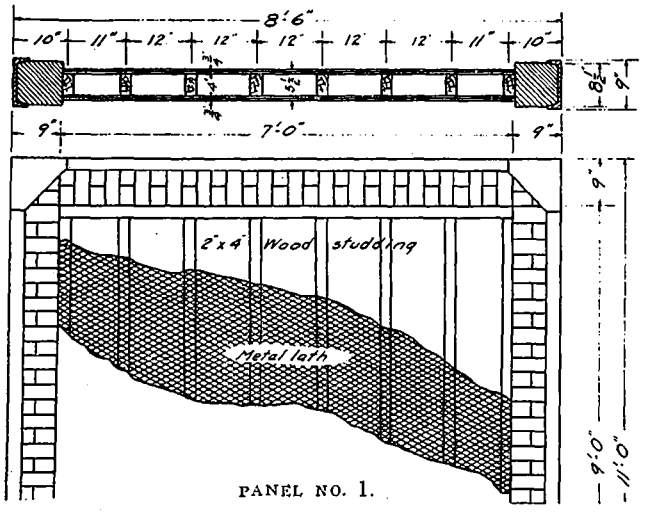
stop for more than two hours is sufficiently fireproof to eliminate danger to life in all cases, and to save property in most cases.

Panel No. 2, of wood lath on wood studs, and the one following, were not tested with the idea that they were fireproof, but in order to get a comparison between the semi-fireproof construction made with metal lath and wood studs and the ordinary type of combustible construction.

The construction consisted of wood studs spaced 16 inches apart, lathed with wood lath and plastered two coats, the first coat of hard wall and the second a sand-lime finished with grounds ¾ in. thick.

Observations on this construction were not as satisfactory in determining facts as on the panels previously discussed. In the cases of the fireproof panels an observer could state with certainty that had the fire been stopped at any time during the test the panel would not have further depreciated. In the case of the partition formed with metal lath on wood studs,





PANEL NO. 1.

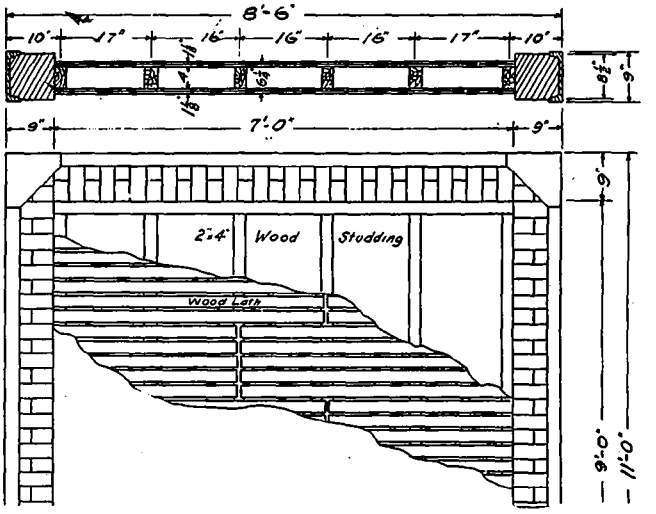
observations on the discharge of gases resulting from wood distillation showed that the studs did not take fire until the test had been on for about an hour and forty minutes. It is probable that the injury to the partition, would have stopped with the turning off of the flame, had the test been stopped previous to that time.

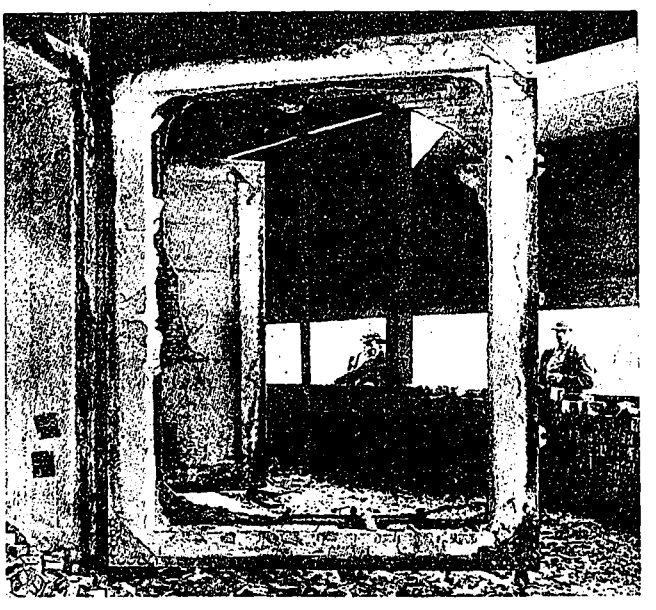
In the case of the panel of wood lath and wood studs, it is hard to determine just when the stopping of the test would have prevented the total destruction of the panel. Fifty-two minutes after the test started part of the plaster dropped off the inside of the panel because the wood lath supporting it had totally burned away at that point. It is therefore probable that the partition was doomed on account of combustion of the framing starting about thirty minutes after the test started. The destruction of wood framing was practically complete an hour and twenty minutes after the test started, yet the outer coat of plaster stood, with the exception of the formation of one hole, throughout the balance of the test. The opening of the door caused the complete collapse of the plaster.

Panel No. 6 was exactly like the one constructed of wood lath and studding, except that plaster board was substituted for wood lath.

This partition was under test when the failure of the gas supply occurred as described in the discussion of the test of the cement stucco panel. The test had been on for twenty-four minutes, and fortunately the destruction of the panel through internal combustion had not started, so the test could be completed next day.

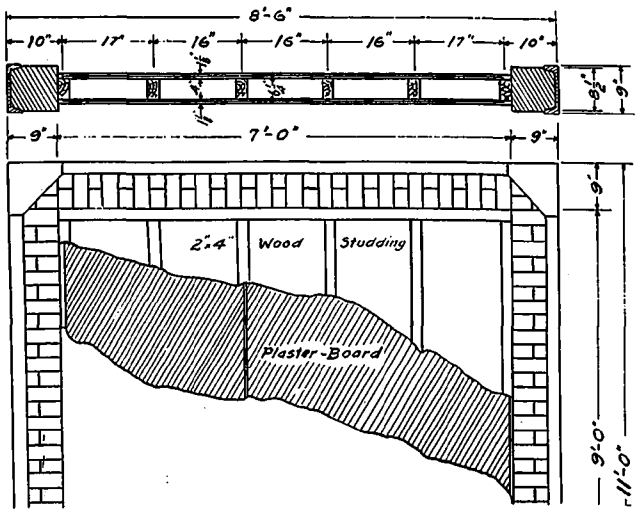
After twenty-nine minutes of test—with allowance for the interval—the plaster board burned off the fire side, showing the wood structure of the panel on fire. This is a poorer showing than that made by wood lath where the same incident occurred after fifty-two minutes. The first hole in the outside of the partition occurred at fifty-eight minutes, as contrasted with one hour and twenty-nine minutes for wood lath. The test was stopped at one hour when only half through, and as in the case of the wood lath and stud test, the partition collapsed when the door was opened.

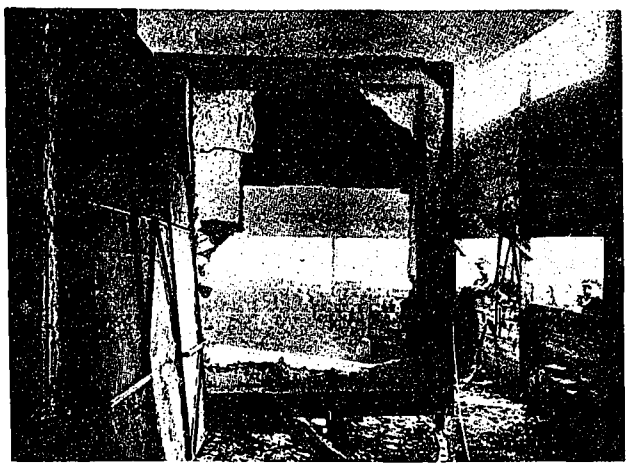




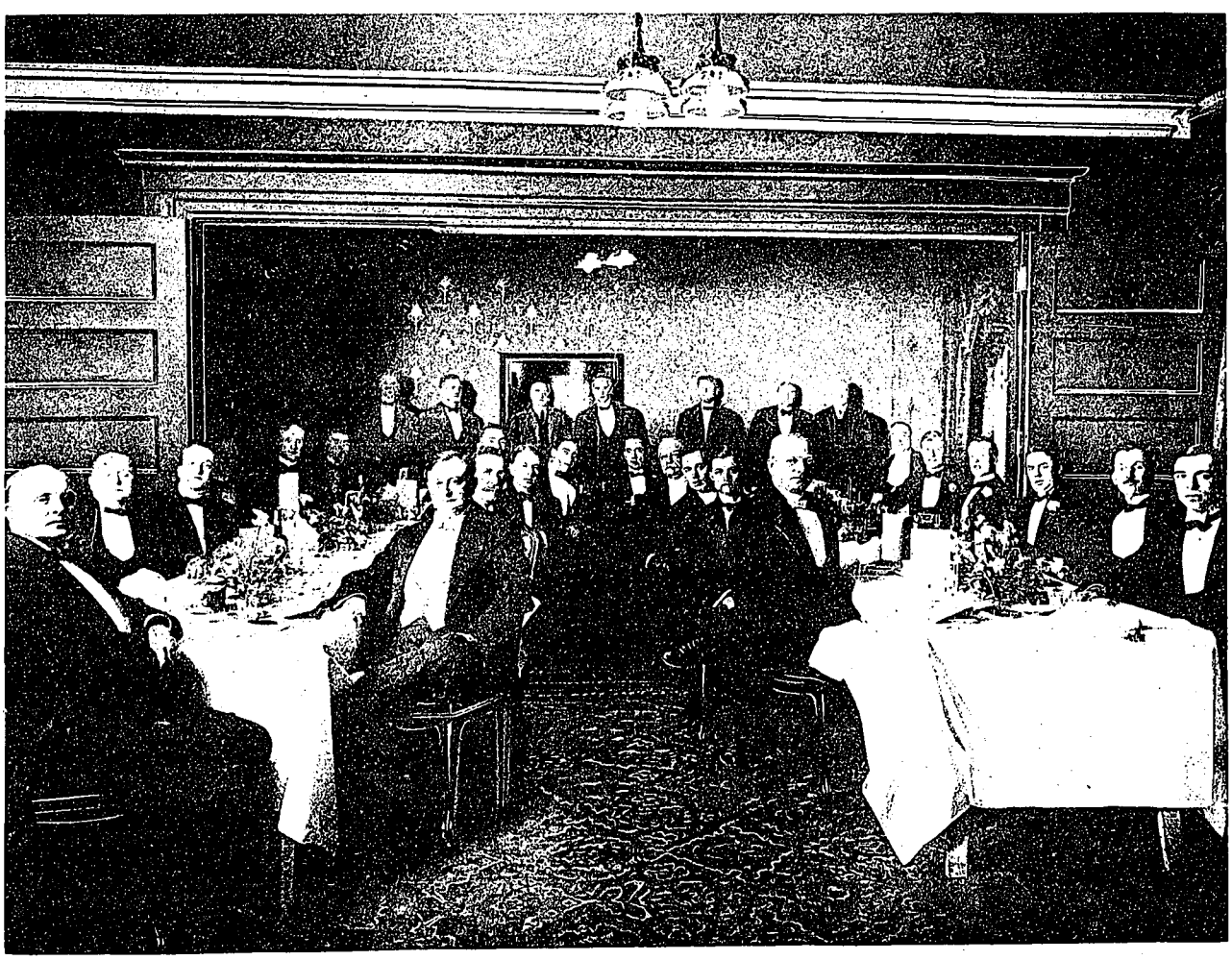
PANEL NO. 2.

The complete failure of plaster board in this test seemed to be due to the fact that there was no direct bond between the plaster on the wall and the plaster in the board, except through the intervening paper felt. When, therefore, the temperature of the wall became high enough to char this felt the separation of the plaster from the wall was complete.



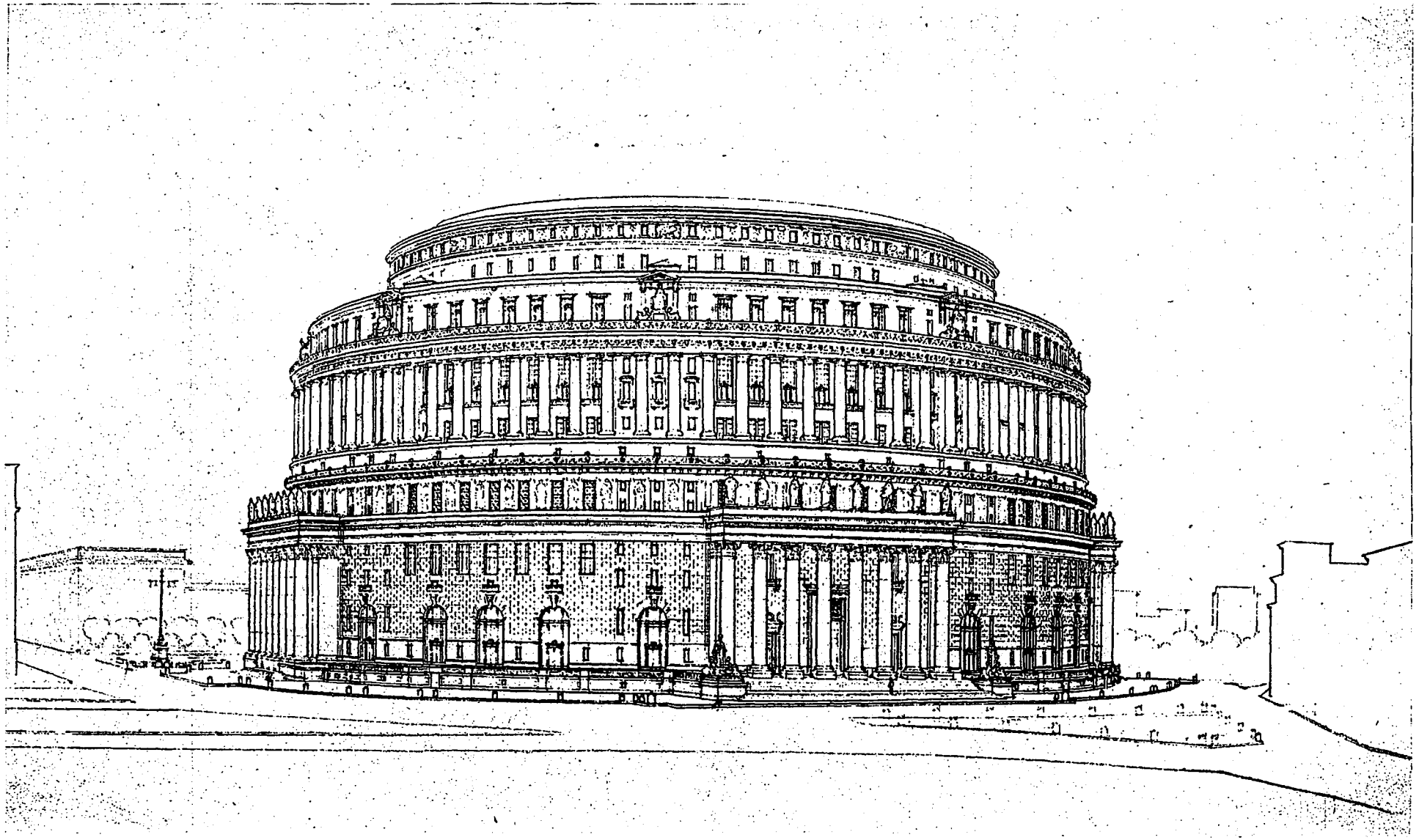


PANEL NO. 6.



All parts of Canada were represented at the third annual banquet of the Sales Department of the Canada Cement Company Limited, held at the St. Regis Hotel, Montreal, on April 12th.

In addition to the felicitations common to such occasions, the remarks of F. P. Jones, general manager, concerned a subject of interest to the public, as well as to the members of the Company. When the Company was organized four years ago, one of its first corporate ambitions was to reduce the cost of cement to the consumer, without sacrificing a high standard of quality. The fact that this ambition has been realized, to the point where the price of the company's product is lower than cement was ever before sold for in Canada, was brought out at the banquet, to the thorough satisfaction of those present. The rapidly growing demand for cement, and various improvements in the company's facilities for supplying it, were also touched upon. Mr. Jones presided, as toastmaster. Senator W. C. Edwards, of Ottawa; Hon. D. Murphy, of Ottawa, and Mr. P. H. Wilson, of New York, were present as the company's guests. Members of the sales department were present as follows: Montreal, W. H. Ford, general sales manager; J. A. Lapres, assistant sales manager; G. Charette, L. A. Charpentier, C. C. Lapierre, A. H. McGuire, W. T. Newmarch, W. A. Toohey, salesmen; Toronto—J. D. Johnson, sales manager; E. W. Coles, G. G. Dunlop, F. A. Robertson, L. J. Wookey, P. A. M. Wright, salesmen. Winnipeg—W. P. S. Johnson, sales manager; H. F. Beresford and S. W. Beresford, salesmen. Calgary—Geo. N. Gorman, sales manager; J. L. R. Gorman, John Bovard, salesmen; W. O. Bovard, special travelling representative. Heads of other departments were present as follows: A. C. Tagge, general superintendent; L. S. Bruner, manager of publicity; H. S. Van Scoyoc, inspecting engineer; J. A. V. Dube, traffic manager; J. V. L. Rianhart, purchasing agent.



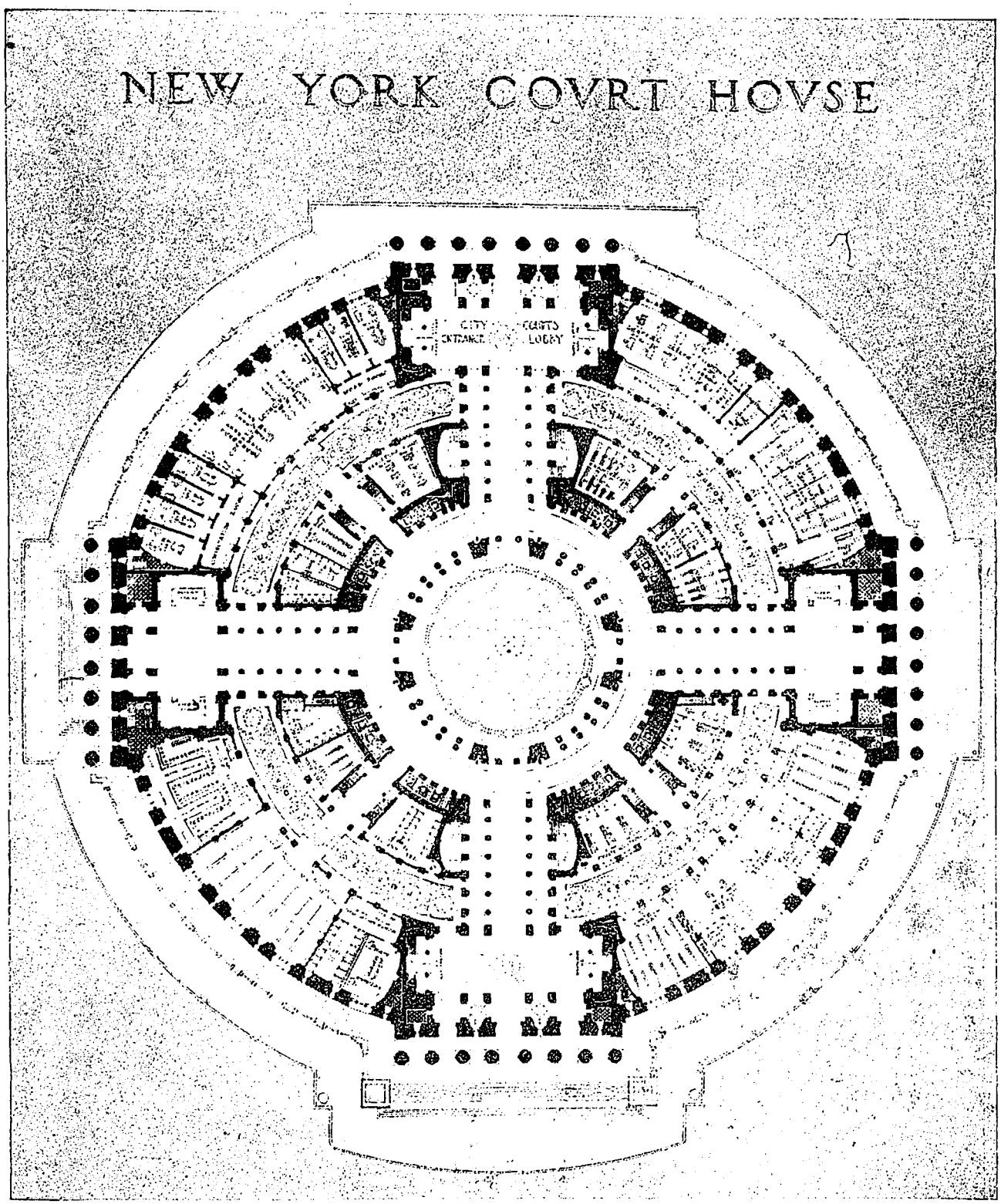
Reproduction made from latest model.

PERSPECTIVE VIEW—FIRST PRIZE DESIGN.

(From The American Architect.)

COMPETITION FOR NEW YORK COUNTY COURT HOUSE.

GUY LOWELL, ARCHITECT.

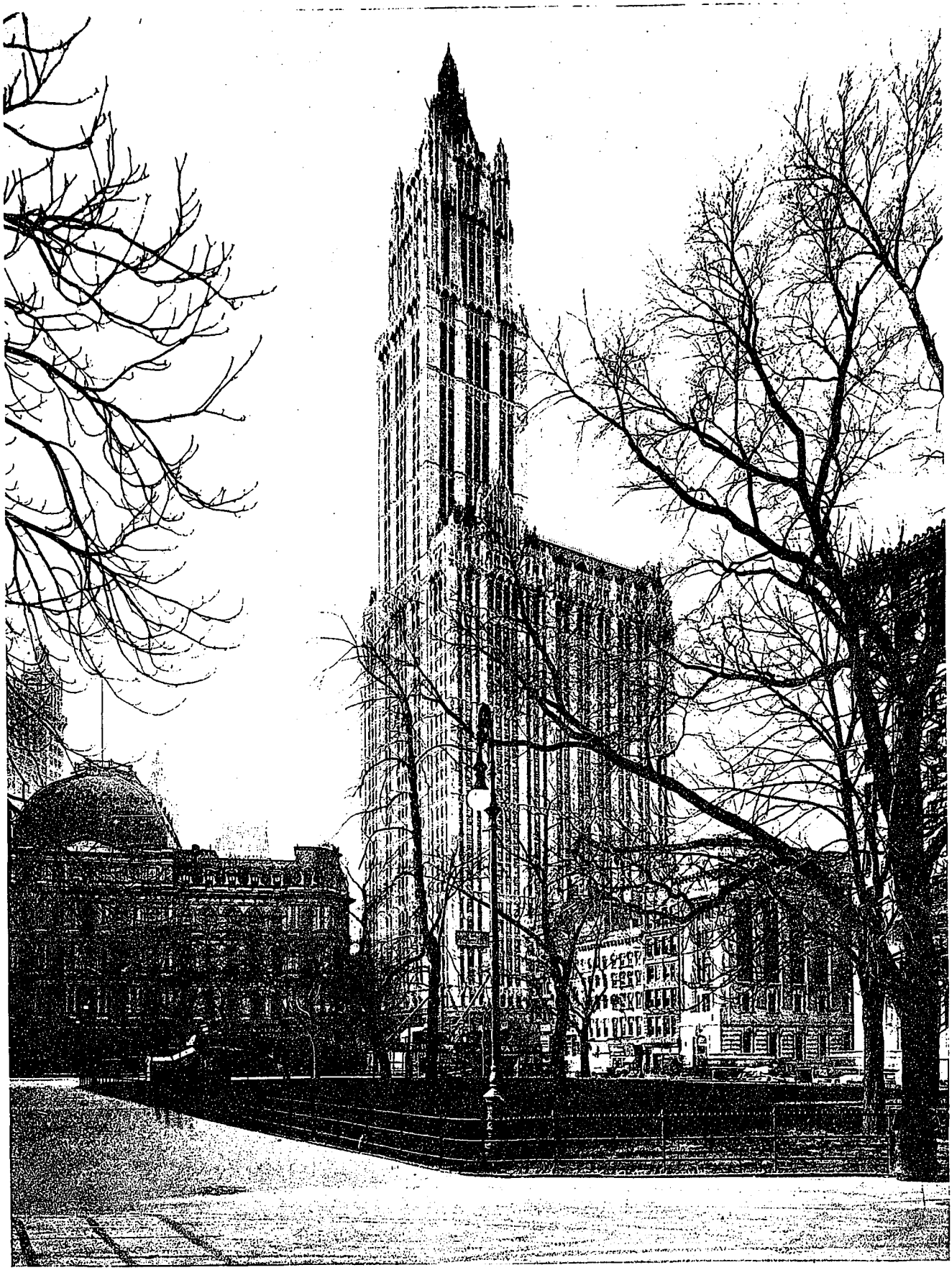


GROUND FLOOR PLAN.

COMPETITION FOR NEW YORK COUNTY COURT HOUSE.

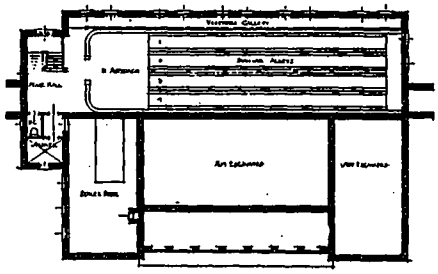
FIRST PRIZE DESIGN—GUY LOWELL, ARCHITECT.

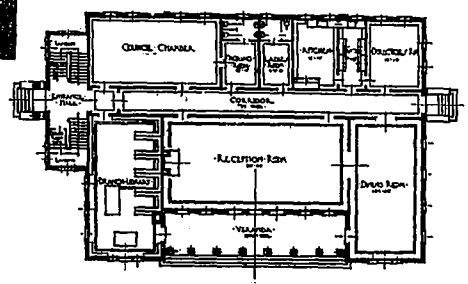
Mr. Lowell's accepted plan for the New York Court House has been universally approved on account of the facility with which all the work can be carried on. The building is accessible from all directions with spacious corridors leading to the central lobby around which are arranged the elevators. One entire floor accommodates the city court, four floors the supreme court, and another floor the library and dining rooms. The building will cover approximately 120,000 square feet of ground.

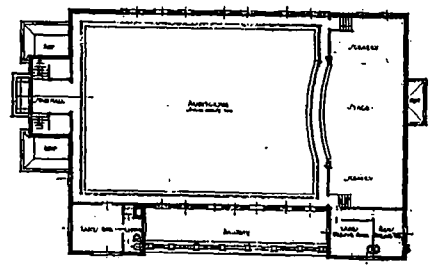


WOOLWORTH BUILDING,
NEW YORK CITY, N.Y.

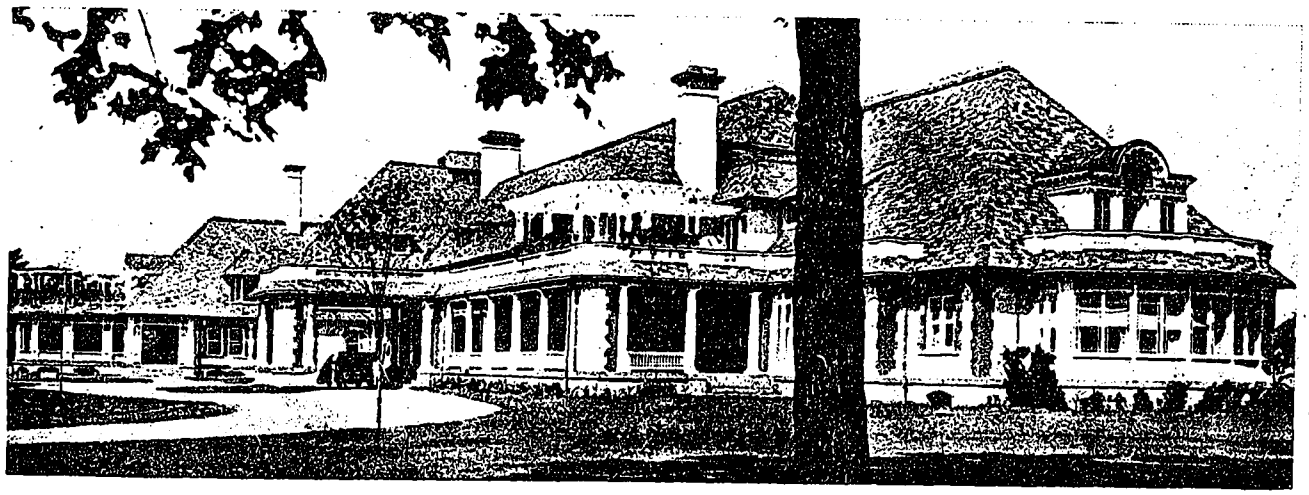
CASS GILBERT, ARCHITECT.



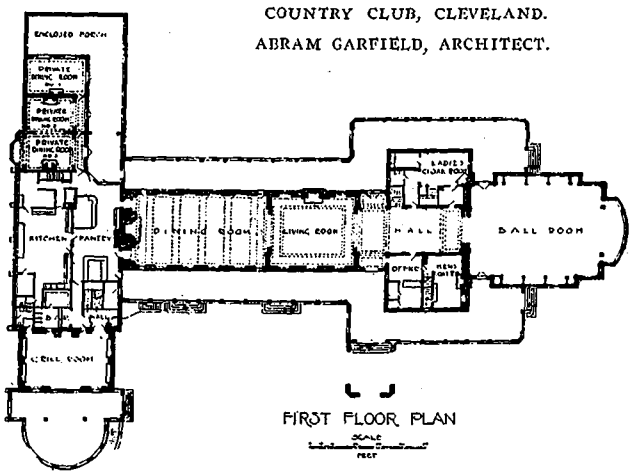




CLUB HOUSE, WYOMING, OHIO.
GARBER & WOODWARD, ARCHITECTS.

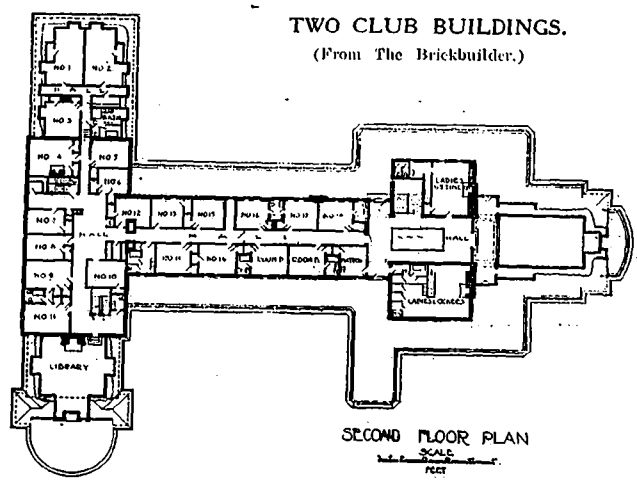


COUNTRY CLUB, CLEVELAND.
ABRAM GARFIELD, ARCHITECT.

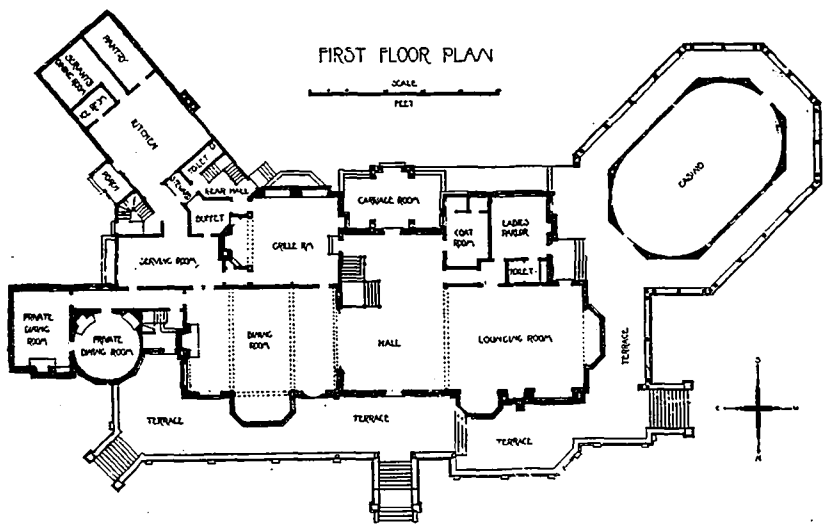


FIRST FLOOR PLAN

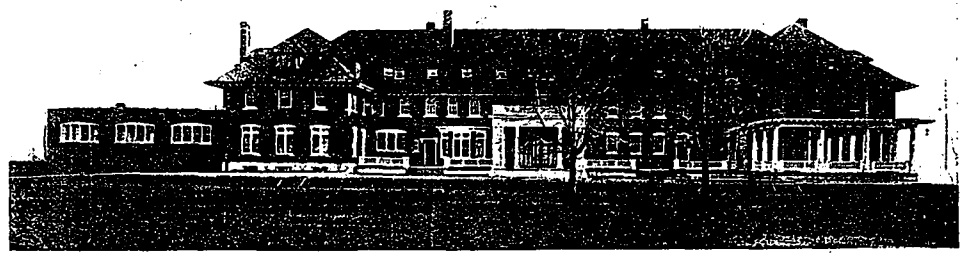
TWO CLUB BUILDINGS.
(From The Brickbuilder.)

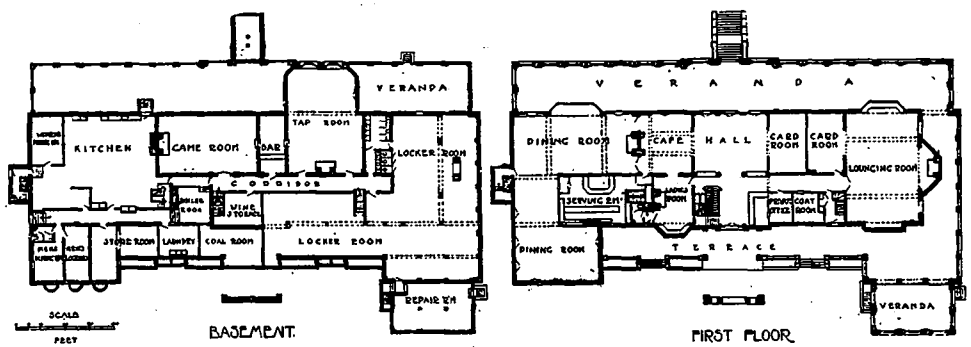


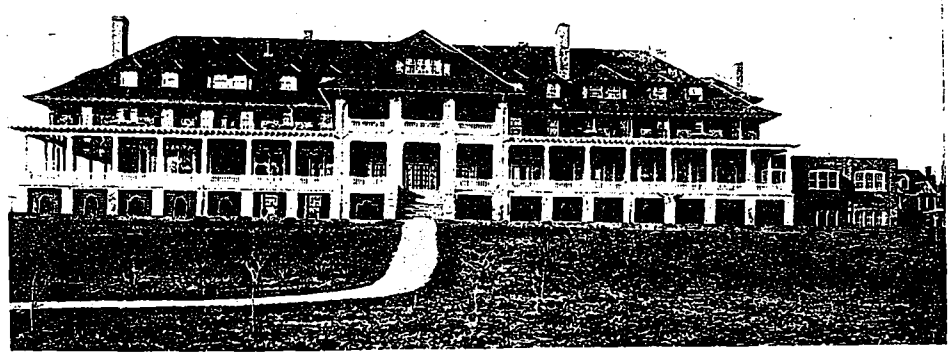
SECOND FLOOR PLAN



EUCLID CLUB, CLEVELAND, OHIO.
MEADE & GARFIELD, ARCHITECTS.



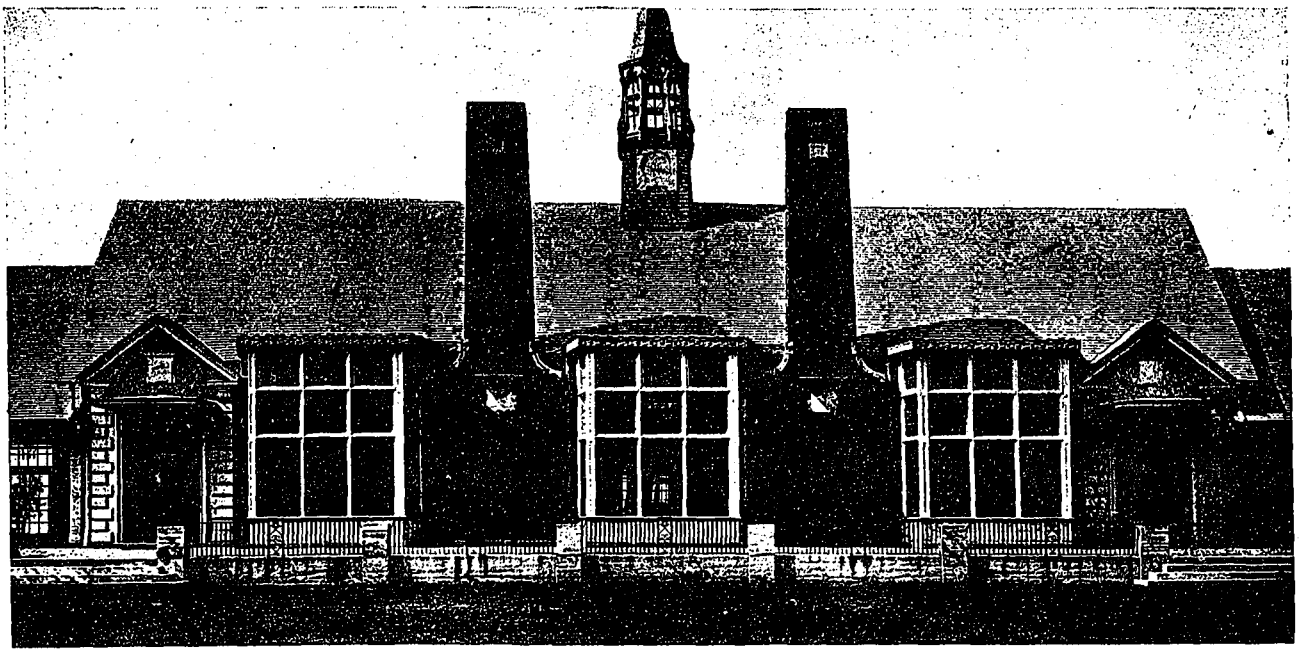


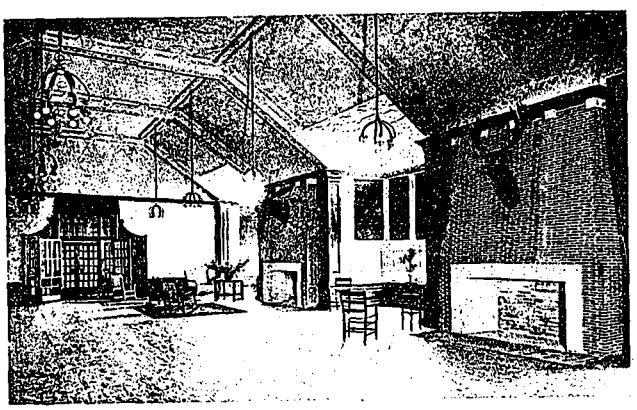


COUNTRY CLUB, DETROIT, MICH.
ALBERT KAHN, ARCHITECT.

TWO CLUB BUILDINGS.

(From The Brickbuilder.)

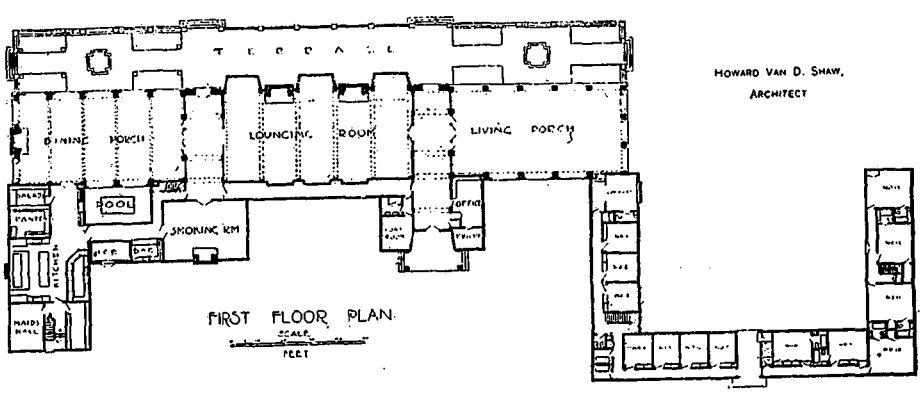


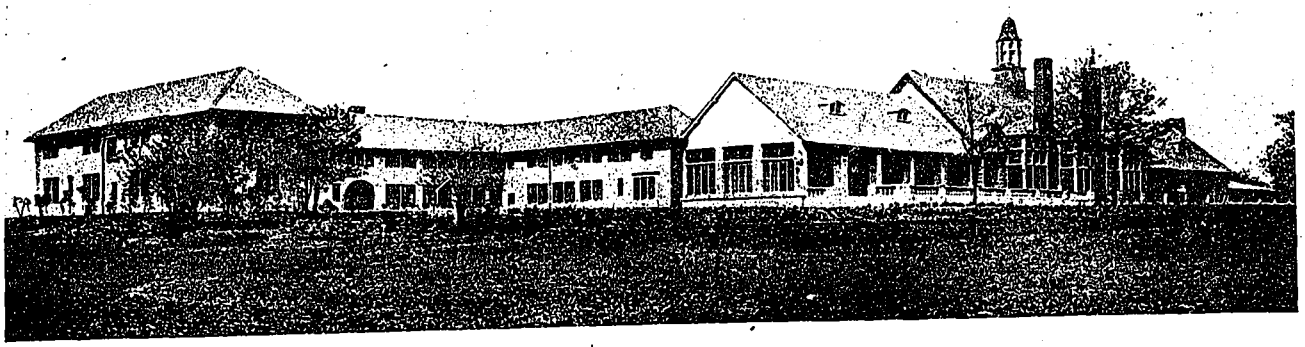


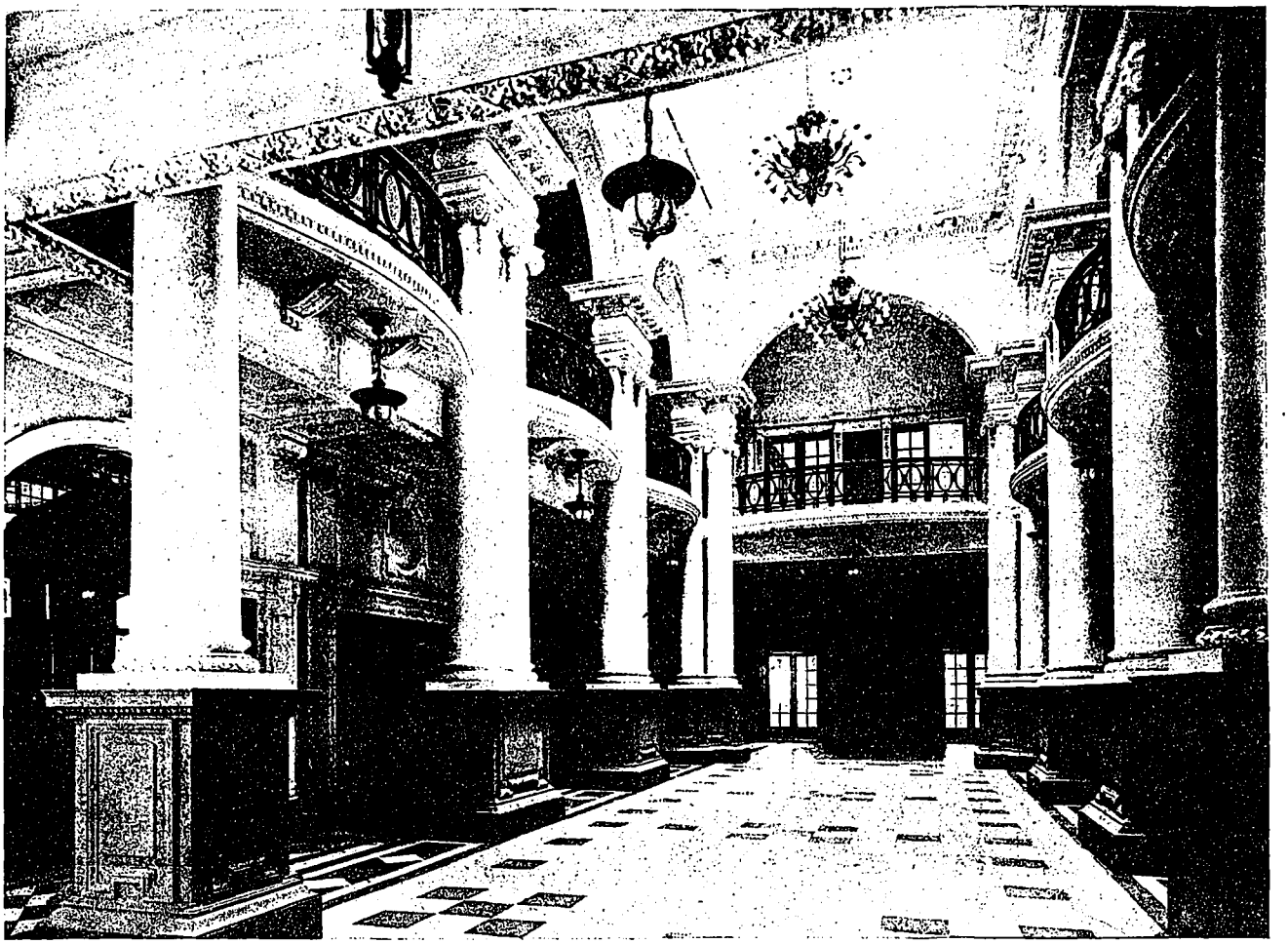
HOMEWOOD
COUNTRY CLUB,
FLOSSMOOR, ILL.

HOWARD VAN D. SHAW,
ARCHITECT.

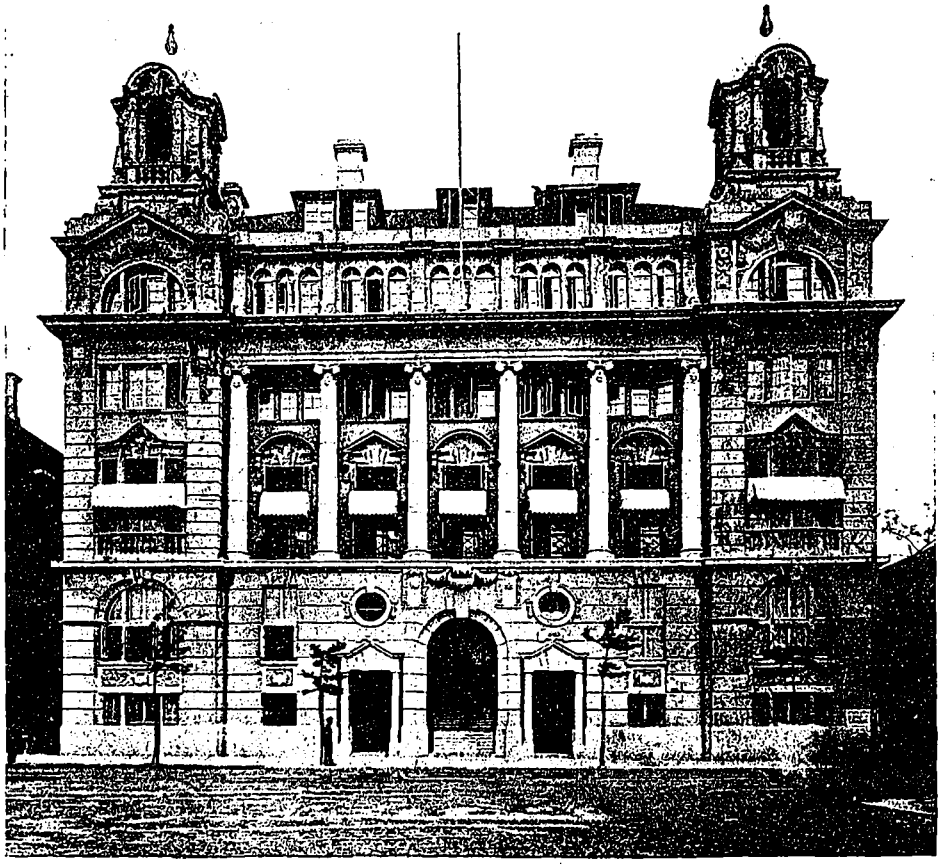
(From The Brickbuilder.)





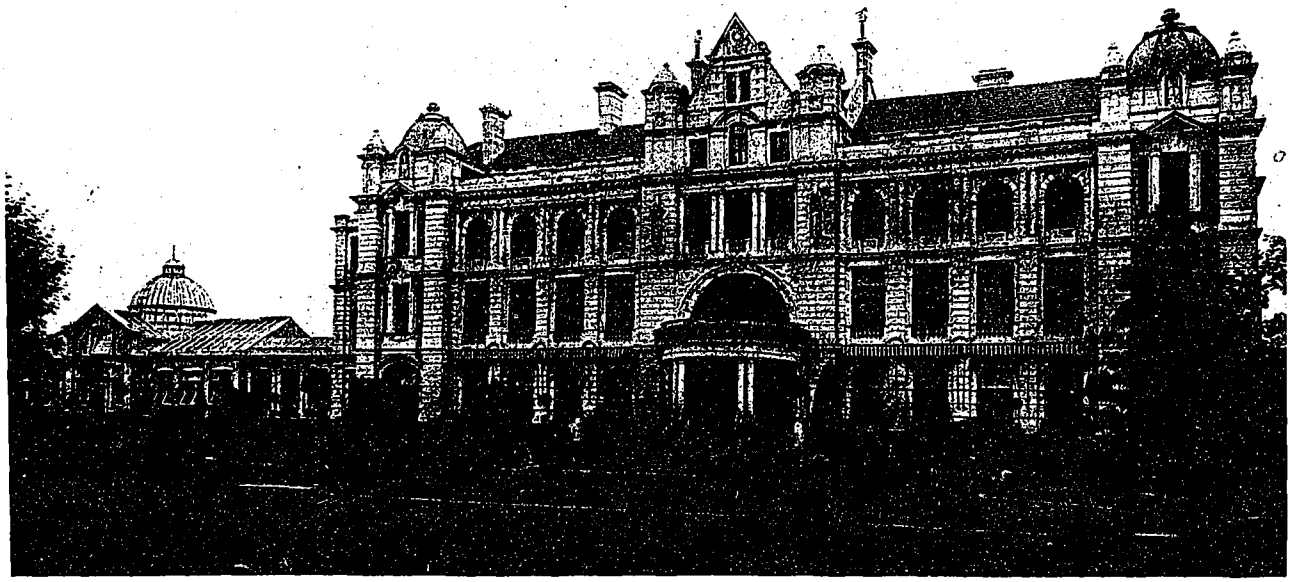


ROTUNDA.



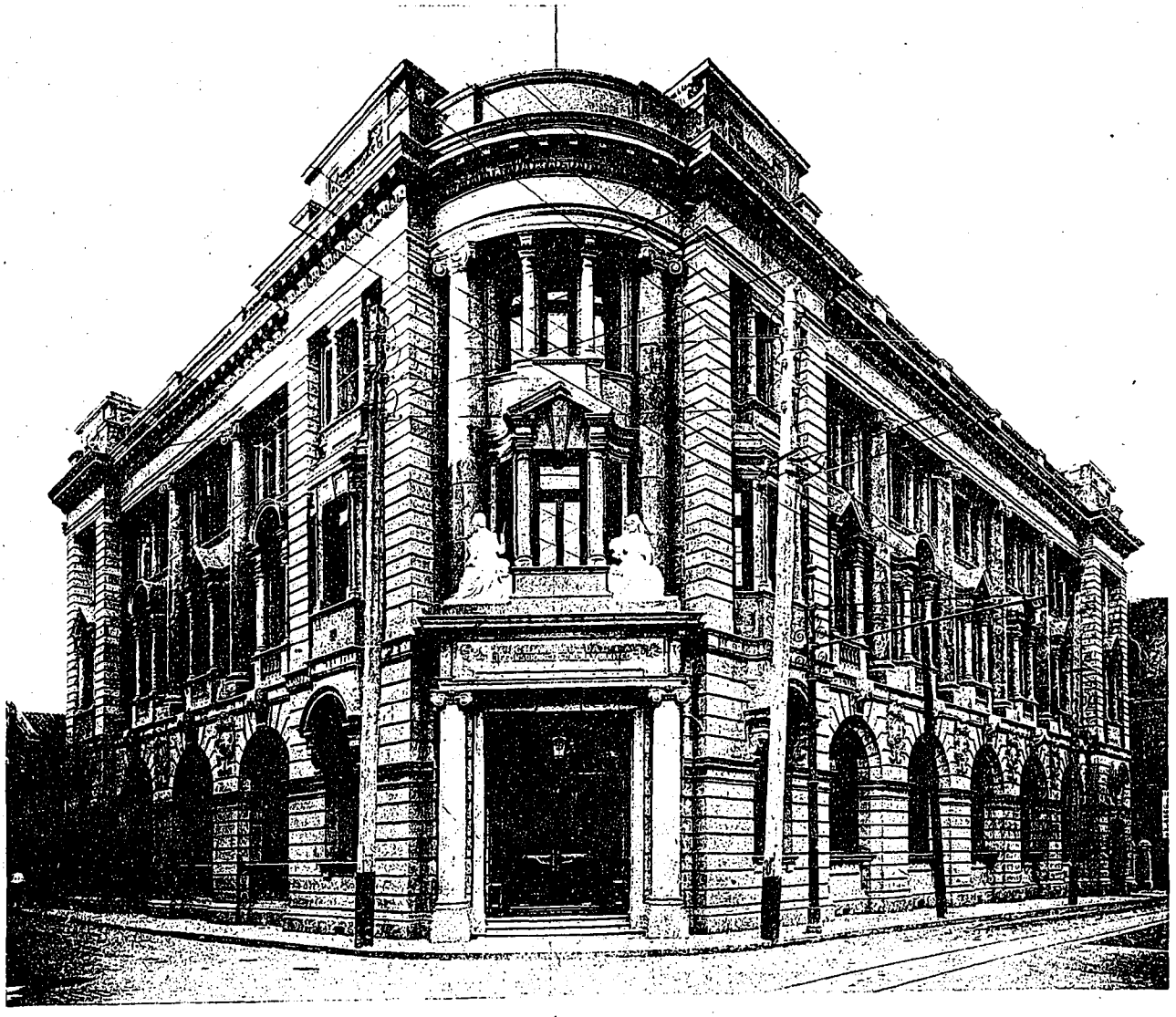
TWO VIEWS OF THE BRITISH CLUB, SHANGHAI, CHINA.

This building, constructed of stone and marble, accommodates a membership of two thousand. The total cost was $250,000.



HOUSE AT SHANGHAI, CHINA.

BUILT OF WHITE STONE WITH DECORATIONS IN GOLD LEAF.



CHINA MUTUAL LIFE INSURANCE COMPANY, SHANGHAI, CHINA.

ONE OF THE LATEST additions to the pamphlet advertising world is the little 16-page booklet "Beautiful Floors," issued by the Dougall Varnish Company, of Montreal. It is descriptive, as are all such pieces of literature, and attractively arranged. The booklet is published by the Murphy Varnish Company of the United States, Canadian agents for whom are the Dougall Varnish Co. of Montreal. "Health and beauty," "Natural wood floors and varnishes," "Transparent floor varnishes," "A varnish that has wearing power," "How you can tell whether it is fine varnish," "Davy Crockett's advice—don't," "For a new floor of close-grain wood," and other topics of very timely interest in this season of general clean-up, are published in "Beautiful Floors." This booklet may be secured from the Dougall Varnish Co.

* * *

THE FOUNDATION for the High School and Administration Building, Montreal (E. & W. Maxwell, architects) is being waterproofed on the inside by the "integral method," the waterproofing compound being Hydratite. This work is being executed under the inspection and direction of the Industrial Foundation and Waterproofing Co., of Toronto, the material being furnished by Pinchin, Johnson & Co., Ltd. Undoubtedly this is one of the largest jobs in Canada to be waterproofed under "the integral method" in the form of an interior application. Details of this work consist in applying a three-quarter inch coating on the inside of all walls below grade, in a one to two mixture of cement and sand, with the waterproofing compound being mixed therein, carried across all floors and then turned up three inches on the columns.

* * *

THE YALE & TOWNE Manufacturing Co. announce the removal of its general and executive offices from 9 Murray street to 9 East 40th street, New York city. The new quarters comprise a twelve-story building erected by the company for their exclusive use. The basement accommodates the sales-room and repair department; the ground floor provides ample room for the various exhibits; the twelfth floor takes care of the executive offices, while the remaining portion of the building is occupied by the managing staff and clerical force.

* * *

THE BEAVER CO., LTD., of the Canadian Beaver Companies, has already broken ground at Thorold, Ontario, for the erection of a large modern plant for the manufacture of "beaver board." Power from Niagara Falls will be used and a contract has just been closed for the first unit of 2,800 h.p., to be run continually night and day for thirty years. Later machinery will be installed which will require nearly 6,000 h.p. in addition to 500 h.p. which will be generated in the boilers for the treatment of fibre.

THE FIRM of J. & J. Taylor has just been awarded the contract to supply the steel vault doors and lining for the Bank of Montreal, to be erected in London, England. The work will be erected in the Toronto factory and put into place by the company. This is a worthy compliment to "Canadian made" goods and reflects credit upon the company which has been able to secure the contract over local competitors.

* * *

THE NAME of the Winnipeg branch of the "Pease" Foundry Co., Ltd., Toronto, has been changed to "Pease" Western Foundry, Ltd., and is located at same address, 287 Donald street, Winnipeg. This branch has all the territory west of Fort William to the Rockies, and is under the charge of Mr. J. M. Bell, who entered into this work at Winnipeg after many years as sales manager at the head office, Toronto.

* * *

AFTER THREE YEARS of constant study and application of the street paver problem, the Chain Belt Company, Milwaukee, Wis., now have ready for distribution the chain belt street paver. This paver is equipped with a boom 20 feet long and delivery bucket. Paving contractors have found this the most economical method of spreading concrete on streets, as it eliminates the use of wheelbarrows and carts. The concrete is discharged from the mixer into the delivery bucket, travelling on a single boom, which can be swung at an angle of 180 degrees, taking care of a street 50 feet wide. The boom bucket will hold a full batch of the mixed concrete and is provided with an automatic tripper, while the gates open up automatically at any place where it is desired to deposit the concrete. When the bucket returns to the mixer the gate closes automatically. The same man who operates mixer levers also controls the movement of the boom and bucket. In work where the road is less than 18 feet in width a gravity swivel chute may be substituted for the distributing boom.

Barrett Specification Roofs

AFTER THE FIRE

Striking proof of the fire retardant qualities of a Barrett Specification type of roof appears almost every time there is a city or factory fire. The photograph herewith shows a typical instance.

This building was completely gutted by fire. The building is isolated so that the firemen could not get to work on the roof, and in consequence the roofing received practically no protection by water.

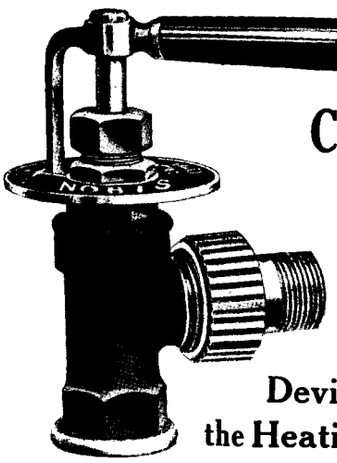
The roof, although it had acted as a blanket over the flames, showed only trifling damage at two or three small points where the support was completely destroyed. If it were not for the necessity of replacing the roof boards beneath, which were badly burned from inside, the roof could have been put in first-class condition at very little cost.

There are thousands of instances like this, where Barrett Specification Roofs have withstood severe exposure to fire, and thousands of buildings are saved every year from exterior fire exposure by these fire retardant roofs.

The Barrett Specification will be sent free on request. Every architect and engineer and property owner should have a copy on file.

The Paterson Mfg. Co., Limited

Montreal, Toronto, Winnipeg, Vancouver
St. John, N.B. Halifax, N.S. Sydney, N.S.



Commonsense Heating Control

A Practical Device for Regulating the Heating of Residences

Architects and householders who have experienced the discomforts of the usual factory-like installations for househeating which overheat the rooms, even when the radiators are shut off and where the heat of the latter cannot be regulated to the requirements of the room, should find out about this new valve.

It permits you to regulate the heat to any desired degree, a simple turn of the handle, as when turning on gas or water gives you all the heat necessary, a boon to the average householder, especially the women, who chiefly suffer from poorly regulated heating.

Have us show you how it works. We guarantee our valves to work satisfactorily.

The Nobis Engineering Co.
329 West King St., Toronto.

Why Zig-Zag Heat Tubes—

A battery of heavy cast-iron heat tubes surround the fire grate

in a Kelsey Warm Air Generator

Fresh air from the under draft passes through these tubes to the warm air pipes that distribute it throughout the building.

These heat tubes are made zig-zag to increase their radiating surface. The air turns and twists up through them, getting the full benefit of the heat.

Each of these zig-zag tubes weighs about 70 lbs., and there are **from 8 to 16 of these tubes in each Kelsey Generator.**

Once the heavy mass of iron becomes heated it remains hot for hours and hours, circulating **a constant supply of warm air throughout the building.**

Think of the economy this means! As a matter of fact a Kelsey Generator consumes from 20 to 30 per cent. less fuel than the ordinary furnace.

Full information about the Kelsey Generator will be sent you on request. Write for it.

The James Smart Mfg. Co., Limited
Brockville, Ont. Winnipeg, Man.

KAHN SYSTEM

of Reinforced Concrete

Steel Sash
Hyrib
Rib Bars
Rib Metal

KAHN SYSTEM
Reinforced Concrete

Concrete Finishes
Waterproofing Pastes.

Trussed Concrete Steel Co. of Canada, Limited

Head Offices and Works: Walkerville, Ont.

Branches Everywhere

Residence of Ralph Peters, Esq., President, Long Island R.R. Aymar Embury II., Architect, New York.

Shingles stained with Cabot's Shingle Stains, stucco stained with Cabot's Waterproof Cement Stains, and lined with Cabot's Quilt, for warmth.

Cabot's Creosote Shingle Stains

The Standard Stains for Shingles, Siding or Trimmings. The first shingle-stains ever made, and quality guaranteed by thirty years' use all over the world. Made of the strongest and finest colors, ground in pure linseed oil, and Creosote, "the best wood preservative known." No cheapeners, no adulterants, *no kerosene or benzine.*

Cabot's "Quilt"
Heat-proof Cold-proof Sound-proof

The warmest lining. One layer is warmer than 40 layers of common building paper. Uninflammable, non-decaying, vermin-proof. Insulates heater and refrigerator cars, cold-storage and ice-houses, and all other buildings. Deadens sound in floors and partitions, and in cars.

Cabot's Waterproof Cement Stains
For waterproofing and artistically tinting stucco and similar cement surfaces.

Cabot's Waterproof Brick Stains
For freshening and restoring old, faded and discolored bricks, and waterproofing all bricks.

Cabot's Conservo Wood Preservative
For preserving ties, poles, planking and all lumber exposed to decay.

Cabot's Plasterbond Damp-proofing
For direct plastering on brick or concrete without studding or lathing. Forms a perfect, permanent and impervious bond.

Cabot's Protective Paint
For protecting structural iron and steel from rust, corrosion and electrolysis.

Cabot's Mortar Colors
Strongest, finest and most lasting. Send for Samples and Prices.

Samuel Cabot, Inc, Manuf'g Chemists, Boston, Mass.

CANADIAN AGENTS:

A. Muirhead Co., Toronto.
Henry Darling, Vancouver.
Saskatchewan Supply Co., Saskatoon.
Braid & McCurdy, Winnipeg.
Seymour & Co., Montreal.
Canadian Equipment & Supply Co., Calgary.

A DIRECTORY FOR
ARCHITECTURAL SPECIFICATIONS & CONTRACTORS' SUPPLIES & MACHINERY

Adamant Plaster.
Stinson-Reeb Builders' Supply Co.

Air Washers and Humidifers.
Sheldons Limited.

Architectural Bronze and Brass Work.
Dennis Wire and Iron Works.
Meadows, Geo. B. Co.

Architectural Iron.
Canada Foundry Co., Ltd.
Dennis Wire and Iron Works.
Meadows, Geo. B. Co.
Metal Shingle and Siding Co.
Pedlar People, The.

Architectural Stucco Relief.
Hynes, W. J., Ltd.

Architectural Terra Cotta.
Toronto Plate Glass Imp. Co.

Artificial Stone.
Roman Stone Co., Ltd.

Asbestos Products.
Asbestos Mfg. Co.
Canadian Johns-Manville Co.
Ormsby, A. B., Ltd.

Bank and Office Railings.
Canada Foundry Co., Ltd.
Dennis Wire and Iron Works.
Greening Wire Co., Ltd.
Meadows, Geo. B. Co.

Bank and Office Window Blinds.
Dennis Wire and Iron Works.
Greening Wire Co., Ltd.
Meadows, Geo. B. Co.

Bath Room Fittings.
Canadian Johns-Manville Co.
Robertson Co., James B.
Standard Ideal Co., Ltd.
Standard Sanitary Co.

Bent Glass.
Toronto Plate Glass Imp. Co.

Belting.
Canadian Fairbanks-Morse Co.
Gutta Percha and Rubber Mfg. Co., Ltd.
Mussens Limited.

Blowers.
Canadian Fairbanks-Morse Co.
Sheldons Limited.

Blow and Vent Piping.
Metal Shingle and Siding Co.
Ormsby, A. B., Ltd.
Pedlar People, The.

Boilers.
Clare Bros. Co.
Dominion Radiator Co., Ltd.
Goldie & McCullough Co., Ltd.
Mussens Limited.
Pease Foundry Co., Ltd.
Steel and Radiation, Ltd.
Taylor-Forbes Co., Ltd.
The John McDougall Caledonian Iron Works, Ltd.

Brass Works.
Kerr Engine Co.
Robertson, James B. Co.

Brick and Terra Cotta.
American Enamel Brick and Tile Co.
Dartnell, E. F., Ltd.
Don Valley Brick Works.
Stinson-Reeb Builders' Supply Co.

Bridges.
Canada Foundry Co., Ltd.
Dominion Bridge Co.

Building Paper and Felts.
Asbestos Mfg. Co.
Bird, F. W. & Son.
Canadian Johns-Manville Co.
Metal Shingle and Siding Co.
Pedlar People, The.

Building Supplies.
Bird, F. W. & Son.
Canadian Fairbanks-Morse Co.
Dartnell, E. F. & Co.
Metal Shingle and Siding Co.
Mussens Limited.
Stinson-Reeb Builders' Supply Co.
Pedlar People, The.

Caen Stone Cement.
Hynes, W. J., Ltd.

Caps for Columns and Pilasters.
Hynes, W. J., Ltd.
Metal Shingle and Siding Co.
Pedlar People, The.

Cars (Factory and Dump).
Mussens Limited.
Sheldons Limited.

Cast Iron Columns.
Canada Foundry Co.
Pedlar People, The.
The John McDougall Caledonian Iron Works, Ltd.

Cement.
Canada Cement Co.

Cement (Fireproof).
Canadian Johns-Manville Co.
Dartnell, E. F., Ltd.
Stinson-Reeb Builders' Supply Co.

Cement Block Machinery.
Ideal Concrete Machinery Co.
London Concrete Machinery Co.
Mussens Limited.

Cement Brick Machinery.
London Concrete Machinery Co.
Mussens Limited.

Cement Machinery.
London Concrete Machinery Co.
Mussens Limited.
Steel and Radiation, Ltd.

Cement Tile Machinery.
Ideal Concrete Machinery Co.
London Concrete Machinery Co.
Mussens Limited.
Stinson-Reeb Builders' Supply Co.

Cold Storage and Refrigerator Insulation.
Bird, F. W. & Son.
Linde British Refrigerator Co.

Concrete Construction (Reinforced).
Metal Shingle and Siding Co.
Pedlar People, The.
Steel and Radiation, Ltd.
Trussed Concrete Steel Co.

Concrete Mixers.
Canada Foundry Co.
Canadian Fairbanks-Morse Co.
Dartnell, E. F., Ltd.
London Concrete Machinery Co.
Mussens Limited.
Wettlaufer Bros.

Concrete Steel.
Canadian Fairbanks-Morse Co.
Dennis Wire and Iron Works.
Greening Wire Co., Ltd.
Metal Shingle and Siding Co.
Noble, Clarence W.
Steel & Radiation, Ltd.
Pedlar People, The.
Trussed Concrete Steel Co.

Conduits.
Conduits Co., Ltd.
Pedlar People, The.

Contractors' Machinery.
Canadian Fairbanks-Morse Co.
Mussens Limited.

Contractors' Supplies.
Dartnell, E. F. Ltd.
Greening Wire Co., Ltd.
Mussens Limited.
Stinson-Reeb Builders' Supply Co.

Cork Board.
Canadian Johns-Manville Co.

Corner Beads.
Metal Shingle and Siding Co.
Pedlar People, The.
Steel and Radiation, Ltd.

Cranes.
Canadian Fairbanks-Morse Co.
Dominion Bridge Co., Ltd.
International Marine Signal Co.
Mussens Limited.

Crushed Stone.
Stinson-Reeb Builders' Supply Co., Ltd.

Cut Stone Contractors.
Dartnell, E. F., Ltd.
Roman Stone Co., Ltd.

Damp Proofing.
Ault & Wiborg Co.
Canadian Johns-Manville Co.
Pinchin, Johnson Co.

Deposit Boxes.
Canadian Fairbanks-Morse Co.
Goldie & McCulloch Co., Ltd.
Taylor, J. & J.

Doors.
Burton & Baldwin Mfg. Co.

Drills (Brick and Stone).
Mussens Limited.
Star Expansion Bolt Co.

Drying Appliances.
Sheldons Limited.

Dumb Waiters.
Otis-Fensom Elevator Co.
Turnbull Elevator Co.

Electro-Plating.
Dennis Wire and Iron Works.

Electric Wire and Cables.
Greening Wire Co., Ltd.
Robertson Co., James B.

Elevators (Passenger and Freight).
Otis-Fensom Elevator Co.
Turnbull Elevator Co.
The John McDougall Caledonian Iron Works, Ltd.

Elevator Enclosures.
Canada Foundry Co.
Dennis Wire and Iron Works.
Greening Wire Co.
Meadows, Geo. B. Co., Ltd.
Otis-Fensom Elevator Co.

Enamels.
Ault & Wiborg Co.
Berry Bros.
Canadian Bitumastic Enamels Co.
Imperial Varnish & Color Co.
International Varnish Co.
Moore, Benjamin Co.

Engines.
Canadian Fairbanks-Morse Co.
Goldie & McCulloch Co., Ltd.
Mussens Limited.
Sheldons Limited.
The John McDougall Caledonian Iron Works, Ltd.

Engineers' Supplies.
Canadian Fairbanks-Morse Co.
Kerr Engine Co.
Mussens Limited.
Robertson Co., James B.
Sheldons Limited.
Steel and Radiation.

Exhaust Fans.
Sheldons Limited.

Expanded Metal.
Galt Art Metal Co.
Leslie & Co., A. C., Ltd.
Metal Shingle and Siding Co.
Noble, Clarence W.
Pedlar People, The.
Steel and Radiation, Ltd.
Stinson-Reeb Builders' Supply Co.

Expansion Bolts.
Star Expansion Bolt Co.

Fire Brick.
Dartnell, E. F.
Stinson-Reeb Builders' Supply Co.

Fire Sprinklers.
General Fire Equipment Co.
McGuire, W. J.
Vogel Co. of Canada, Ltd.

Fire Extinguishers.
Canadian Johns-Manville Co.
General Fire Equipment Co.
Ormsby, A. B., Ltd.
Vogel Co. of Canada, Ltd.

Fire Escapes.
Canada Foundry Co.
Dennis Wire and Iron Works.
Meadows, Geo. B. Co., Ltd.
Reid & Brown.

Fireplace Goods.
Carter & Co., Ltd.
Dennis Wire and Iron Works.
Murray-Kay Co., Ltd.

Fire Proofing.
Canadian Johns-Manville Co.
Dartnell, E. F.
Don Valley Brick Works.
Noble, Clarence W.
Port Credit Brick Co.
Pedlar People, The.
Steel and Radiation, Ltd.
Trussed Concrete Steel Co.

Fireproof Steel Doors.
Dennis Wire and Iron Works.
Metal Shingle and Siding Co.
Mussens Limited.
Ormsby, A. B., Ltd.
Pedlar People, The.
Steel and Radiation.
Stinson-Reeb Builders' Supply Co.

Fireproof Windows.
Galt Art Metal Co.
Hobbs Mfg. Co.
Metal Shingle and Siding Co.
Ormsby, A. B., Ltd.
Pedlar People, The.
Stinson-Reeb Builders' Supply Co.

Flooring.
Bird, F. W. & Son.
Seaman-Kent Co.

Furnaces and Ranges.
Clare Bros., Ltd.
Pease Foundry Co., Ltd.
Steel and Radiation, Ltd.
Taylor-Forbes Co., Ltd.

Galvanized Iron Works.
Metal Shingle and Siding Co.
Ormsby, A. B., Ltd.
Pedlar People, The.
Sheldons Limited.

Galvanized Iron.
Leslie & Co., A. C.
Metal Shingle and Siding Co.

Glass.
Consolidated Plate Glass Co.
Hobbs Mfg. Co.
Toronto Plate Glass Co.

Grille Works.
Dennis Wire and Iron Works.
Meadows, Geo. B. Co., Ltd.
Steel and Radiation, Ltd.
Taylor, J. & J.

Hangers.
Ormsby, A. B., Ltd.

Hardware.
Canadian Yale & Towne, Ltd.
Taylor-Forbes Co., Ltd.

Hardwood Flooring.
Canadian Fairbanks-Morse Co.

Heating Apparatus.
Clare Bros., Ltd.
Dominion Radiator Co.
Dunham, C. A. Co.
Goldie & McCulloch Co., Ltd.
Kerr Engine Co.
Pease Foundry Co., Ltd.
Sheldons Limited.
Steel and Radiation, Ltd.
Taylor-Forbes Co., Ltd.

Heating Engineers and Contractors.
Sheldons Limited.

Hoisting Machinery.
Mussens Limited.
Oits-Fensom Elevator Co.

Hinges.
Taylor-Forbes Co., Ltd.

Hydrants.
Kerr Engine Co.

Hydraulic Machinery.
The John McDougall Caledonian Iron Works, Ltd.

Iron Doors and Shutters.
Dennis Wire and Iron Works.
Metal Shingle and Siding Co.
Taylor, J. & J.

Iron Stairs.
Canada Foundry Co.
Dennis Wire and Iron Works.
Meadows, Geo. B. Co., Ltd.

Iron Supplies.
Kerr Engine Co.

Installation.
Bird, F. W. & Son.
Canadian Johns-Manville Co.
Seaman-Kent Co.

Interior Woodwork.
Blonde Lumber Co.
Seaman-Kent Co.

Jail Cells and Gates.
Dennis Wire and Iron Works.
Goldie & McCulloch Co., Ltd.
Taylor, J. & J.

Joist Hangers.
Taylor-Forbes Co., Ltd.
Trussed Concrete Steel Co.

Lamp Standards.
Canada Foundry Co.
Canadian Tungsten Lamp Co.
Dennis Wire and Iron Works.
Seaman-Kent Co.

Lath (Metal).
Galt Art Metal Co.
Greening Wire Co., Ltd.
Metal Shingle and Siding Co.
Noble, Clarence W.
Pedlar People, The.
Steel and Radiation, Ltd.
Stinson-Reeb Builders' Supply Co.
Trussed Concrete Steel Co.

Laundry Tubs.
Toronto Laundry Machinery Co.

Leaded Glass.
Hobbs Mfg. Co.

Marble.
Dartnell, E. F.
Dominion Marble Co., Ltd.
Missisquoi Marble Co.
Robertson Co., James B.

Metallic Sash.
Hobbs Mfg. Co.
Metal Shingle and Siding Co.
Steel and Radiation, Ltd.

Metal Shingles.
Galt Art Metal Co.
Pedlar People, The.

Metal Store Fronts.
Dartnell, E. F.
Dennis Wire and Iron Works.
Hobbs Mfg. Co.
Metal Shingle and Siding Co.

Metal Walls and Ceilings.
Metal Shingle and Siding Co.
Noble, Clarence W.
Ormsby, A. B., Ltd.
Pedlar People, The.

Municipal Supplies.
Mussens Limited.

Non-Conducting Coverings.
Ault & Wiborg.
Canadian Johns-Manville Co.

Ornamental Iron Work.
Canada Foundry Co.
Dennis Wire and Iron Works.
Meadows, Geo. B. Co., Ltd.
Steel and Radiation, Ltd.
Turnbull Elevator Co.

Packing (Steam).
Canadian Johns-Manville Co.

Packing.
Canadian Fairbanks-Morse Co.
Gutta Percha and Rubber Co.

Paints (Steel and Iron).
Brandram-Henderson Co.
Canadian Bitumastic Enamels Co.
Dartnell, E. F.
Imperial Varnish & Color Co.
International Varnish Co.
Pinchin, Johnson Co.

Paints and Stains.
Berry Bros., Ltd.
Brandram-Henderson Co.
Canadian Bitumastic Enamels Co.
Dartnell, E. F.
Imperial Varnish & Color Co.
International Varnish Co.
Pinchin, Johnson Co.
Robertson, James B.

Perforated Steel.
Greening Wire Co., Ltd.

Pipe Covering.
Canadian Johns-Manville Co.

Pasters.
Brandram-Henderson Co.
Canadian Johns-Manville Co.
Hynes, W. J.

Plaster Corner Beads.
Metal Shingle and Siding Co.
Pedlar People, The.

Plate and Window Glass.
Consolidated Glass Co.
Hobbs Mfg. Co.
Toronto Plate Glass Co.

Plumbers' Brass Goods.
Canadian Fairbanks-Morse Co.
Robertson Co., James B.
Standard Ideal Co., Ltd.
Steel and Radiation, Ltd.

Plumbing Fixtures.
Robertson Co., James B.
Standard Ideal Co.
Standard Sanitary Co.

Pneumatic Tools.
Mussens Limited.

Porcelain Enamel Baths.
Robertson Co., James B.
Standard Ideal Co., Ltd.
Standard Sanitary Co.

Radiators.
Dominion Radiator, Ltd.
Steel and Radiation, Ltd.
Taylor-Forbes, Ltd.

Refrigerating Machinery.
Linde British Refrigeration Co., Ltd.

Refrigerator Insulation.
Bird, F. W. & Son.
Canadian Johns-Manville Co.
Metal Shingle and Siding Co.

Radiator Valves.
Kerr Engine Co.
Steel and Radiation Co., Ltd.

Reinforced Concrete.
Metal Shingle and Siding Co.
Noble, Clarence W.
Pedlar People, The.
Steel and Radiation, Ltd.
Trussed Concrete Steel Co.

Relief Decoration.
Hynes, W. J.

Roofing Paper.
Canadian Johns-Manville C.o
Bird, F. W. & Son.
Pedlar People, The.
Metal Shingle and Siding Co.

Roofing.
Asbestos Mfg. Co.
Bird, F. W. & Son.
Canadian Johns-Manville Co.
Metal Shingle and Siding Co.
Patterson Mfg. Co.

Roofing (Slate).
Ormsby, A. B., Ltd.

Roofing (Tile).
Dartnell, E. F.
Metal Shingle and Siding Co.
Pedlar People, The.

Rubber Tiling.
Gutta Percha and Rubber Co.

Safes (Fireproof and Bankers').
Canadian Fairbanks-Morse Co.
Goldie & McCulloch Co., Ltd.
Taylor, J. & J.

Sanitary Plumbing Appliances.
Robertson Co., James B.
Standard Ideal Co., Ltd.
Standard Sanitary Co.

Sand Screens.
Steel and Radiation, Ltd.
Greening Wire Co.

Screens.
Watson-Smith Co., Ltd.

Shafting, Pulleys and Hangers.
Canadian Fairbanks-Morse Co.
Goldie & McCulloch Co., Ltd.

Sheet Metal.
Leslie, A. C.
Metal Shingle and Siding Co.

Sheet Metal Workers.
Galt Art Metal Co.
Metal Shingle and Siding Co.
Ormsby, A. B., Ltd.
Pedlar People, The.
Sheldons Limited.

Shingle Stains.
International Varnish Co.
Pinchin, Johnson Co.
Robertson Co., James B.

Sidewalks, Doors and Grates.
Dennis Wire and Iron Works.

Sidewalk Lifts.
Otis-Fensom Elevator Co.

Sidewalk Prisms.
Hobbs Mfg. Co.

Slate.
Robertson Co., James B.

Stable Fittings.
Dennis Wire and Iron Works.

Staff and Stucco Work.
Canadian Johns-Manville Co.
Hynes, W. J.

Steam Appliances.
Canadian Fairbanks-Morse Co.
Kerr Engine Co.
Sheldons Limited.
Steel and Radiation, Ldt.
Taylor-Forbes Co., Ltd.

Steam and Hot Water Heating.
Dominion Radiator Co., Ltd.
Dunham, C. A. Co.
Sheldons Limited.
Steel and Radiation, Ltd.
Taylor-Forbes Co., Ltd.

Steel Casements.
Steel and Radiation, Ltd.

Steel Concrete Construction.
Noble, Clarence W.
Pedlar People, The.
Steel and Radiation, Ltd.
Trussed Concrete Steel Co.

Steel Doors.
Dennis Wire and Iron Works.
Mussens Limited.
Ormsby, A. B., Ltd.
Pedlar People, The.

Structural Iron Contractors.
Canada Foundry Co.
Dennis Wire and Iron Works.
Dominion Bridge Co.
Hamilton Bridge Co.
Reid & Brown.
Structural Steel Co., Ltd.
Toronto Iron Works.

Structural Steel.
Canada Foundry Co.
Dennis Wire and Iron Works.
Dominion Bridge Co.
Hamilton Bridge Co.
Mussens Limited.
Reid & Brown.
Sheldons Limited.
Structural Steel Co., Ltd.

Telephone Systems.
Northern Electric & Mfg. Co.

Terra Cotta Fireproofing.
Carter & Co., Ltd.
Dartnell, E. F.
Don Valley Brick Works.
Missisquoi Marble Co.

Tile (Floor and Wall).
Carter & Co., Ltd.
Dartnell ,E. F.
Don Valley Brick Works.

Vacuum Heating System.
Dunham, C. A. Co.

Varnishes.
Ault & Wiborg Co.
Berry Bros., Ltd.
Brandram-Henderson Co.
Imperial Varnish & Color Co.
International Varnish Co.
Pinchin, Johnson Co.

Vaults and Vault Doors (Fireproof and Bankers').
Goldie & McCulloch, Ltd.
Taylor, J. & J.

Valves.
Canadian Fairbanks-Morse Co.
Dunham, C. A. Co.
Kerr Engine Co.
Robertson Co., James B
Steel and Radiation, Ltd.
Taylor-Forbes Co.

Ventilators.
Metal Shingle and Siding Co.
Sheldons Limited.

Wall Finishes.
Berry Bros.
Brandram-Henderson Co.
Dartnell, E. F.
Imperial Paint and Color Co.
International Varnish Co.
Pinchin, Johnson Co.

Wall Hangers.
Taylor-Forbes Co.

Waterproofing.
Ault & Wiborg Co.
Bird, F. W. & Son.
Canadian Johns-Manville Co.
Dartnell, E. F.
Kerr Engine Co.
Mussens Limited.
Pinchin, Johnson Co.
Stinson-Reeb Bllrs. Supply Co.

Waterworks Supplies.
Mussens Limited.
Robertson Co., James B.
Standard Ideal Co., Ltd.

Wheelbarrows.
Mussens Lmiited.

White Lead, Putty and Oils.
Brandram-Henderson C.o
International Varnish Co.
Pinchin, Johnson Co.

Window Guards.
Dennis Wire and Iron Works.
Greening Wire Co.
Steel and Radiation, Ltd.

Wire Rope and Fittings.
Greening Wire Co., Ltd.
Mussens Limited.
Otis-Fensom Elevator Co.

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