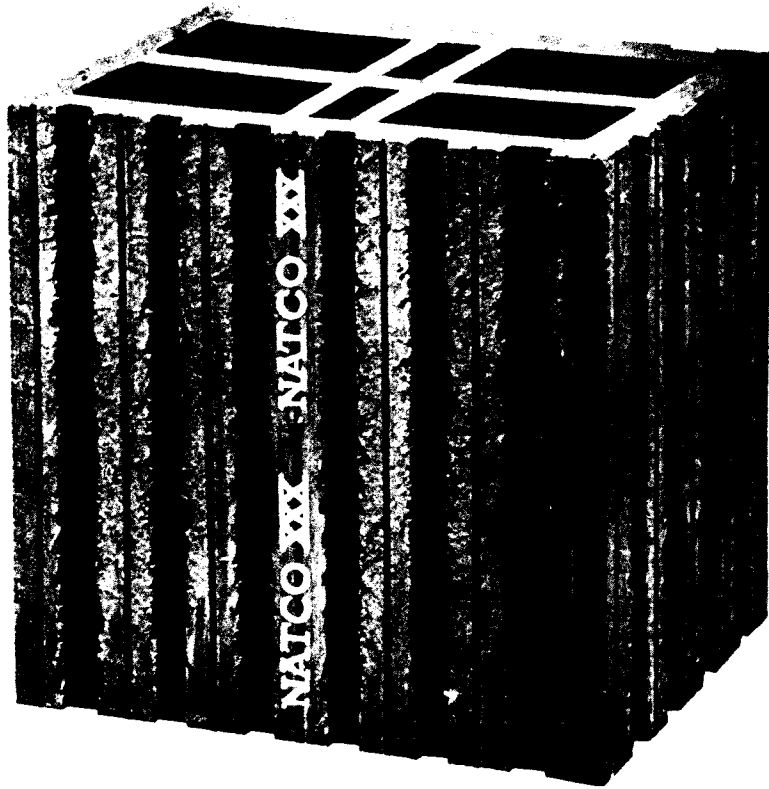


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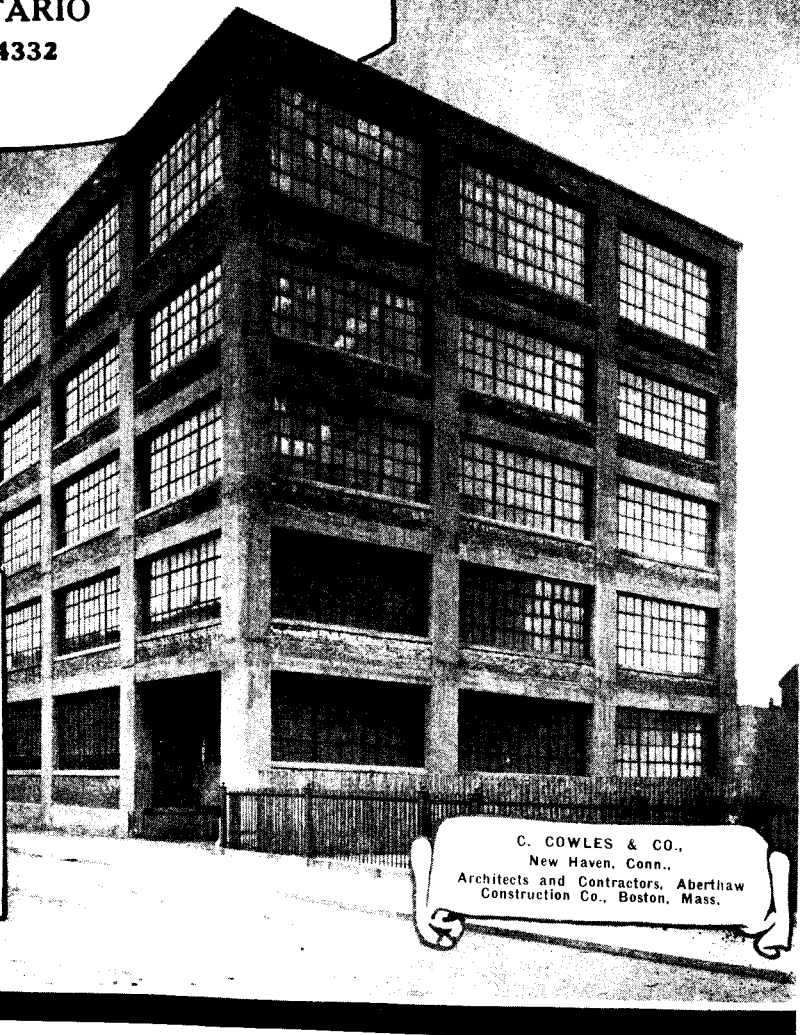
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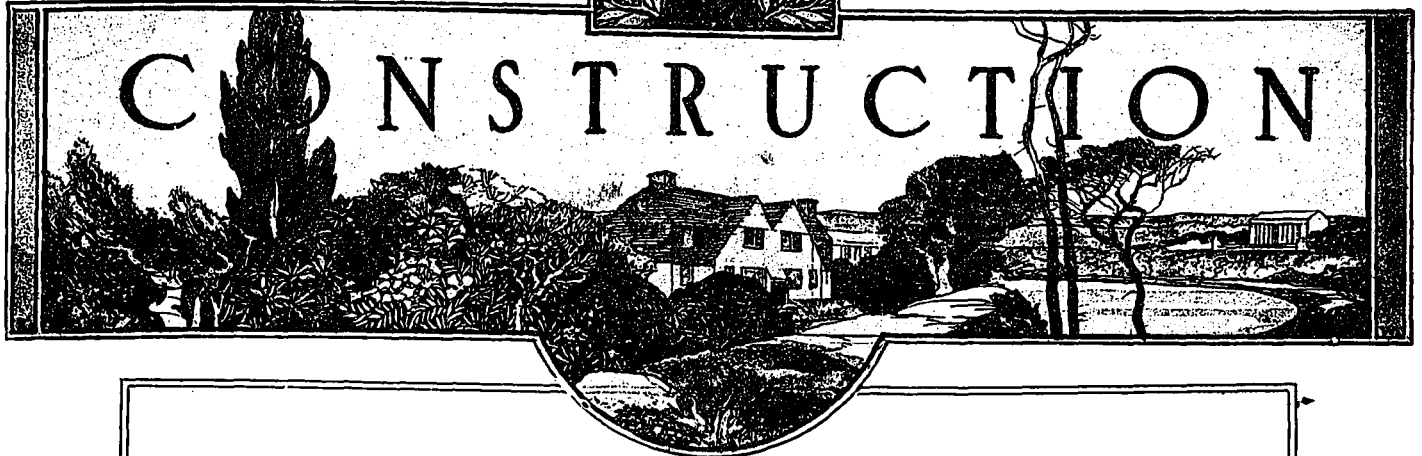
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CONSTRUCTION



April, 1918

Volume XI, No. 4

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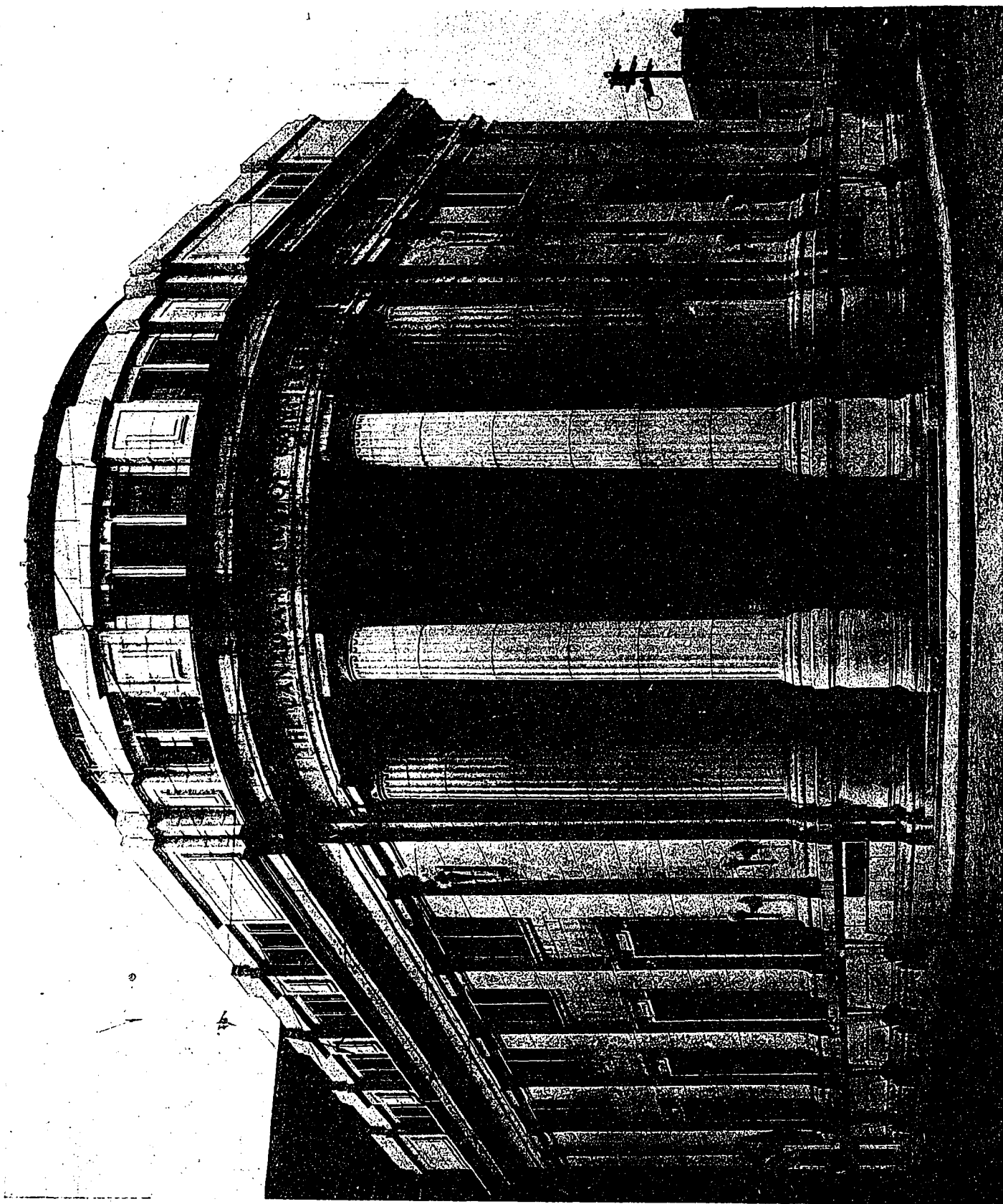
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H. GAGNIER, Limited, Publishers

GRAPHIC ARTS BLDG., TORONTO, CANADA

MONTREAL BRANCH OFFICES NEW YORK



CANADIAN BANK OF COMMERCE, QUEBEC CITY.

V. D. HORSBURGH, F.R.I.B.A., ARCHITECT.



Recent Canadian Branch Banks

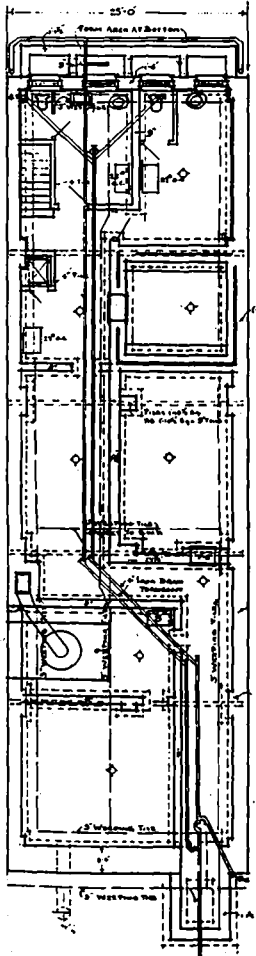
THE various banking institutions in Canada through their branch offices have not only encouraged a general spirit of thrift in the way of saving deposits, but have given to practically every community in the country and to every section in the larger cities, convenient facilities for the direct transaction of banking business. Moreover, it is to the credit of the banks that they have adopted a policy of housing their branches in buildings worthy of so laudable an enterprise.

Present figures place the total number of buildings erected in Canada for this purpose at close to four thousand. The fact that approximately two-thirds of them have been built in the past ten years, bears evidence to a marked period of expansion and is convincing as to the country's commercial and industrial growth and importance.

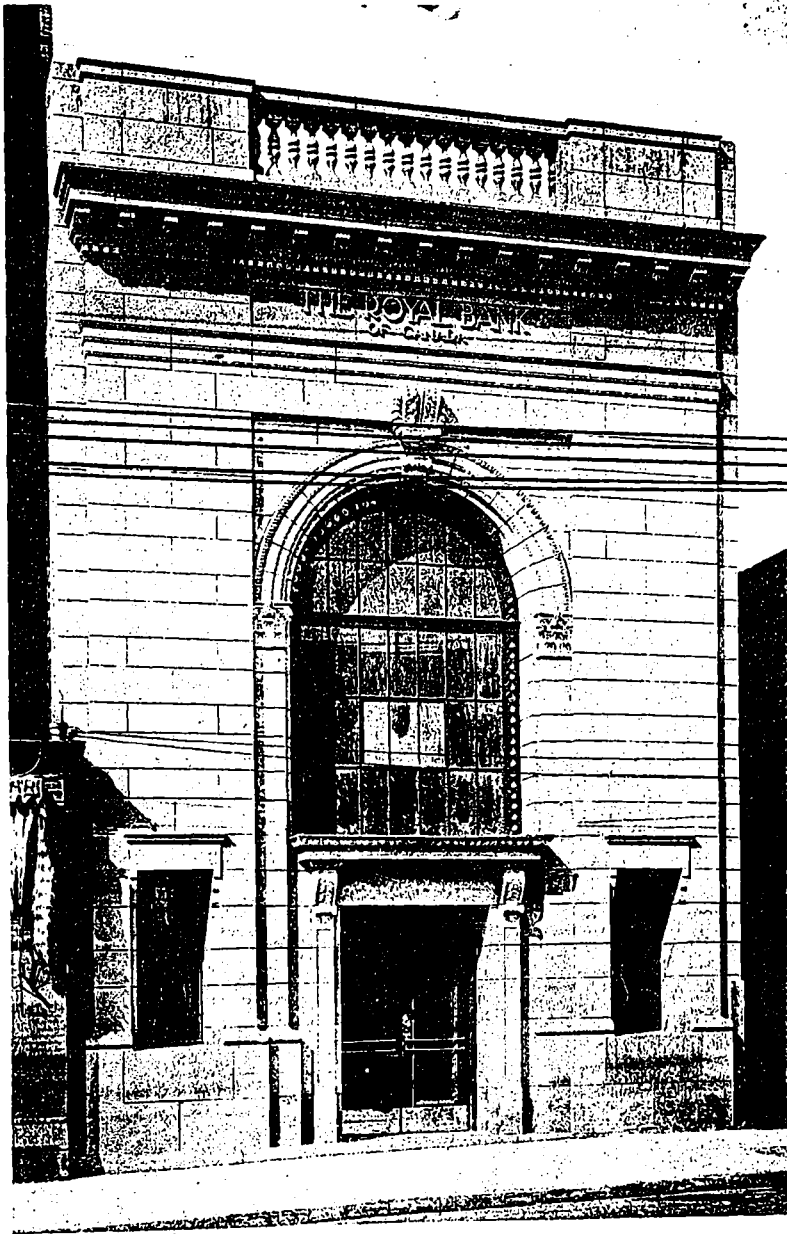
Naturally the development of one particular class of building to this extent follows a certain standard of plan based upon a

practical working arrangement adaptable to different localities, but in a large number of cases the design and disposition of the various departments are quite individual in character and show the solution of interesting problems of plan.

In fact owing to the class of materials and workmanship usually demanded and which requires an outlay in excess of what as a rule is expended on other types of buildings of similar size, these branches represent one of the best and most satisfactory phases of our building progress, giving both a sense of importance to the smaller towns and a feeling of dignity in the various districts of the larger business centres, which is at least an incentive to better design in the erection of business and mercantile structures.

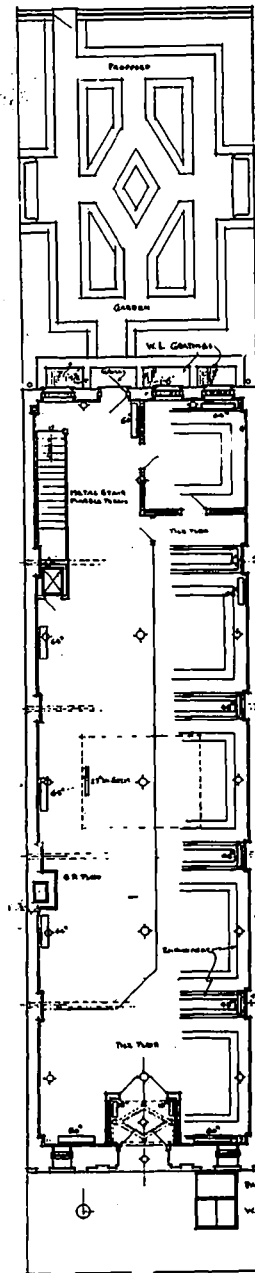


BASEMENT.

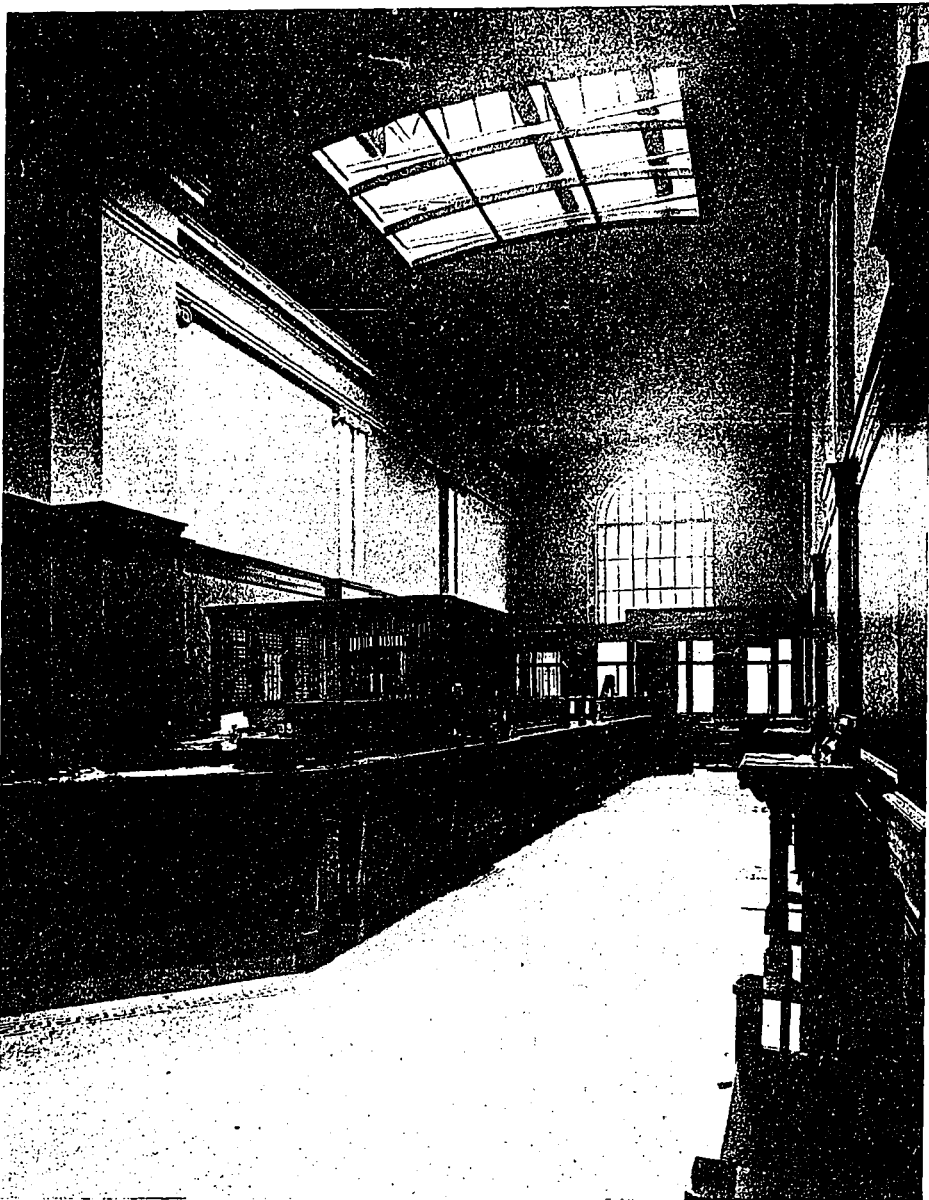


BRANCH OF ROYAL BANK, TORONTO.

F. S. BAKER, F.R.I.B.A., ARCHITECT.



GROUND FLOOR.



BANKING ROOM, BRANCH OF ROYAL BANK, TORONTO.

F. S. BAKER, F.R.I.B.A., ARCHITECT.

A number of recent examples of this class of work are illustrated in this issue, most of which represent structures erected during the war and which have been the means of considerable business and employment to the various building interests. Many of these subjects are quite noteworthy productions, and taken collectively, are not only interesting on account of the diversity of designs but as indicating the manufacturing and natural resources of the country and the general confidence which have justified the erecting of these premises during the present distressing times.

New Branch of Royal Bank, Toronto

This branch of the Royal Bank of Canada was opened for business in the latter part of March, and was designed to provide an ample and wholesome office, which would have an appearance of dignity and size, although composed of only one storey.

The vaults, cloak rooms, lavatories, etc., all being in the basement, which is reached by a marble stairs and an hydraulic elevator, the banking floor is clear of obstruction.

The public space has a marble mosaic floor with dados and counters of oak panelling, at the end of which the manager's office is placed. At this point also is an entrance through which customers may reach the safety deposit vaults located in the basement.

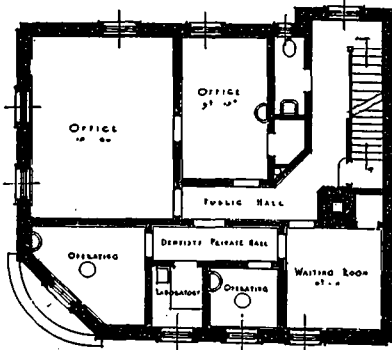
The large divided circular headed metal window sash at each end of the banking room with the central skylight of leaded glass in the vaulted ceiling twenty-five feet above the floor, provides the day lighting, while the one hundred and sixty electric lamp and wall reflectors concealed in the cornice shining on the white ceiling and supplemented by wall brackets and desk lamps, indirectly illuminate the room.

The general color scheme of the interior is a light yellowish cream with walls below of dull gold and deep brown oak woodwork.

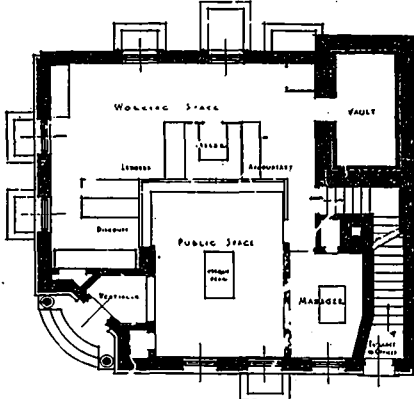
The exterior is of rubbed Indiana limestone ashlar with some carving and mouldings, including a main cornice and balustrade of fair proportions.

The facade is in the form of a triumphal arch as built in Rome or Naples and detailed in the Italian Renaissance style. Although constructed in war time and during a very severe winter, the building was completed without a hitch in any department within eight months by local contractors.

A small garden at the rear of the banking premises was originally contemplated, and while this has not been carried out, it is something which can quite easily be developed at any time. The accompanying ground floor plans indicate the proposed layout at this point, and should the suggestion be adopted by the management later on it will not only result in rather a somewhat unusual feature, but will also provide direct ingress to the banking room to clients who might wish to save time by entering from the rear street.



UPPER FLOOR.



GROUND FLOOR.



BRANCH OF BANK OF BRITISH NORTH AMERICA.

QUEEN STREET AND BEECH AVENUE, TORONTO.

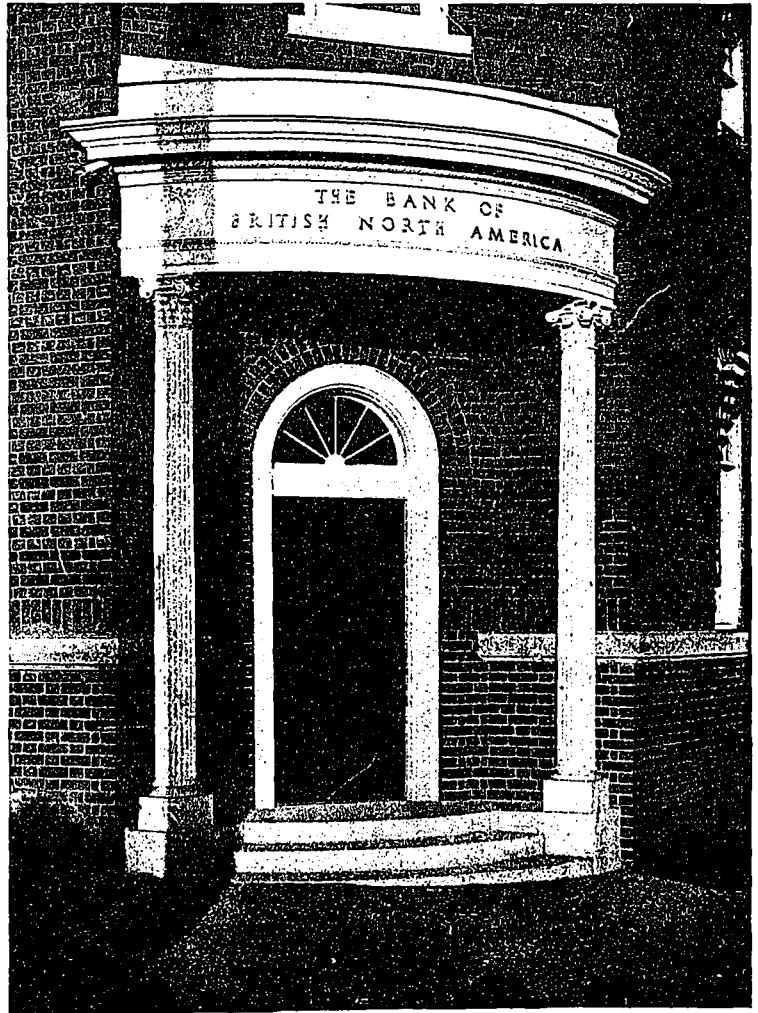
New Branch of Bank of British North America

One of the conditions in the erection of this building was speed of construction, since it was necessary for this branch to move out of temporary rented quarters across the street August 15th, 1917. Excavation was begun on April 3rd, 1917, the brick work completed May 18th, the banking room finished and occupied by the staff July 25th, and the entire building completed August 31st. The whole work except fittings and fixtures was let on a cost plus percentage basis, with a guaranteed maximum price and a bonus for any amount saved from that price.

The site is 40 feet on Queen street east, by 60 feet on Beech avenue, with a 23 feet boulevard on Beech avenue, and a drop of 7 feet 6 inches from the north-west to the south-east corners. The owner asked for a corner entrance at the street level, and an entrance to the offices upstairs from Queen street. Consequently, although the grade to the west was much reduced, the banking room floor is below the grade along the west and north walls, and the entrance to the offices is 2 feet 3 inches below the banking room floor.

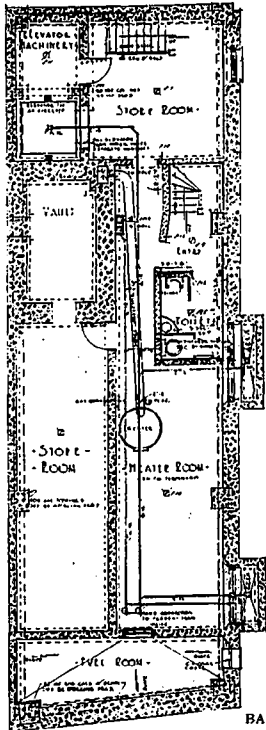
The exterior is of a simple Georgian character. The outside walls are of interlocking tile, faced with red stock brick

laid in Flemish bond below the water table, and in English bond above that point. The water

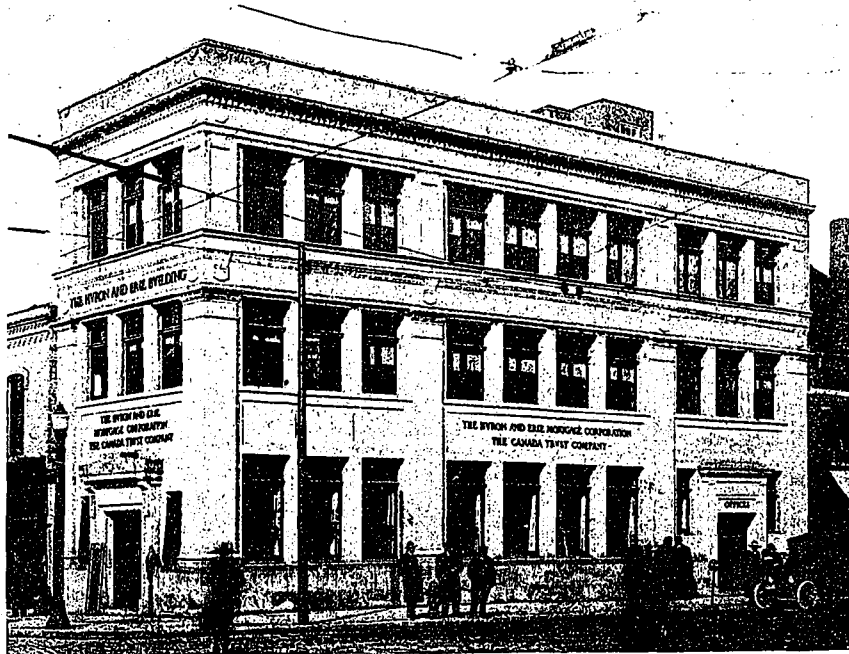


DETAIL OF ENTRANCE.

SHEPARD & CALVIN, ARCHITECTS.

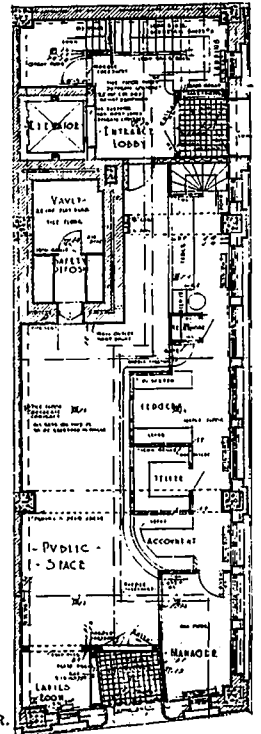


BASEMENT.



HURON AND ERIE BUILDING, WINDSOR, ONTARIO.

WATT & BLACKWELL, ARCHITECTS.



GROUND FLOOR.

table and the sills are of Indiana limestone, the main entrance steps of grey Stanstead granite, and the woodwork painted white with applied hand-made wood letters painted dark green forming the inscription on the cornice.

The general arrangement is explained in the accompanying plan. The banking room has a red quarry tile floor in the public space, while the remainder of the floors throughout are maple. The banking room fittings are of birch finished a dark brown tone; and the walls below the chair rail are covered with burlap finished to match the fittings, and are light green above on sand stucco finish. The ceiling has a simple

moulded cornice and is done in cream color. The dentist's suite upstairs was laid out in consultation with the prospective tenant and the firm supplying his professional equipment. The trim throughout on this floor is of pine.

The building proper cost 29 cents per cubic foot, and complete with fittings, blinds, awnings, weatherstrips, sodding, lettering on windows, etc., 33.7 cents per cubic foot.

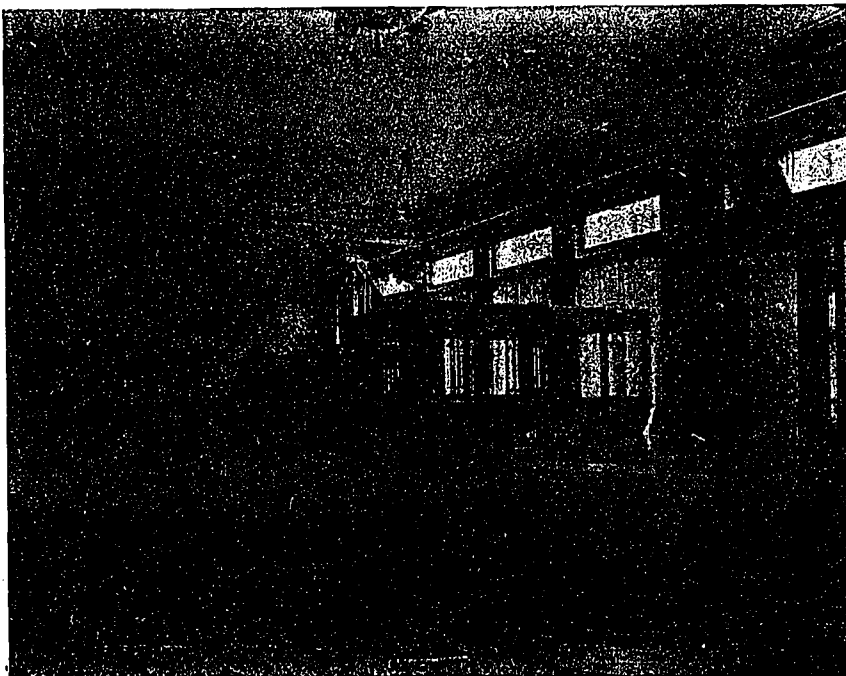
Huron and Erie Building, Windsor

The Huron and Erie Building recently completed at Windsor, Ontario, serves as a branch of the Huron & Erie Mortgage Corporation and Canada Trust Company, with head office at London, Ontario.

The frontage is 27 feet on Ouellette avenue and 72 feet on Pitt street; entrance to the banking room being from the former thoroughfare, and to the upper offices from the latter.

As the building is situated at one of the most central business intersections, it makes the location most desirable for modern office accommodations, and the walls have therefore been designed for a future addition of four more storeys.

While this will eventually add to the prominence of the building, the present exterior which is of Bedford stone, is noteworthy on account of its symmetrical lines



BANKING ROOM, HURON AND ERIC BUILDING, WINDSOR, ONT.

which give a feeling of dignity and strength.

In the banking quarters the treatment is carried out along very simple lines, the walls being of Caen stone and the only enrichment consisting of a cornice. The floor is of sand brown Grueby tile, 2 x 1 inch, laid herring-bone with green inserts. The woodwork is of quartercut oak in dull finish; and the color scheme such as to give a pleasing and restful general effect.

Office suites are on the two upper floors; these being served by an elevator and stairs having a wainscot of marble.

The building is fireproof throughout, and cost, inclusive of the site, \$35,000.

In the basement are large storage rooms, boiler room, elevator machinery, lower vault, fuel room and toilets for the staff, all of which are grouped in a compact and convenient arrangement.



MERCHANTS BANK OF CANADA, WINDSOR, ONT.

HOGLE & DAVIS, ARCHITECTS.

New Branches of The Merchants Bank

In pursuance of its policy of housing its branches in buildings worthy of its own standing and the importance of the various towns in which they are located, the Merchants Bank of Canada has lately erected new branch banks at Kitchener and Windsor, Ontario, and on Harvard avenue, Montreal.

The chief idea followed in planning these three buildings was to give the maximum amount of space for the banking room. This was obtained by enclosing the managers' rooms with wood and glass screens instead of solid plaster partitions, and by putting the vaults, stairs, etc., in subsidiary positions.

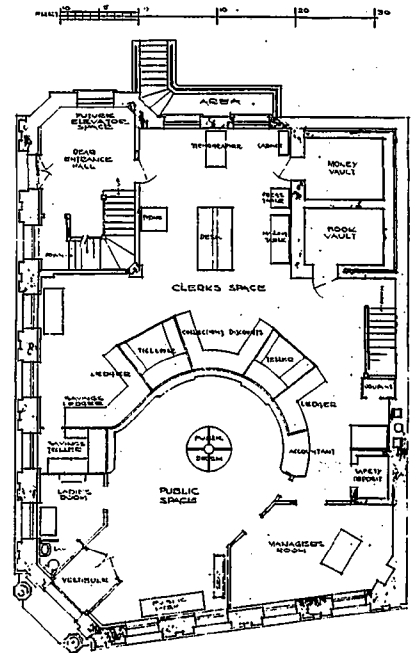
The buildings at Kitchener and Windsor are three storeys in height so as to conform with the other adjacent buildings and also with the object of renting the upper floors for offices.

The building on Harvard avenue, Montreal, is situated in a new suburb where height is not required and where offices would be of little or no value. It is therefore only one storey high with the clerks' quarters consisting of two rooms and a bathroom on a mezzanine floor at the rear.

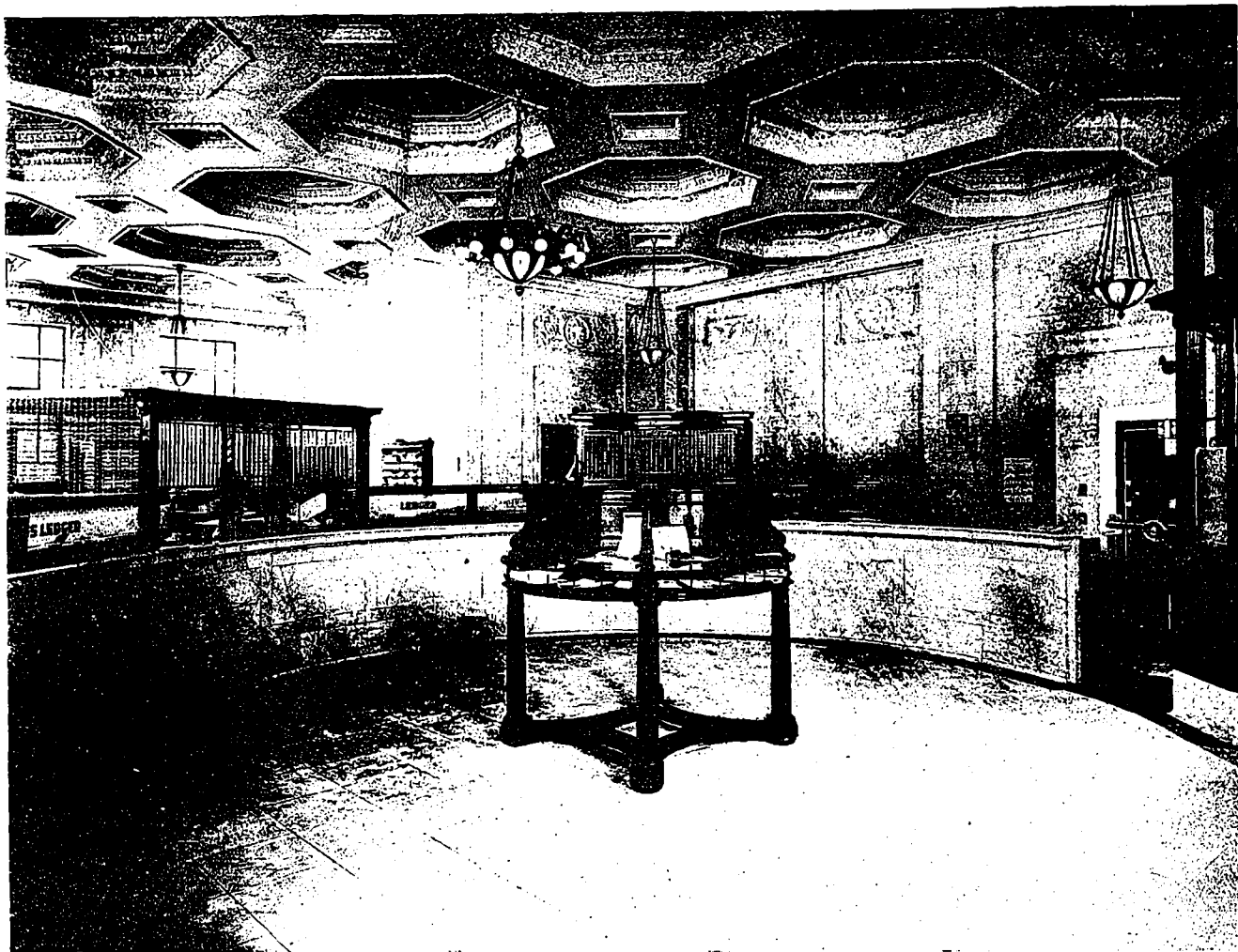
The sites of the three buildings differ widely from one another. The branch at Kitchener is

rectangular with a frontage on two streets. As the side street is not of great importance the bank entrance was placed in the centre of the principal facade, with the office entrance on the side street. This gives a symmetrical plan with the manager's room on the right looking out into the two streets, and the ladies' room on the left. Between these two is semi-circular marble counter with the vault doors in the rear.

At Windsor the building fronts on two streets which meet at an acute angle and has the entrance across the corner of the structure. By forming a circular counter



GROUND FLOOR PLAN.



BANKING ROOM, MERCHANTS BANK, WINDSOR, ONT.

HOGLE & DAVIS, ARCHITECTS.

with the manager's room on one side and the ladies' room on the other, it was possible to obtain a well co-ordinated scheme giving a symmetrical and impressive effect.

The building on Harvard avenue, Montreal, faces on two streets forming an obtuse angle with the entrance placed in the centre of the Sherbrooke street front. A good size manager's room is obtained in the acute angle of the banking room front and party walls.

Windsor and Kitchener Branches

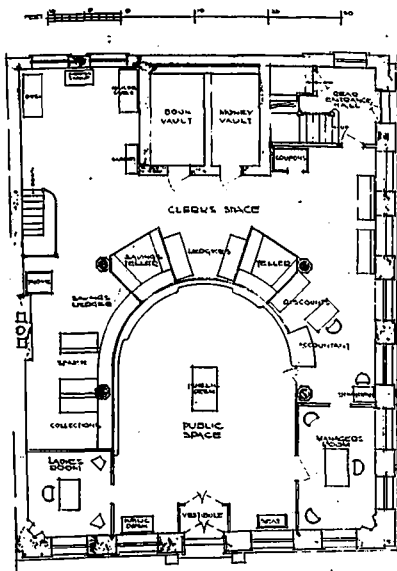
Both the Windsor and Kitchener branches are of stone in classic Italian design, the rear walls being of buffed brick harmonizing with the stone with plain stone sills, band courses, etc.; the one at Windsor having a base course of polished granite. In both cases the portion of the facade enclosing the ground or banking room floor, is treated in a distinctive manner from the two upper storeys, a strong cornice at the first floor level accentuating the banking quarters and a deep frieze with "The Merchants Bank of Canada" in high relief and an Ionic cornice and open ballustrade completing the upper scheme.

Entrance to the Kitchener branch is through a mahogany doorway having an ornamented fan-light. This door is in two leaves, each leaf

consisting of one long glass panel covered with an ornamented grille. At Windsor the door is of iron with inner doors of mahogany and glass. These doorways lead through mahogany and glass vestibules into the banking rooms.

A somewhat similar treatment has been adopted for the interior of the banking rooms of both of these structures. The walls are paneled in Caen stone or plaster with ornamental panels at intervals around the room. The ceilings are beamed or coffered with enriched ornament. The building at Kitchener has four columns and the ceiling beams and cornice are treated in classic Doric. There are no columns at Windsor, and the ceiling is treated as one surface with deep octagon coffers, a small moulding forming the juncture of the ceiling and walls.

The public space of the banking rooms is laid with white Italian marble tiles in simple "masonry" pattern. The counters are of Botticino marble and are semi-circular in design, and the woodwork and the manager's screens and fittings is of mahogany. White ceilings and light colored walls with the buff marble and the small amount of mahogany used, together with the exceptionally large window space, make the interior of these banking rooms noticeably light.



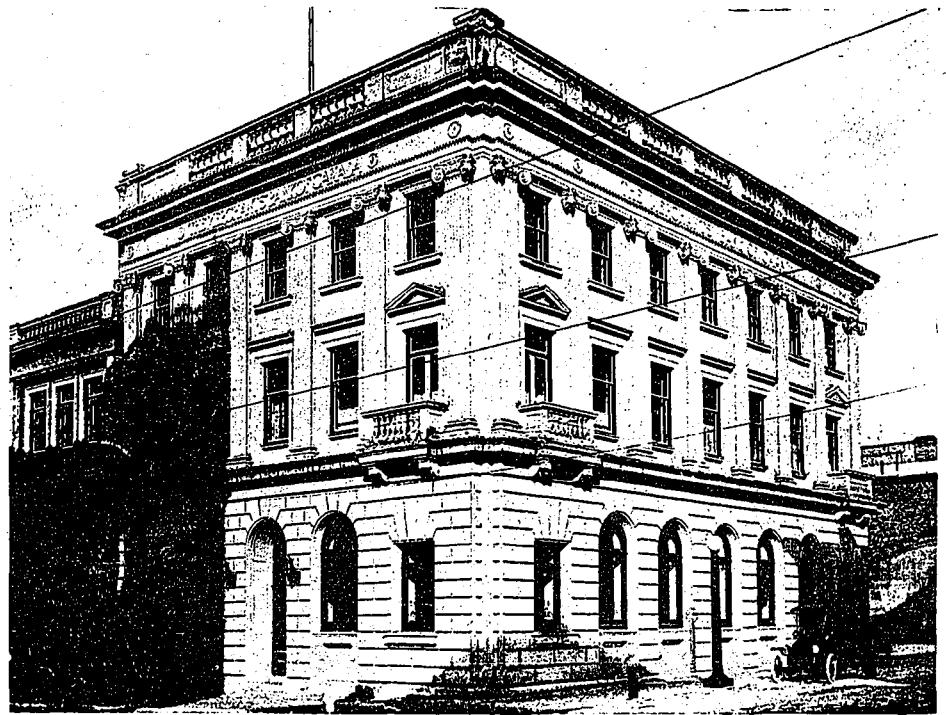
GROUND FLOOR PLAN.

The counters are all open with low screens in front of the "Ledgers," "Collections," etc., and have high screens only in front of the tellers' cages. These tellers' cages are kept fairly low and are simple in design so that the fittings do not detract from the spacious open appearance of the banking room.

Desks fitted with thick plate glass tops, with glass divisions below for cheques, drafts, etc., are provided in the public space, as are also special tables and chairs for the women clients of the bank.

The vault accommodation is exceptionally large. Both money and book vaults are provided on the ground floor and large storage vaults are situated in the basement. In the Windsor branch a special safety deposit vault is provided adjacent to the manager's room and opposite to the gate between the clerks and the public space. This vault is equipped with special safety deposit boxes, and has a heavy vault door and day gate. At the Kitchener the safety deposit boxes are placed in the main vault, with special coupon boxes conveniently placed for the use of the customers.

The upper floors of these buildings are reached by broad and easy staircases, and in the Windsor premises space is provided for a passenger elevator if such should



MERCHANTS BANK OF CANADA, KITCHENER, ONT.

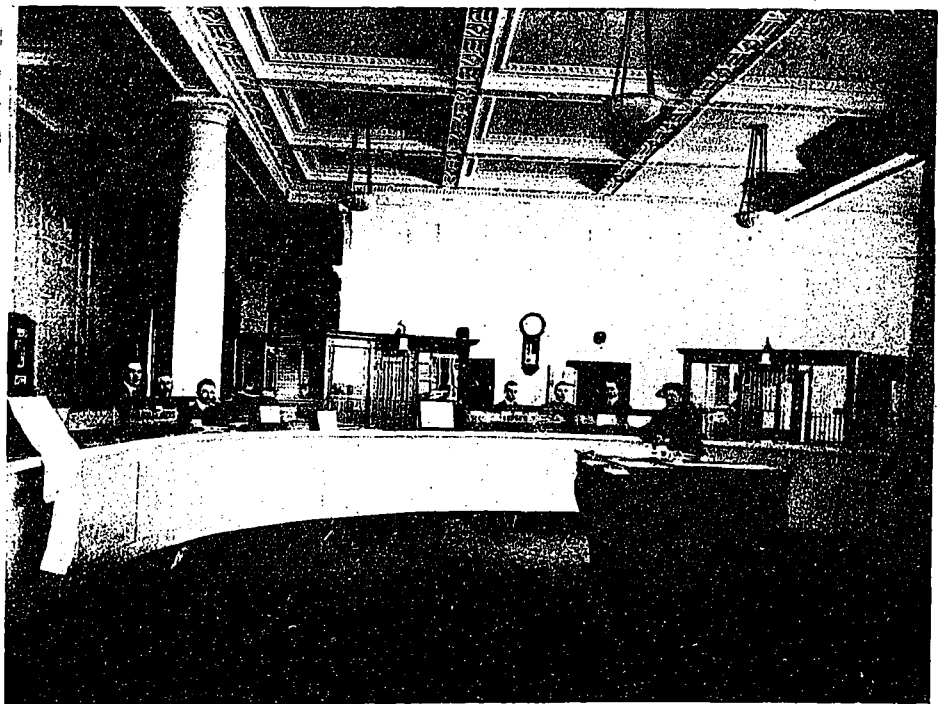
HOGLE & DAVIS, ARCHITECTS.

be found necessary at any future time.

Harvard Avenue Branch, Montreal

In the interior of this branch of the Merchants Bank, the scheme to a certain extent follows the above description, only here, instead of marble, the counter is of mahogany with a Botticino base. The general treatment gives a spacious effect, and the public and clerks' space is exceptionally well lighted.

This building is in buffed brick with sandstone trimmings, and a feature of the facade is the large semi-circular doorway, which is deep-



BANKING ROOM, MERCHANTS BANK, KITCHENER, ONT.



MERCHANTS BANK OF CANADA, HARVARD AVENUE, MONTREAL.

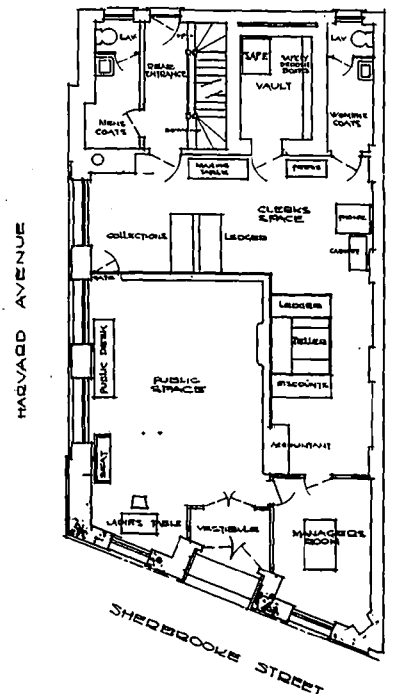
HOGLE & DAVIS, ARCHITECTS.

ly recessed to give a deep shadow. The win-

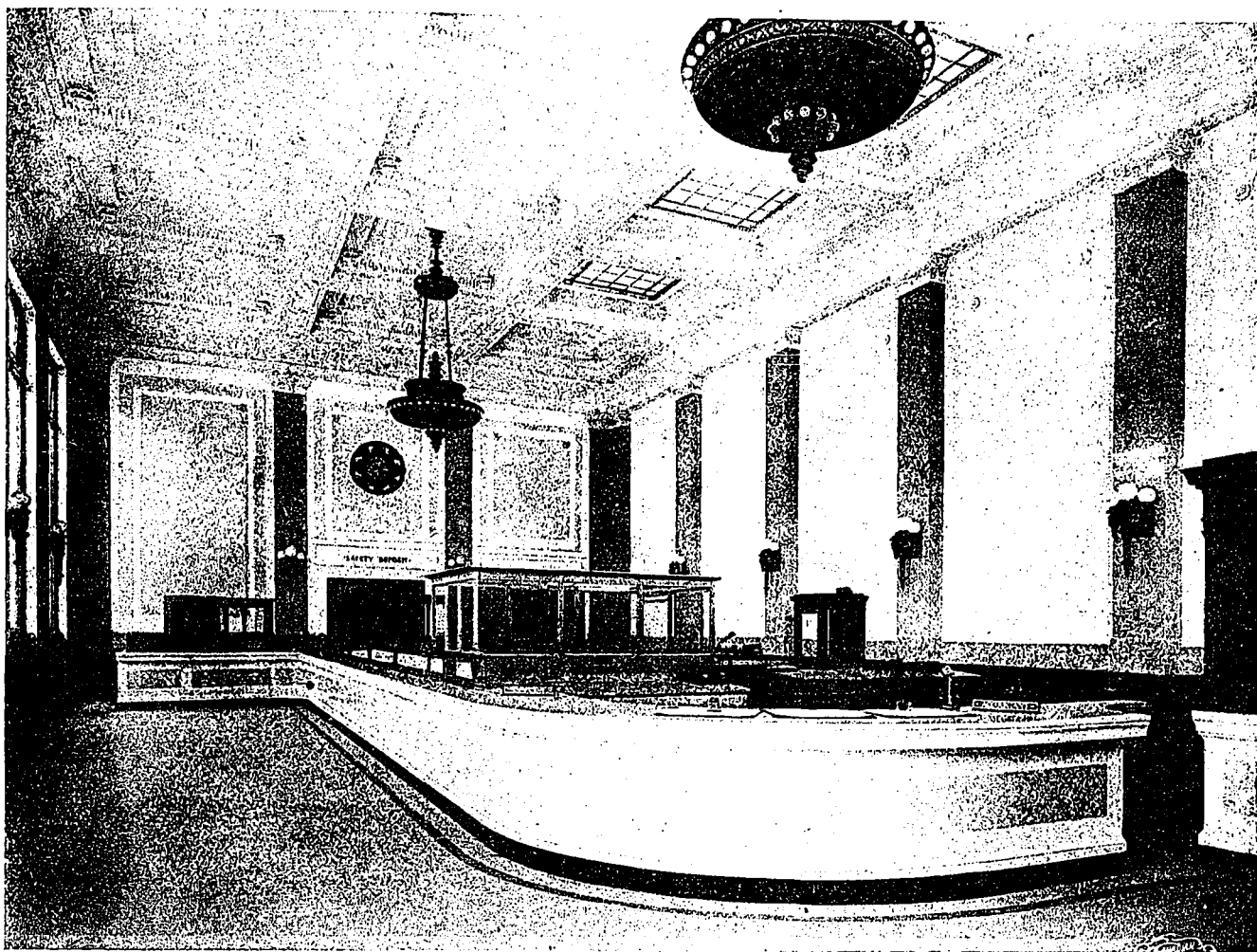
dows on the Harvard avenue side have similar semi-circular heads, but are not so deeply recessed. Another interesting fea-



BANKING SPACE, MERCHANTS BANK, HARVARD AVENUE, MONTREAL.



GROUND FLOOR PLAN.



BANKING ROOM, MERCHANTS BANK, VANCOUVER, B.C.

SOMERVELL & PUTNAM, ARCHITECTS.

ture is a comfortable suite on the mezzanine floor over the vaults and lavatories, which is occupied by one of the bank staff. By this arrangement the bank is not left unoccupied at night, and it does away with the necessity of providing a large and expensive upper floor.

The electric fittings in all the three buildings above described are in bronze, and of simple design. Large ornamental lanterns are provided outside the different structures emphasizing the entrances. All three buildings are heated with hot water.

The Merchants Bank, Vancouver

One of the more noteworthy of the Western branches of the Merchants Bank of Canada is the recently completed building at Granville and Pender streets, Vancouver, B.C. This building is three storeys high with frontages of 50 and 104 ft. and is of reinforced concrete construction with stone, terra cotta and brick walls. The exterior is of Haddington Island stone backed with brick and terra cotta trimmings, the whole resting on a grey granite base course 5 ft. in height. The stone is very white in color and is exceedingly well matched by the terra cotta courses. There is a projecting stone cornice at the first floor level and a terra cotta

cornice at the roof level surmounted by a parapet with hammered copper cresting. The ground floor windows have ornamental iron frames 19 ft. 6 inches in height by 8 ft. 6 inches in width and are glazed with plate glass. Similar frames are also used for the upper storey windows with cast iron facias at the second floor level. The treatment of these window openings produces the general effect of a building with two high storeys rather than that of a three storey structure.

Richly carved stone work encloses the opening of the main entrance. The doors here are of cast bronze and are 12 ft. in height. These doors fold back into pockets in the vestibule in the day time and the service doors to the bank at the inner wall of the vestibule are double-acting. Over the entrance doors on a black and gold marble slab is a cast bronze bas-relief of the crest of the institution. The walls and floors of the vestibule are laid in French marble and the whole effect is unusually satisfying and pleasing.

The entire ground floor of the building is given over to banking purposes with the exception of a small area serving as entrance to the stairs and elevator to the upper offices. In addition to the ground floor space there are two mezzanine floors situated at the rear, each giv-



MERCHANTS BANK OF CANADA, VANCOUVER, B.C.

SOMERVELL & PUTNAM, ARCHITECTS.



CLERKS' SPACE, MERCHANTS BANK, VANCOUVER, B.C.

ing an additional working area of some 450 sq. ft. The upper mezzanine floor serves as a guard room while the lower is given over to the stenographers' toilets and filing space. Provision has also been made in the framing of the building for a future mezzanine floor over a portion of the present working space in the banking room at the present upper mezzanine level. This mezzanine will allow for an additional working area of 1,300 sq. ft. along the south side of the banking room. Access to same will be obtained by the present stairs to the upper mezzanine, and it will, owing to the banking room ceiling being fully 35 ft.

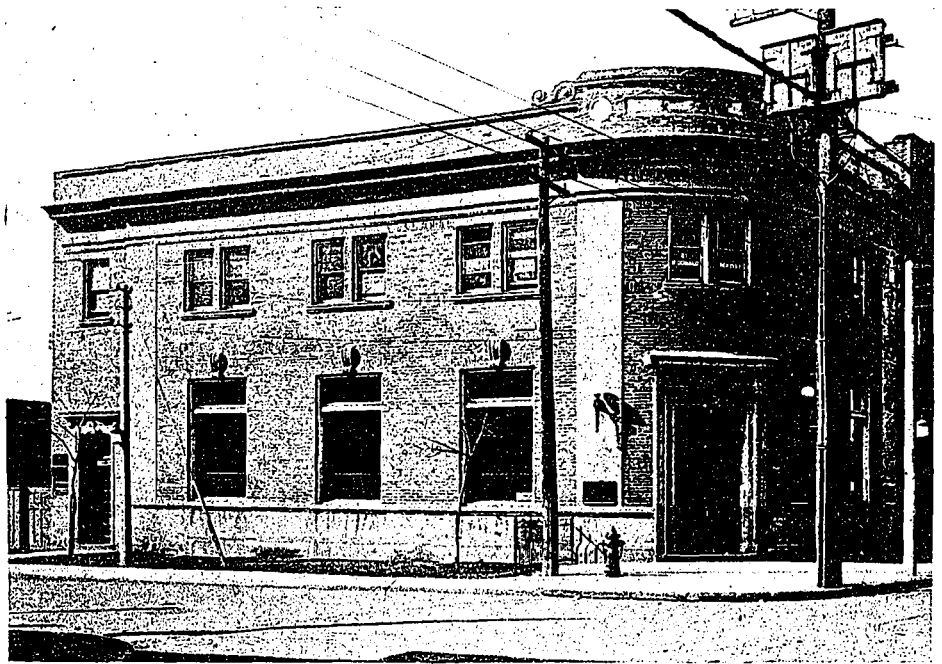
high, be placed 20 ft. above the main floor, and will therefore not materially detract from the present pleasing general effect of the banking room.

In dimensions the banking room is 84 ft. in length by 46 ft. in width, with a clear height of ceiling from floor to the underside of lowest beam of 29 ft. 6 inches. The natural light is excellent, being obtained from eight windows, each with a clear glass area of 8 ft. by 19 ft., and by three sky-lights in the light court over the south side of the room, which has a total glass area of 250 sq. feet. The colors of the walls and ceilings tend to reflect this

light to the best advantage. The walls are of Caen stone of a pale buff shade jointed in courses 15 ft. high; and the ceiling, which is coffered, has been left white. The floor of the banking room is of marble of a pale grey shade with borders and base of a black and gold color setting off the grey. The counter and wainscots are in Botticino marble with Tavernelle panels, and Botticino marble is also used for the pilasters. Both these marbles are of a creamy buff shade and harmonize well the treatment of the wall.

Bronze in antique statuary finish is used for the tellers' cages, counter screens and other metal work in this room. The cages are a special feature, the upper portions being made of cold drawn steel piano wire, plated in bronze and drawn very tight in a diamond pattern making a strong but light appearing snatch proof cage. The fixtures and the wainscot of the working space is of quarter-sawed white oak finished in a grey shade in tone with the other materials.

Quarter-sawed white oak similarly finished is also used for the screen of the manager's office. This office is a well contained department in itself. In addition to the usual flat top desk, is a built-in standing work desk on either side of which are



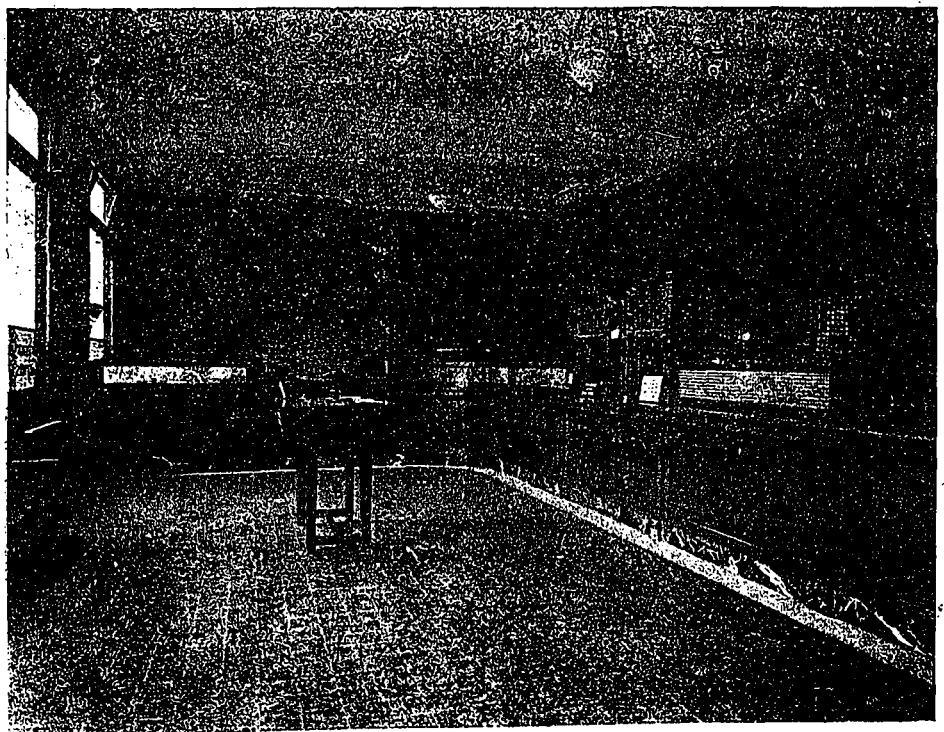
DOMINION BANK, DUNDAS AND MEDLAND STREETS, TORONTO.

JOHN M. LYLE, ARCHITECT.

built-in cupboards containing standard filing equipment. One side has letter files with book case above, while the other side has letter files with report files above, made to take standard report forms.

Under the counter at the accountant's space are built-in spaces for all special forms to be kept under lock and key as well as a keyboard for all duplicate keys to the building and safety deposit boxes.

The whole working space is inter-connected with a complete buzzer system and inter-communicating telephone. The artificial lighting is derived from wall brackets and desk lamps, each



BANKING ROOM, DOMINION BANK, DUNDAS AND MEDLAND STREETS, TORONTO.



DETAIL OF ENTRANCE.



BANK OF TORONTO, ARTHUR STREET AND OSSINGTON AVENUE, TORONTO.

equipped with an individual control switch. The two ceiling fixtures over the general space are 7 ft. in diameter, and each carry one hundred and six lamps controlled by seven circuits. Two-thirds of the lamps in each fixture are



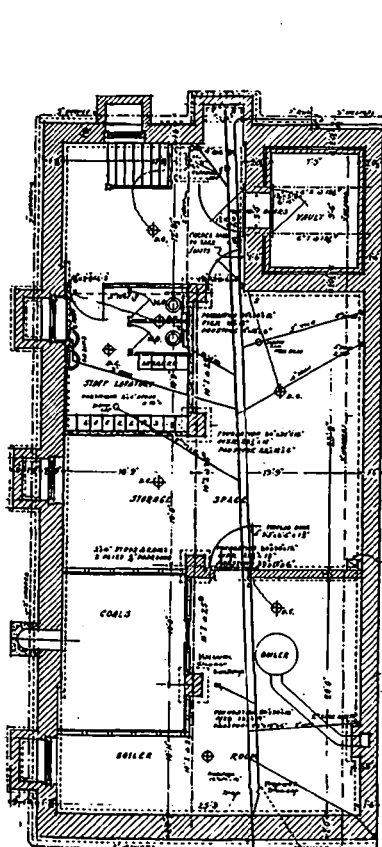
BANKING ROOM, BANK OF TORONTO, ARTHUR STREET AND OSSINGTON AVENUE, TORONTO.

JOHN M. LYLE, ARCHITECT.

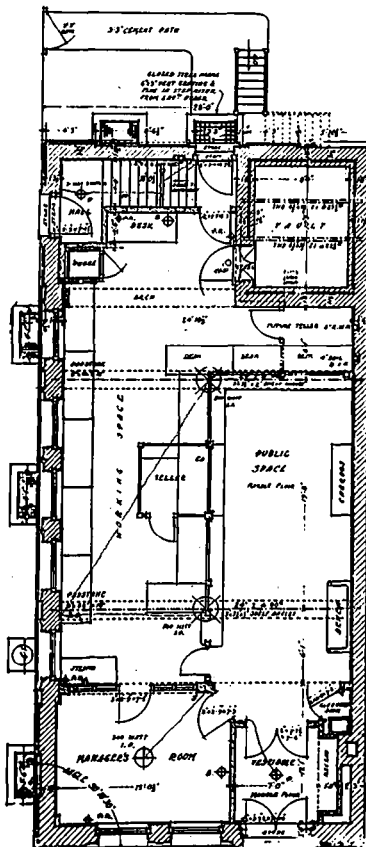


BRANCH OF CANADIAN BANK OF COMMERCE, BLOOR AND LIPPINCOTT STREETS, TORONTO.

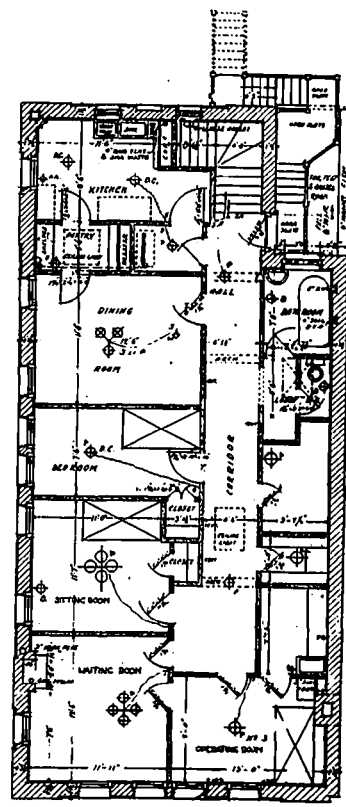
V. D. HORSBURGH, F.R.I.B.A., ARCHITECT.



BASEMENT.



GROUND FLOOR.



UPPER FLOOR.

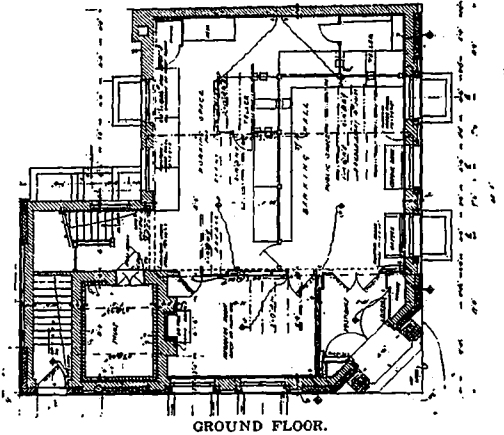


EARLS COURT BRANCH, CANADIAN BANK OF COMMERCE, TORONTO. V. D. HORSBURGH, F.R.I.B.A., ARCHITECT.

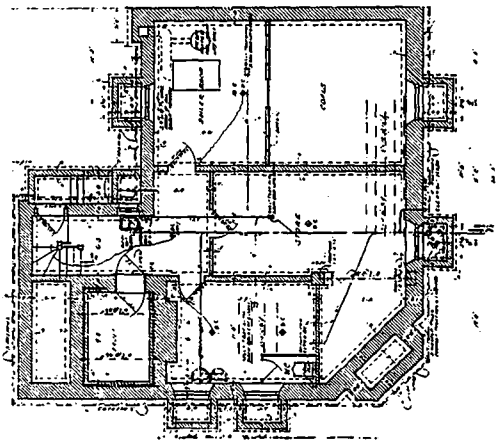
straight reflected direct lighting. By the skillful placing of concealed reflectors, practically



BRANCH OF CANADIAN BANK OF COMMERCE, DANFORTH AND BROADVIEW AVENUES, TORONTO. V. D. HORSBURGH, F.R.I.B.A., ARCHITECT.



GROUND FLOOR.



BASEMENT.

all of the light from the indirect lamps is directly reflected from the ceiling with the exception of very few lamps whose function is to relieve shadows in the fixture itself.

Practically three-quarters of the entire basement area is devoted to the bank's needs; the remaining portion being taken up by the boiler room, switchboard room and similar offices. The accommodations here include the book and cash vaults and storage space and toilet and locker room for the male staff. A staircase at the rear gives direct communication with the banking room, and there is also a hydraulic book-lift serving the book vaults.

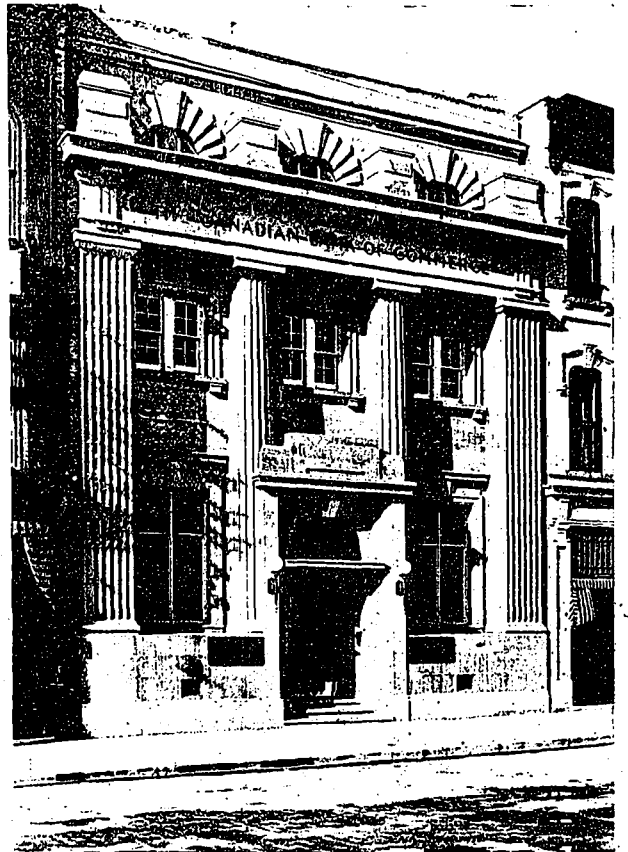
The safety deposit vault is on the ground floor of the public space with an alcove adjoining for the private examination of papers. The vault is constructed of reinforced concrete eighteen inches thick with heavy modern steel door equipped with double combination and a grille day-gate. The vault walls and door are completely protected with electric



CANADIAN BANK OF COMMERCE, BARRIE, ONT.

V. D. HORSBURGH, F.R.I.B.A., ARCHITECT.

CANADIAN BANK OF COMMERCE, STRATFORD, ONT.



steel linings. There are three hundred and twenty safety deposit boxes installed in this vault.

The book vault in the basement occupies 240 sq. ft. of floor space, and is enclosed in double brick walls with an air space between connected to a ventilating fan. The cash vault covers an area of 81 sq. ft. and has walls 2 ft. thick of reinforced concrete, this material also being used for the floor and roof of vault. The inner lining of this vault consists of 1/2-inch steel plate with solid angle corners, and the outer door is 6 inches thick, consisting of five layers of chrome and open-hearth steel placed alternately. In addition there is an inner door three inches thick also made of alternate layers of chrome and open-hearth steel. The outer and inner doors are each equipped with two combinations and are time-locked with a quadruple action time-lock; there being twenty-four 2-inch bolts on the outer door and a heavy pressure system on both this and the inner door. The weight of the doors and frames is 30,000 pounds.

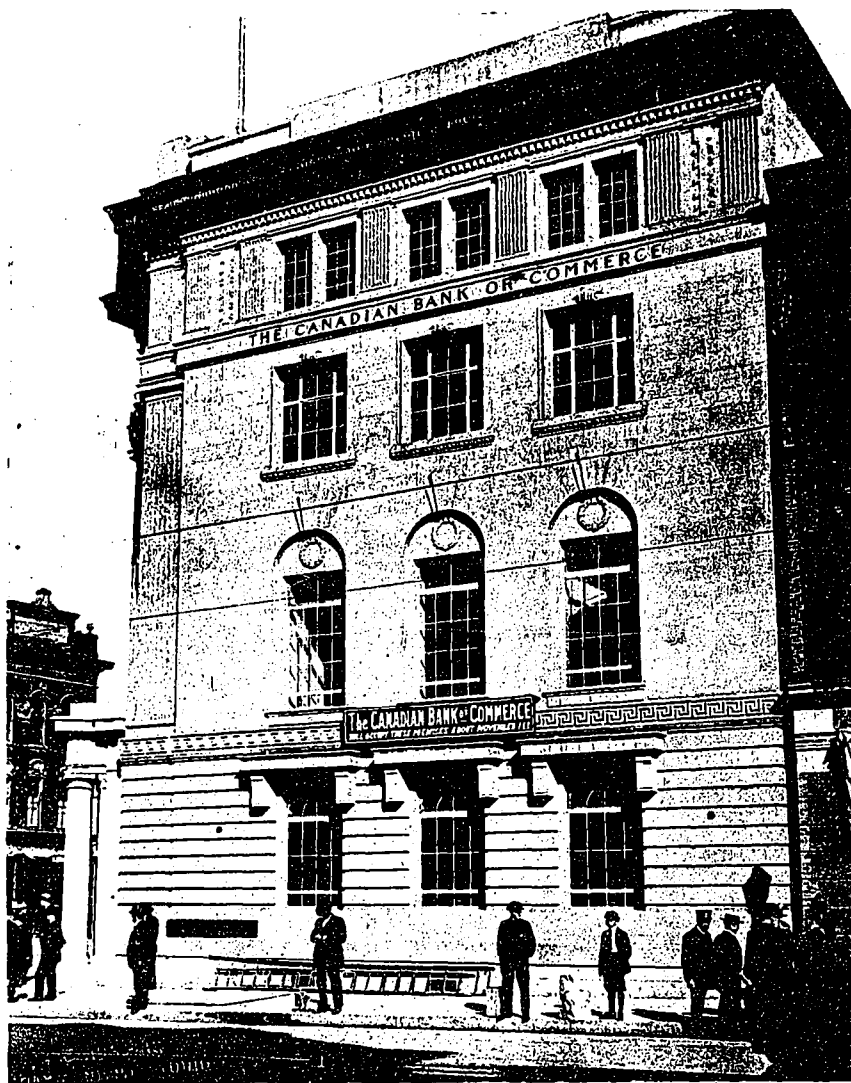
Canadian Bank of Commerce Branches

Among the subjects in this issue are a number of illustrations comprising a representative selection of the usual branch buildings erected by the Canadian Bank of Commerce, during the past five or six years. The most notable of these is at Windsor, Ontario, where the business of an important frontier point requires a commodious

building of the best class. The restricted but valuable corner site, and the necessity for placing the entrance at the corner, led to the planning of an octagonal banking room with concentric counters. The building is of first-class fireproof construction, and contains in addition to the ordinary equipment of such branches, specially heavy vault doors and linings. It is also provided with a separate safety deposit vault, an electric elevator, and a blower ventilating system.

The building at Danforth and Broadview avenues, Toronto, which is now with the opening of the viaduct coming into due prominence, is

CANADIAN BANK OF COMMERCE, WATERLOO, ONT.
V. D. HORSBURGH, F.R.I.B.A., ARCHITECT.



CANADIAN BANK OF COMMERCE, WINDSOR, ONT. V. D. HORSBURGH, F.R.I.B.A., ARCHITECT.

a noteworthy combination of buff Indiana stone and local brick. The plan is an interesting solution of a problem involving the adjustment of a building to a triangular site.

The branch at Nanaimo, B.C., is also on a triangular lot, which accounts for the peculiar curved plan of the entrance front, although the structure otherwise is rectangular in plan; the exterior materials consisting of terra cotta and coast brick.

In the Earls court branch, Toronto, situated at the corner of St. Clair and Dufferin streets, the exterior has been given a very broad treatment in artificial stone and tapestry brick for the purpose of giving an important intersection of a street so wide as St. Clair avenue due emphasis without exceeding the limit of size appropriate to an outlying suburban branch.

The branch at Bloor and Lippincott streets, Toronto, is typical

of the ordinary city branch on a corner lot of moderate width. The exterior exhibits a successful combination of tapestry brick and terra cotta in unusually dark tones.

The street front of the bank at Barrie, Ontario, is faced with a very light unglazed cream terra cotta. The jointing in this case is close and accurate far beyond what is usually expected in this material. This building is roofed with red tile.

An example where the front is wholly erected of Bedford stone is seen in the branch at Stratford, Ontario. The banking room of this structure is very large and is top lighted, the upper floors being confined to a restrictive area at the front.

The branch at Waterloo, Ontario, is mainly notable for the emphasis given to the entrance doorway and the unassuming treatment of the other parts of the front.

The East End Branch, Vancouver, B.C., is constructed of reinforced concrete with granite and terra cotta. It is quite a good sized building, and in keeping with the policy of this institution of erecting buildings consistent

with the importance of the city or district in which they are located.

The chief interest in the branch at Ayers' Cliffe, Quebec, lies in the fact that it is an ex-



CANADIAN BANK OF COMMERCE, FORT FRANCIS, ONT. V. D. HORSBURGH, F.R.I.B.A., ARCHITECT.

ample of a design which has been worked out with great exactness for small towns and villages. It has been repeated at a number of points in different materials. The building at Brierecrest, Saskatchewan, is of this type, but of frame construction.

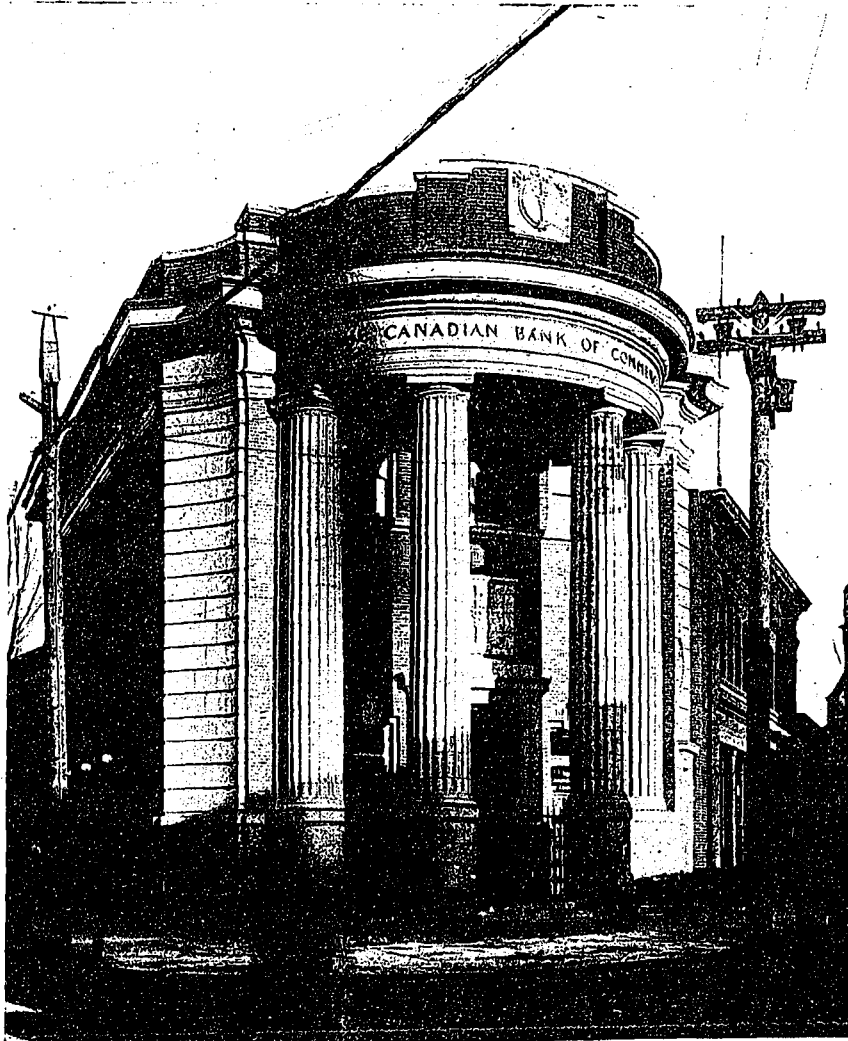
One of the most important structures in the group is the imposing building at Quebec, P.Q., which is erected in Deschambault limestone. The site was at one time the river beach twenty feet below the existing street grades. A rigid foundation was secured by using concrete pedestal piles. The cellar floor is several feet below spring tide level, and the water was found to flow freely through the made-up soil. This condition was successfully met by the construction of the continuous floor slab and foundation walls of sandwich formation with a membrane of felt and asphalt.

The Archives Buildings at Toronto and Van-



CANADIAN BANK OF COMMERCE (EAST END BRANCH), VANCOUVER, B.C.
V. D. HORSBURGH, F.R.I.B.A., ARCHITECT.

couver, have been erected for the custody of old ledgers and vouchers. The upper part of both buildings comprises a lofty stack room several tiers in height. The stacks are strongly but simply constructed of steel angles and gas pipe, and are reached by steel plate gangways at each tier level. The Toronto building is of steel frame construction, and that at Vancouver of reinforced concrete. Both are first-class fireproof buildings, and are planned for convenient shipping and handling of heavy goods. The Toronto example contains a shredding and baling plant for the destruction of books which need not be preserved after a certain time and for the disposal of the shredded product.



CANADIAN BANK OF COMMERCE, NANAIMO, B.C.

V. D. HORSBURGH, F.R.I.B.A., ARCHITECT.

The British-American Nickel Refining Co., which has been negotiating for property on which to erect a refining plant for some time, has decided to locate on the Hull side of the Ottawa River. It is understood that representatives of the company have purchased the property known as the old Conroy piling grounds at Deschenes, upon which a nickel refining plant, to cost in the neighborhood of \$1,000,000, will be erected.



CANADIAN BANK OF COMMERCE, TABER, ALBERTA.
V. D. HORSBURGH, F.R.I.B.A., ARCHITECT.

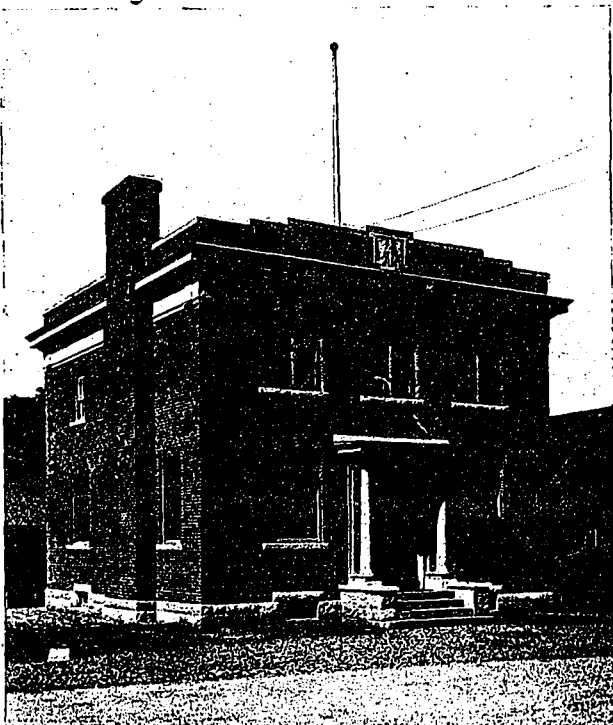
“Where The Great City Stand”

A book written by C. R. Ashbee, an Englishman, under the above title, contains the several following axioms. While these in one or two certain minor respects may not meet with a full concurrence of opinion they nevertheless epitomize a set of principles which will be more or less generally accepted.

Axiom I.—Modern civilization rests on machinery, and no system for the encouragement or the endowment or the teaching of the arts can be sound that does not recognize this.

Axiom II.—The crafts cannot be learnt in the school; the crafts can only be learnt in the life of the workman at the workshop.

Axiom III.—The purpose of the arts and crafts (understood as an aesthetic movement), is to “individualize,” to set up a standard of excellence in all commodities into which the ele-



CANADIAN BANK OF COMMERCE, AYER'S CLIFFS, QUEBEC.
V. D. HORSBURGH, F.R.I.B.A., ARCHITECT.

ment of beauty enters. The tendency of machine industry is to “standardize”—that is to say, to create as many pieces of any commodity to a given type as is economically possible.

Axiom IV.—There is a Gresham's Law in the industrial arts as there is in coinage. In the latter the bad coin tends to drive out the good. In the former the bad product tends to drive out the good product, the unskilled workman and the machine tend to drive out the skilled craftsman.

Axiom V.—Machinery is neither all good nor all bad. An intelligent community will distinguish which is which, and the aesthetic education of the community in our day should be directed towards the distinction between the good and the bad.

Axiom VI.—The distinction between what should and what should not be produced by machinery has in many trades and crafts now been made. This has been the discovery of the last 25 years.

Axiom VII.—The new relationship of man to life which machine industry has brought with it finds its fullest expression in the new life of our city. This implies that through the city and its proper adjustment to mechanical conditions will man realize again those purer values which the arts bring into life. Through the city we focus civilization.

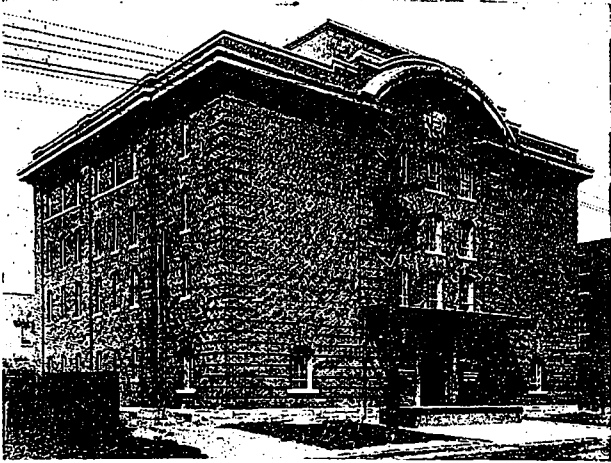
Axiom VIII.—Man's control of mechanical power has yet to be made effective. The making it effective is not a matter of inventing or exploiting new processes, it is the discovering of means whereby mechanical powers shall best be used in the public service—in other words how it shall be “socialized,” and not merely used to help men to exploit each other. As Hellenic civilization made the gentleman with the aid of the slave, so we may make the gentleman with the aid of the machine.

Axiom IX.—The arts, postulating as they do the motive of joy in their creation, and the freedom of the individual to go on creating, do not flourish under conditions where men think it right to exploit them for profit.

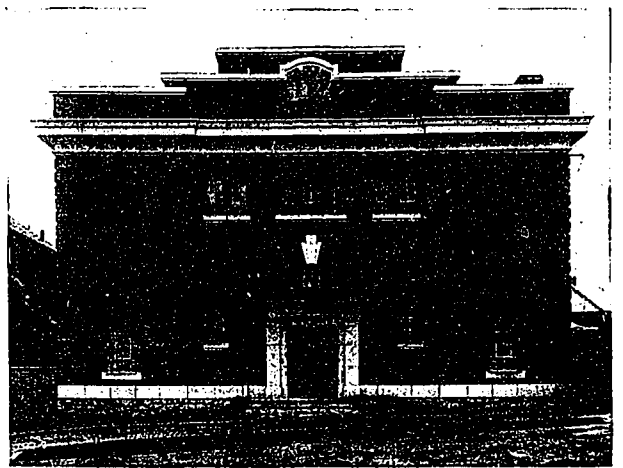
Axiom X.—In an industrial civilization the reconstructed city cannot be stable without a corresponding reconstruction of the country. Town and country should be correlated to react upon one another. This correlation is a necessary consequence of the conditions of machine industry.

Engineers' New Title

Sir Herbert Ames' bill changing the name of the Canadian Society of Engineers to “The Engineering Institute of Canada” has been adopted by the Private Bills Committee of the House of Commons.



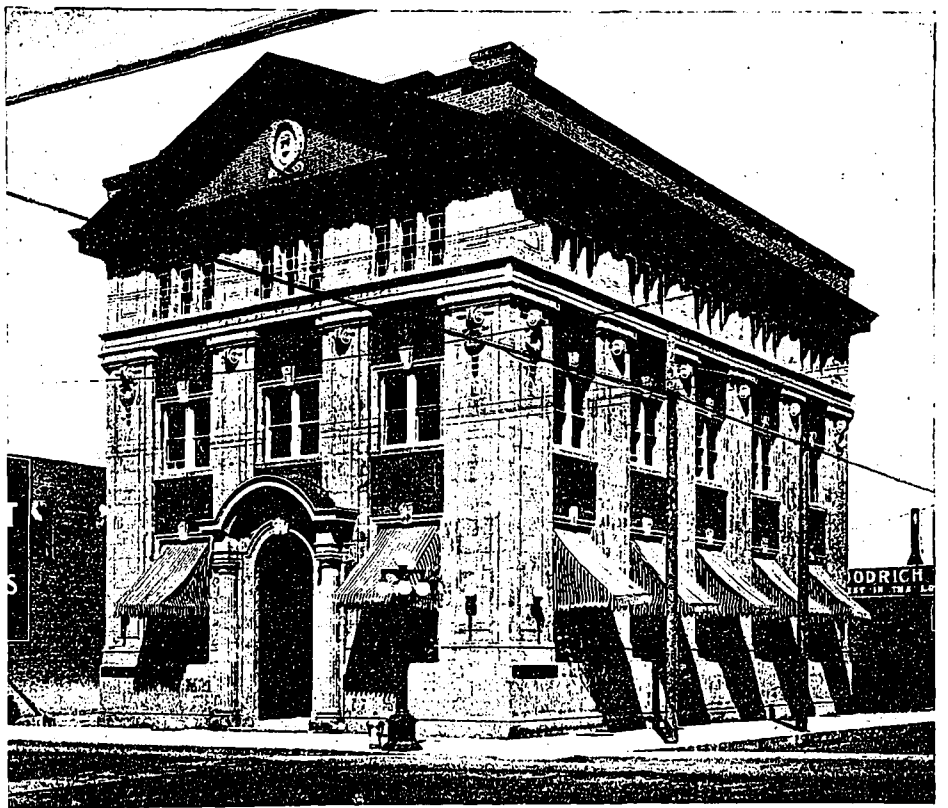
ARCHIVES BUILDING, TORONTO.



ARCHIVES BUILDING, VANCOUVER, B.C.

RECENT BUILDINGS ERECTED
BY THE
CANADIAN BANK OF COMMERCE.

V. D. HORSBURGH, F.R.I.B.A.,
ARCHITECT.



BRANCH AT PRINCE ALBERT, SASKATCHEWAN.



BRANCH AT BRIERCREST, SASKATCHEWAN.



BRANCH AT RADVILLE, SASKATCHEWAN.

Fire Protection and Prevention

THE fact that the loss from fire on this continent annually amounts to approximately \$225,000,000, or more than the combined losses of all other countries put together, is sufficiently startling to make any effort to reduce this enormous waste a matter of first importance. The report recently issued by the Committee on Fire Prevention of the American Society of Municipal Improvements, of which Mr. Alcide Chausse, City Architect, Montreal, is chairman, is therefore of interest, in that it summarizes what is being done in this direction:

Reference is made to last year's meeting of the National Fire Protection Association, held at Washington, at which attention was called to the new and unusual hazards to life and property created throughout America by the present war, and which demands the utmost vigilance and initiative, not only from those in authority, but from the private citizen as well. It was urged at the time that every individual should consider himself a fire warden of the nation at this critical time, and should equip himself to serve his country by safeguarding to the extent of his intelligence and ability every form of natural and creative resource.

In its warfare against the sacrifice of human lives and property by fire the association advocated the following measures:

1. The adoption by municipalities of the standard building code of the National Board of Fire Underwriters, to the end that fire-resistant building construction may be encouraged, use of inflammable roof coverings prohibited, adequate exit facilities assured, and interior so designed and fire-stopped as to make easy the extinguishment of fires therein.

2. The adoption by all States of minimum building requirements for the protection of State and county hospitals, asylums and similar institutions outside city limits, and of small communities in which the establishment and enforcement of a building code is impracticable.

3. The enactment by each State of the fire marshal law advocated by the Fire Marshals' Association of North America, to the end that official investigation may be made of the causes of all fires, preventable fires eliminated by public education, and the crime of arson stamped out.

4. The adoption of the association's suggested ordinance providing for the systematic inspection of all buildings by city fire marshals or local firemen, to insure the vigorous enforcement of rules for cleanliness, good housekeeping, and the maintenance of safe and unobstructed exits, fire-fighting apparatus and other protective devices.

5. The enactment of ordinances similar to that of Cleveland, Ohio, fixing the cost of extinguishing preventable fires upon citizens disregarding fire prevention orders, and a more general legal recognition of the common law principle of personal liability for damage resulting from fires due to carelessness or neglect.

6. The wider general use of the automatic sprinkler as a fire extinguishing agent and life saver, and the more general adoption of the fire division wall as an important life-saving exit facility.

7. A careful study of the technical surveys of cities made by the engineers of the Committee on Fire Prevention of the National Board of Fire Underwriters covering the items of water supplies, their adequacy and reliability, fire department efficiency, fire alarm systems and conflagration hazards; and of the possibility of co-operation among neighboring cities through mutual aid and the standardization of hose couplings.

8. The adoption of the association's suggested laws and ordinances for State and municipal regulation of the transportation, storage and use of inflammable liquids and explosives.

9. The universal adoption and use of the safety match, and legislation prohibiting smoking in all parts of factories, industrial and mercantile buildings, except in such fireproof rooms as may be especially approved for the purpose by fire departments.

10. The education of children and the public generally in careful habits regarding the use of fire.

11. The co-ordination of all these activities, through a central administrative officer or body of the State or city having primary jurisdiction, for the purpose of promoting uniformity of action and efficient co-operation.

In the furtherance of these objects the association appealed for the co-operation of all citizens. It asked them to help in the dissemination of its valuable literature, and in the use of the standards of fire protection so carefully worked out by its committees to the end that the lives and substance of our people shall not continue to be dissipated by a reckless and easily preventable waste.

Coupled with the foregoing reference is also made to the Building Officials' Conference held in Washington at the same time. At this meeting a motion for the creation of a number of standing committees to consider structural standards and practices, permissible use of specific materials and modifications of building requirements in reference to the installation of fire control equipment, particularly automatic

sprinklers, was referred to the Executive Committee with power.

FLOOR OPENINGS.

Mr. Chausse's report also directs attention to the Kansas Bureau, which has adopted the following recommendations for improvements regarding stairways, elevators, hatchways, chutes and dumb-waiters, advocating that these when not in a standard fireproof or semi-fireproof constructed shaft, should be cut off at each floor opening by traps, as herein specified, viz.:

(a) Traps to be made of $\frac{7}{8}$ -inch kiln-dried matched pine, or other non-resinous wood, free from unsound knots and sap; to be securely nailed to battens with No. 13 gauge flat head, full barbed wire nails two inches long, driven in flush and clinched so as to leave a smooth surface on both sides. Battens to be $\frac{7}{8}$ -inch thick, not less than six inches wide, and not more than three feet on centres. Traps to be covered on under side with tin sheets fourteen by twenty inches, not less than one hundred and seven pounds to the box of one hundred and twelve sheets, all joints single locked; covering to lap top side of trap not less than four inches, and nail heads not to be exposed except where covering laps on top side. Traps to lap openings at least three inches. Hinges to be substantial wrought iron of "T" or strap type, with non-corrosive pins, securely bolted to trap, and if possible bolted to floor. Nails not to be used for hinge fastenings.

(b) Traps to be made similar to (a) in all respects, except that trap is to be made of two thicknesses of $\frac{7}{8}$ -inch with boards laid at right angles, or single thickness of $1\frac{1}{2}$ -inch matched pine or other non-resinous wood.

(c) Traps to be made of two thicknesses of $\frac{7}{8}$ -inch, otherwise same as (b), except that trap is to be without battens and entirely covered with tin, as per requirements for standard fire doors. All traps to close automatically by fusible link or electric attachments; details covering location of links and thermostats may be obtained upon application, and to be subject to the approval of this office. All traps on one shaft to be operated by the fusing of any one link or thermostat; all wires, chains and pulleys to be protected if necessary against mechanical injury by substantial guard strips, or from being rendered inoperative by piling stock or other material against same. All weights to be boxed in if outside of shaft, and so arranged that one side of boxing can easily be removed for accessibility. Traps to be provided with automatic flaps for covering all cable, guide and counterweight openings when same are closed; a spring must be put on the back of all flaps for closing same when the traps are released.

Note.—In buildings of ordinary joisted construction, stairway enclosure of plaster or

matched flooring of same thickness as floor, with door of same construction and self-closing with metal rope and weight or suitable spring attachment, may be accepted for stairway cutoffs. Door to be provided with a suitable snap-catch to hold same rigidly closed. Windows or transoms, if any, to be stationary and of approved wired glass.

STATE REGULATIONS.

It is pointed out that a fire prevention code containing requirements governing construction and hazards of occupancies, was passed by the 1916 session of the Louisiana Legislature, which has invested power in the State Fire Marshal for its enforcement throughout the entire State. Regular inspections of special hazard occupancies are also made whenever possible by the Chicago Fire Prevention Bureau, covering dry cleaning establishment, garages, motion picture theatres, opera houses, the examination of sprinkler systems, etc.

In Minnesota the law provides stringent rules and regulations governing the construction and use of motion picture theatres, the authority for enforcement also being in the hands of the State Fire Marshal. The statute in this State includes complete specification for booth construction and electrical equipment, prohibits the exposure of inflammable films except while being transferred from the two magazines, and sets forth complete regulations governing exits, aisles and seats. Schools and churches are exempted by the Act, where motion pictures are to be used for charitable, benevolent and educational purposes, and are not used regularly, but only on special occasions, and in these cases only when a representative of the local fire department is present. The powers of the Minnesota State Fire Marshal are further extended by a new Act granting the authority to condemn buildings in dilapidated condition where so situated to endanger life.

Other States which have adopted legislation and are giving serious consideration to the subject of fire protection are Michigan, Indiana, Massachusetts, Connecticut and Texas. In some instances the regulations are quite mild and leave room for considerable improvement. The tendency is, however, to make measures of this kind more drastic; and even in their present form they are at least an evidence of the result of the propaganda which has been carried on in the interests of fire prevention and improved building conditions.

The report concludes by entering quite extensively into the matter of defective chimneys, declaring that it is essential that furnaces should be properly installed with reference to the kind of fuel to be used, and giving a large amount of valuable information in reference to fire prevention as relating to this subject.

Efficient Safeguarding of Electrical Installations

By *TIRRELL J. FERRENZ, Architect and Structural Engineer*

EFFICIENT safeguarding of electrical installations is a subject which presents many features of interest to architects. This is attested to by the increasing emphasis placed upon the necessity for safe construction of all forms of electrical appliances and for careful inspection of their installation. It is therefore the purpose of this article to call attention to some of the more common defects of ordinary electrical installations and to point out approved methods for their elimination, so that anyone interested, although unskilled in electrical matters, may obtain a fair idea of the subject.

THE ARCHITECT'S LIABILITY.

It is generally recognized that upon the architect rests the primary responsibility for the success of any structure; it is his duty to see that the building which he designs is as safe as care and forethought can make it. This liability becomes of special importance with respect to electrical installations when we consider that its evasion or neglect may result in serious accidents which frequently entail loss of life and property.

The attention which this matter warrants, however, has seldom been bestowed upon it by architects and designing engineers in the past. And while it is not the purpose here to contend that the architect should become an expert on electrical installations, since this would be manifestly impossible without doing injury to his primary vocation as a creative artist, yet the fact should be faced that it is essential for the architect to give full recognition to the demands made by subjects of this character.

STATUS OF THE ARCHITECT.

It has been said that to be truly successful the modern architect must be an artist, a scientist, and a commercialist. The present tendency seems to be for the architect to ignore the latter two of these functions to a considerable degree. There is a positive danger to the profession in this since the thorough and comprehensive nature of the modern contractor's organization appears to be slowly, though surely, leading to the relegation of the architect from the position of supreme arbiter of building affairs to that of an employed practitioner.

Tendencies of this nature have been prevalent in other professions for some time past and have become firmly established. In the architectural profession, they have been given considerable impetus recently by a decision of the Illinois Supreme Court in which it is held that the Architects' License Act of that state permits

the practice of architecture by corporations, so long as the corporation employs a licensed architect. It is with the seriousness of these tendencies before us that we urge upon the architect a closer personal interest in those technical matters which enter into the design and construction of every building.

ELECTRICAL HAZARDS.

It will be conceded at the outset that the installation of electrical conductors into a building results in the introduction of hazards of various kinds. It is consequently the part of wisdom to investigate these hazards in order that proper precautions may be taken to eliminate them or at least to reduce them to a minimum.

The principal hazards arising from electrical installations are (1) the personal injury hazard, (2) the fire hazard, and (3) the danger of injury to equipment, with its resulting break in the continuity of service. The extent of these hazards varies considerably, and depends to a large degree upon whether the current being used is of low voltage or high voltage and whether it is direct or alternating current.

Direct current voltages generally used are either 115 or 230 volts in size. Alternating current, which is used for the supply of ordinary lighting and power systems, commonly has potentials amounting to 2300 volts; these are in most instances stepped down to 115 or 230 volts before being taken into a building. If the current used is supplied from a central generating station, the danger is somewhat greater than where an independent local power plant supplies the needs of the building. In the latter case the hazard is limited to the low voltage system; in the former, there is the liability of the low voltage lines coming in contact with, and being charged from, the high potential lines which carry the supply current to the building.

Such a condition as that just mentioned may arise from several different causes, but usually occurs where wires of deficient insulation become crossed. The writer has in mind a recent incident where a high potential city arc line fell across a signal wire, which was connected to an electric clock in a nearby building. The signal wire became charged with the high voltage and an arc took place between the wire and the metal casing of a window, thus originating a serious fire.

Another characteristic situation is presented by the ordinary transformer, which consists essentially of two coils, both of which are wound on the same core. The 2300-volt alternating current from the central station is changed here

into 115 or 230 volts for use in residences or other buildings. This change is the result of magnetic induction, the two coils being separated from each other by thorough insulation. It is possible that this insulation may become disrupted, and in order to prevent the higher voltage from crossing the gap and entering the building, good practice demands that both the transformer case and the neutral wire on the consumer's line shall be grounded, thus greatly reducing this hazard. The ground connection is usually made by an iron pipe running down the pole from the transformer into the ground. However, it is by no means unusual for this pipe to be burned off at the ground level by lightning discharges, thus removing the outside protection from the building circuit.

THE PERSONAL INJURY HAZARD.

Electrical injuries may be divided into two classes: First, those due to flashes or arcs which occur when direct or alternating currents are broken or momentarily short-circuited; and second, the various kinds of shocks which are the result of contact with charged conductors or exposed apparatus.

The size of a flash or an arc which is set up when a switch is opened is governed by the magnitude of the load being carried and the inductive nature of the circuit. Flashes are often the cause of bad burns; these are very painful and are difficult to heal. Injuries to the eyes, frequently resulting in loss of sight, are very common and may occur either from the flash itself or the consequent sputtering of molten metal.

The extent of the injuries chargeable to shocks depends upon a variety of circumstances, the most important of which may be listed as follows: (1) Magnitude of voltage; (2) Physical condition of the injured party; (3) Area and location of contact; (4) Duration of contact.

Where potentials of 500 volts or more are in use, the danger of fatal shocking is a constant menace, and great care must be exercised at all times in the handling and protection of equipment.

On 115 and 230-volt circuits the hazard of loss of life is not an important factor. While it is true that electrocutions have been caused in some cases, yet they are of infrequent occurrence. There are, however, many minor dangers of accidents due to shocks and burns from coming in contact with exposed parts. Ordinary shocks are not in themselves of a very serious nature, but usually manifest their dangerous character by causing a workman to be thrown from a ladder or into the moving parts of a machine. A slight shock to any one with a weak heart would prove serious; it has also been observed that in gripping a conductor the muscles of one's hands may become so violently

flexed as to prevent him from releasing himself, in which case continuing to receive the current would soon result in death.

One of the most important factors entering into the danger of electric shocks is the magnitude of the resistance of the human body and particularly the contact resistance at the points where the current enters and leaves the body. This resistance varies over wide limits. If a particularly good contact is made, the surface resistance will be relatively small and consequently the flow of current through the body correspondingly large.

With respect to these physiological effects of the electric current, the following quotation is of interest, being taken from the report of the Commission on Resuscitation from Electric Shocks, presented at the thirty-sixth convention of the National Electric Light Association, in Chicago, June, 1913:

"The electric current may kill either by temporarily paralyzing the nervous control of the muscles of respiration, or by stopping the regular beat of the heart. When the heart is seriously affected it ceases to contract as a whole, but continues to contract in parts here and there, so that it appears to quiver. It is then said to 'fibrillate.' In this condition the heart fails to keep the blood circulating and death quickly results. At present no practical procedure has been discovered which will restore the regular beat of the heart in man after it begins fibrillating. Hope of resuscitation is now restricted to proper treatment of the cases of paralyzed respiration; and since deprivation of oxygen for about ten minutes injures irretrievably some of the nerve centers of the brain, it is particularly important that measures for resuscitation be applied immediately and continued until natural breathing returns. In some instances, however, the heart may be merely weakened without being made to fibrillate; in such cases artificial respiration may be of vital importance, because a greatly weakened heart leads to impairment or total stoppage of respiration, which in turn destroys the last vestige of the heart-beat. In all cases, therefore, an attempt should be made to restore natural breathing."

THE FIRE HAZARD.

We may judge of the importance of this phase of our subject by consulting fire insurance statistics which show that approximately 5 per cent. of our annual fire loss of nearly a quarter of a billion dollars is contributed by fires of electrical origin. The most prolific source of electrical fires is defective wiring. This hazard is prevalent principally in those cities and smaller communities where electrical codes and fire protection ordinances are not in use, although it is by no means confined to these localities.

There are three systems of wiring which are ordinarily met with; namely, (1) exposed knob-and-cleat, (2) concealed knob-and-tube, and (3) conduit. Many defects are common to the first two of these systems, and on this account they are prohibited in some of the larger cities. These defects may be enumerated as follows:

1. *Overloading of circuits.* This results from the ease with which open wiring may be extended by incompetent persons to include additional lights or other services. In order that the additional load may be carried, the circuit requires a heavier fuse than is in keeping with proper protection, thus increasing the heating and deterioration of the insulation and the danger of serious arcing.

2. *Insufficient insulation.* The insulation on the conductors may wear through, due to swinging, jerking or other movement. Either the insulation catches fire or an arc takes place which results in igniting adjacent inflammable material. This is very likely to occur where wires passing through wooden joists or partitions are not provided with proper bushings, and especially where they are attached directly to wood or metal.

3. *Mechanical injury.* Owing to its exposed nature open wiring may be pulled off its supports and come in contact with other wires or conducting substances such as gas pipes, and thus set fire to combustible material. Concealed wiring is not subject to this objection to the same extent after the building has been completed, but it is liable to be damaged in many ways during the course of construction.

4. *Splices.* These may be improperly made or may be pulled loose, thus giving rise to dangerous arcing. Corrosion may also take place where moisture is prevalent.

From the list of hazards enumerated above, it is evident that it is unwise to permit any open or concealed wiring of the types referred to. The only method by which a satisfactory degree of safety, convenience and economical operation can be secured is by enclosing all conductors in conduits of metal pipe.

Conduits are not considered as an insulation but as a mechanical and fire protection only; consequently wires installed in conduit must be covered with proper insulation as usual. It is important that conduits be provided with suitable fittings to protect the service wires and prevent the entrance of moisture; the interior should also be free from burrs to avoid possible abrasion of the insulation on the wires. However, if the conduit system itself is properly grounded, the possibility of danger is practically eliminated even though leakage from the wires should take place.

In addition to defective wiring, other sources of electrical fires are open knife switches, current breakers, and exposed fuses. When an un-

protected switch carrying a load is opened, the arc set up is likely to prove a serious fire hazard by igniting adjacent inflammable material. Mechanical injury is also likely to result in short-circuits or grounds which may originate fires. The blowing of an exposed fuse is always attended with danger, and may develop into an additional hazard through the common practice of replacing the blown fuse with a piece of copper wire or a new fuse which is several times too heavy. Naturally this procedure gives no protection whatever, but instead overfuses everything beyond, and may result in overheating the circuit, serious arcing, or damage to equipment. As the fuse is a safety feature which is designed to furnish protection against abnormal conditions of current, it is most important to guard against these dangerous practices.

DAMAGE TO EQUIPMENT.

The hazard of damage to equipment usually manifests itself by burning out the armatures of motors. This may be due either to a short-circuit or ground caused by a hand or a piece of metal coming in contact with an unprotected switch, or else to an overload or surge in the current which would be possible under circumstances of improper fusing as set forth above.

However the damage to equipment is not the only aspect of the situation to consider. Far more serious is the resulting interruption of service where various utilities are interfered with, such as elevators, lighting systems, water supply, refrigeration, etc.

SAFEGUARDS.

The first point to be considered in the discussion of safeguards is the necessity for keeping the voltage as low as is consistent with the working requirements of the equipment and apparatus to be used. This not only reduces the various hazards above referred to but also results in a reduction in the original cost of installation. It is also essential that the rules and regulations of the National Board of Fire Underwriters, which are embodied in the National Electrical Code, should be followed wherever possible. The principal function of this code is to minimize the fire hazard, and it should therefore be supplemented by the National Electrical Safety Code which emphasizes the elimination of the personal injury hazard.

It is evident that the interests of safety to life, prevention of fire, and continuity of service are best promoted when all electrical apparatus is properly guarded or enclosed. The importance of installing all wires in conduits of metal pipe has already been referred to. The danger of mechanical injury is thereby eliminated, and internal trouble that may develop is confined, and should the conductors become defective for any reason, or should it be desired

to extend the system, the existing wires may be withdrawn from the conduit and new and larger ones substituted.

In addition to unprotected wiring, we have also observed that the manner in which electrical accidents occur is distributed among many other causes, the principal ones being unguarded knife switches, circuit breakers and fuses. For the following reasons equipment of this nature should be installed in properly designed metal cabinets:

1. To furnish protection from shocks and burns due to accidental contact with current-carrying parts.

2. To prevent tampering.

3. To eliminate the risk of fire.

4. To protect switches, etc., from mechanical injury, dust, oil and other foreign matter.

5. To prevent a break in the continuity of service due to broken circuits and burned out motors.

6. To improve appearance.

These hazards are most efficiently eliminated by enclosing switches, or both switches and fuses, in metal cabinets so arranged that access to the interior cannot be had except when the switch is in the off position. This may be accomplished by providing a switch operating handle on the outside of the housing together with an arrangement for interlocking the door latch and the switch handle. For additional security it is desirable to ground the cabinet so that a shock would be impossible in case any live part accidentally came in contact with the cover.

The hazards due to transformers are usually minimized by locating such apparatus on poles adjacent to the building. Transformers should not be attached to the building under any condition. When installed inside the building, it is of extreme importance that they should be isolated in separate and enclosed vaults of fire-proof construction, which are thoroughly ventilated through a chimney or flue to the outside air.

Proper attention to the various safeguards outlined above will go far toward the elimination of the many hazards incident to the installation and use of electrical equipment. Too much dependence should not be placed on a general reference to ordinances or codes. While it is proper to be guided by these, as noted above, yet the fact must not be overlooked that in many localities the rules and regulations laid down therein do not receive the recognition which they deserve. This further emphasizes the fact that the full measure of protection can be obtained only by definite specifications and efficient supervision.

Jails and Almshouses

Outside cell or inside cell—which? The archi-

tect of New York City, Alfred Hopkins, recently made a personal investigation of English, Dutch and German jails and prisons to study the outside cell. As a result he believes in the outside cell, in spite of the fact that the majority of American jails are built on the inside cell principle. The newest jail plans favor the outside cell.

An interesting exhibit of plans of county jails as well as an exhibit of plans of county almshouses will be held in connection with the next annual meeting of the National Conference of Social Work, the most important meeting of the kind scheduled for this year, at Kansas City, May 15-22. The exhibit of almshouse plans will be competitive, and the plans will be discussed in connection with the section of the programme entitled "Standards of Administration of the Almshouse," by George S. Wilson, secretary, Board of Public Charities, Washington, D.C., and D. L. Edson, Agent, State Board of Charities and Corrections, Jefferson City, Mo.

The special exhibit of county jail plans comes in connection with a discussion on "Standards of Administration of the County Jail," by Dr. Hastings H. Hart, Director, Department of Child Helping, Russell Sage Foundation.

A New Commissioner

Mr. W. F. Tye, the well-known consulting engineer of Montreal, has been appointed a member of the Commission of Conservation in the place of the late Sir Sandford Fleming.

Removes Office to Halifax

A. Graham Creighton, who has been practicing architecture for the past ten years at Prince Albert, Sask., has removed his office to the "Chronicle" Building, Halifax, N.S., where it is requested that all communications should be sent.

Imperial War Graves Commission

A news item in the "Architect and Contract Reporter" of London, says that the plans of the Imperial War Graves Commission for marking and caring for the graves of our fighting men are now assuming definite shape. The cost of the scheme is to be borne by the Government, and a meeting of the Commission considered and generally approved a report from Lieut.-Colonel Sir Frederic Kenyon, Director of the British Museum, setting out certain recommendations with regard to the provision of memorials in the cemeteries. The general supervision of such constructional work is to be given to three distinguished architects—Mr. Reginald Blomfield, Sir Edwin Lutyens, and Mr. Herbert Baker.

CONSTRUCTION

A JOURNAL FOR THE ARCHITECTURAL
ENGINEERING AND CONTRACTING
INTERESTS OF CANADA



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

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Canada's Adverse Trade Balance

Information emanating from Ottawa and intimating that the Dominion Government was about to award contracts to alien firms for a certain building or public improvement without even calling attention to Canadian firms that plans were being figured, has lately aroused a justifiable protest among the building and engineering interests against any such unwarranted action on the part of the Government as this would indicate.

As to whether this is based on fact or is to be ascribed to mere rumor it is impossible to say just at the moment; but in view of what has previously happened as in the case of the Lindsay Arsenal, such a thing is not altogether beyond the realm of possibility. In fact the employment of alien architects, engineers, and contractors on both public and private work in Canada has long exercised a pernicious economic influence and particularly since the outbreak of the war has assumed proportions that are seriously detrimental to the country's best interests. In this manner sums of money amounting high up into the thousands and which

should remain in Canada are continually going out of the country in the way of architectural and engineering fees and profits on contracting work and materials to firms who have absolutely no community interest in the Dominion whatever.

That the Government should on its own accord countenance a policy of this kind, or permit of it being practiced by business and industrial firms who ignore Canadian architectural, engineering and contracting ability while shouting the slogan of Canadian patronage and demanding protection for themselves, is something which can hardly be reconciled to sound fiscal principles. It has been suggested, and wisely too, that the Government should give consideration to this unfortunate state of affairs in connection with its present decision to adjust the adverse trade balance existing between this country and the United States. Such a step would represent a consistent economic measure far in excess of any consideration of advantage to the important interests directly affected. The present regulations relate only to prohibiting the importation from the United States of a number of manufactured articles. "To no less a degree," it is pointed out, "does the employment of foreign construction agents lead to a reversal of the trade balance against Canada, and it is something which should have the immediate careful discriminating attention of the Government."

As to the question of competency there is little grounds for discussion as regards the ability and organization of Canadian firms to meet any given problem and to successfully carry out any project to which they are entrusted. For a specific instance, it is not necessary to turn further than the present reconstruction of the Parliament Buildings at Ottawa, which considering the emergency of replacing the destroyed structure without the slightest delay represents an accomplishment which forcibly denotes the organizing resources and capabilities of Canadian designers and builders. Other evidences are by no means wanting. They are abundantly seen in the large office buildings of our cities, in public, institutional and hospital buildings and in the school and university groups, in fact in every department of work in which Canadian firms have been given a fair opportunity.

The object of adopting some sort of measure to right present conditions would not mean unfriendly legislation to outside firms, but rather the utilization of our own resources, the employment of our own brains and ability, making the interests affected of full service to the state, and in that service finding the opportunity for the fulfillment of all that is expected of them. Such a step would not only be consistent with a sound fiscal policy, but would also be an indication of Canadian self respect.

The First Architect

BY BART KENNEDY.

(Reprinted from the "Architect and Contract Reporter.")

I.

A beautiful house is the finest of all the works of art. For it is the expression of a conception based on usefulness. And, despite any shibboleth, a conception that is based on the principle of usefulness is the soundest of all. Even things that are not supposed to have art value are beautiful when they embody this principle in perfection. How beautiful is the oar! And how beautiful is a ship of sails as it goes before the wind.

Man would not have endured but for the house. Or, at least, he would not have attained to a title of his present power. He would still have been a savage of the forest and the cave. It might be, indeed, that the lordship of the world would have fallen to the lot of some other earth being.

But the power of embodying the concept of the house saved him. It enabled him to protect himself from the elements. It enabled him to defy the scorch of the heat and the rigor of the cold. It was a bulwark against his enemies. Under its roof he throve and came to the fulness of himself.

The name of the first architect is lost in the mists of the profound past. He was a man of genius—some dreamer who lived doubtless in a dark cave in the depths of the vast forest. And well it may be that the idea of the house came to him as he walked along a path that was sheltered by the meeting overhead of the branches of the lofty trees.

The vision of the house to come flamed suddenly in his imagination.

II.

A house that would at once protect and at the same time allow the coming in of the glorious day.

The house to come!

He had a vision of it, even as some man was destined—in the future far, far out from him—to have a vision of the wondrous sounding chariot that now flies through the air.

III.

That time when the first architect lived was long, long ago. Long before the era of recorded history. Long before the time even of Atlantis—now called fabled. Hundreds of thousands of years ago. Perhaps millions of years ago. For the world is old, and the time when man first appeared is hidden behind an impenetrable veil.

IV.

The house itself is a harmonious blending of

many ideas that lead to a common end. It took thousands of years before the concept of it was fully expressed. The savage of genius would see it in a flash of imagination. For such is the way of the constructive mind. It sees at once the picture of the full realizing of the idea that it has evolved. But the road to the attaining of this realization is long.

The journey lasts through many lives.

V.

Doubtless the first architect realized the conceivableness of a house that would at once let in the light and keep out the wind and the rain. But the mystery and the magic of glass would be beyond him.

The wondrous dreams that lie prisoned in great rocks! The columns and the arches and the statues of a house of God! Can it be that he saw these, too, as the concept of the house lived within him? Was he able to see this glorious and splendid house of the profound future? Did he see it clearly through the distance of thousands upon thousands of years to come?

It must have been so. He must have been one whose eyes pierced through futurity.

VI.

He died, but still he lived. The spirit of him passed on and on. And the full realization of the concept of the beginning began to come. The architect gathered unto him the ways of using of forces that would lead to the ultimate expression of the vision that had come to him in the beginning. He used the powers of other men. Iron and wood and stone became his servants.

He builded places immense and strong. Places that could be seen from afar—the tops of which pierced into the heavens. He made the bulwarks of civilizations, the names even of which are hidden from us. He was the founder—the one upon whose genius things rested. Wars came, and destroyed, and passed. But still the architect builded.

VII.

The civilizations sank into the sands in the fulness of time. The erosion of change wasted them. But the mighty foundations of his work endured. They lived in lone deserts.

In many guises did the architect appear. In many guises did his spirit manifest itself. He passed and came, and passed and came again. Within him was the memory of the dream in the vast forest of the world's dawn. And he went along the road that led to the ultimate realization of the dream.

And lo! time went on and artists—men of glorious imaginings—ministered to the needs of the expression of the architect's dream of the profound past. For him they wrought forms divine. For him they painted glorious pictures. For him they carved devices. And to him ministered men of labor. Men who loved the work, and who took joy in it.

Slowly the house arose. Slowly it grew and grew. Carefully was stone laid on stone. For this house was to stand through the fret and the change of the centuries. It was the house that was to picture the splendor and the glory of God. The house wherein man might come for shelter when his spirit was sore and troubled. The house of calm and meditation and prayer.

Slowly it arose. Slowly it grew.

VIII.

And one day it came to pass that the house had attained to the ultimate realization of the dream of the beginning. The long, long journey was over. The goal had been reached.

The architect knelt within this vast, shining house of glory. This place that fulfilled the dream in the forest of the dawn of the world.

Stained Glass Industry in Canada

The Robt. McCausland Company has written to the Toronto Globe to correct certain misstatements in an article appearing in that publication's issue of March 19th. The article in question deals with the "War's Unusual Effect on the Canadian Glass Business," and this concern's reply is directed to certain remarks which refer particularly to the manufacture of stained glass. Attention is called to the fact that instead of being adversely affected by present conditions, this branch of the industry is handling a heavy volume of orders due to the present demand for memorial windows. Also that the matter of obtaining the necessary materials is regulated by the normal methods of ordering supplies well in advance and keeping a large working stock always on hand. In addition, several other phases which are categorically taken up make the subject one of interest. The letter reads as follows:

To the Editor of The Globe: An article entitled "War's Unusual Effect on Canadian Glass Business," in your issue of March 19, makes certain statements in connection with the memorial stained glass business, which are incorrect, and in our opinion, hurtful to local interests. So far wide of the true conditions are these statements that we can only account for them by supposing that someone quite unfamiliar with the facts furnished your correspondent with the information in that part dealing with memorial stained glass windows.

The article speaks of Belgian glass, and implies that Belgium is the main source of supply.

So far as we are concerned only English glass is used, and we might further say that for fifty years we have been dealing with the world's greatest maker of "antique," the glass being specially cast and selected for our particular needs.

The statement is made that "prices have trebled," that is, prices of material. In dealing with memorial stained glass windows, the price of material is a very small factor in determining the final cost.

An instance is cited of five months having been taken to get a few cases of glass into Canada. Unless in the case of some very special requirement this delay should not necessarily cause inconvenience. A maker of memorial windows must at all times carry a very large stock of antique glass, not only of various colors, but of innumerable degrees of color. In no other way can one obtain the almost limitless palette so necessary to the successful making of stained glass figure windows, suited to the various conditions of light of different positions. Throughout the war we have had no difficulty in keeping our stock of the choicest antique glass up to normal.

Further, the article states "the stained glass business is at a standstill and no churches are erecting stained glass windows." This statement, in conjunction with former references to memorial stained glass windows, creates a false impression. While it may hold good with reference to plain church windows and plain glazing, it is quite erroneous as applied to memorial figure windows.

In our experience extending over sixty years the demand for memorial windows was never so great, and we have more orders passing through our studios than ever before. War memorials, of course, account for a large proportion of this business, but the regular demand for memorial windows of the highest type is well maintained.

We would ask you to give the above statement equal publicity to that given the article, which we consider incorrect and misleading, in that part which deals with the memorial stained glass business.

ROBERT McCAUSLAND, LIMITED.

Toronto.

On Active Service

The following draughtsmen from the office of P. Lyall & Sons Construction Company, Limited, are now on overseas service:

G. E. Jacks, Ltd., 5th Pioneers.

Cecil DeBritgny, Sergeant, 5th Pioneers.

Frederick DeBritgny, Lieutenant, 5th Pioneers.

Another of the Company's draughtsmen, Norman Robertson, Corporal, 14th Battalion, has been killed in action.



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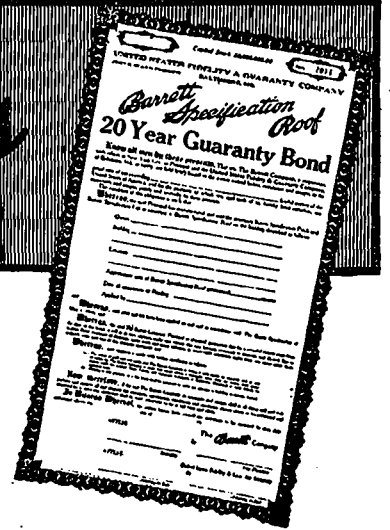
That is why these roofs last twenty years and more; that is why we can afford to give a Surety Bond Guaranty with every one.

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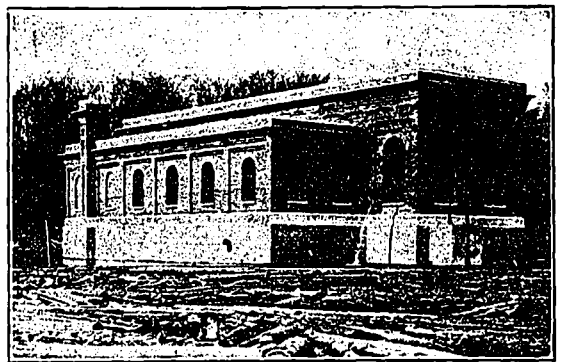
The 20-Year Guaranty is now given on all Barrett Specification Roofs of fifty squares and over in all towns with a population of 25,000 and over, and in smaller places where our Inspection Service is available.

Our only requirements are that The Barrett Specification dated May 1, 1916, shall be strictly followed and that the roofing contractor shall be approved by us.

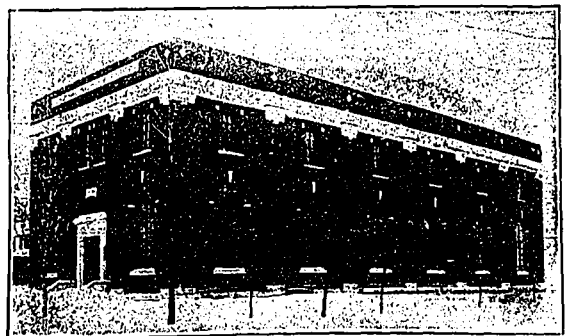
Copy of The Barrett 20-Year Specification and further information promptly furnished upon request.



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General Contractors: Mum & Shea, Montreal.
Roofers: Metal Shingle & Siding Co., Limited, Montreal.

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CONTRACTORS and SUB-CONTRACTORS

As Supplied by The Architects of Buildings

Featured in This Issue

The Royal Bank of Canada, Yonge Street, corner Carlton Street,
Toronto, Ontario.

Book elevator, Turnbull Elevator Company.
Carpenters, Weller & Co.
Cut stone, Geo. Oakley & Son.
Electric wiring, A. R. Rice & Son.
Frink reflector, Canadian H. W. Johns-Manville Co.
Hardware, Alkenhead Hardware Company.
Heating, W. J. McGuire, Limited.
Leaded glass, Robt. McCausland, Limited.
Masonry, R. Chalkley & Son.
Painting and glazing, Joseph McCausland & Sons.
Plastering, R. C. Dancy.
Plumbing, W. J. McGuire, Limited.
Roofing, Douglas Bros.
Sidewalk hoist, Herbert Morris Crane and Hoist Co.
Steel work, McGregor & McIntyre.
Tile work, Italian Mosaic and Tile Co.
Vaults, J. & J. Taylor.

Bank of British North America, Queen and Beech Avenue,
Toronto, Ontario.

Brick, John Price Company.
Carpenter work, Smith & Elroy.
Electrical fixtures, F. C. Henderson.
Electric wiring, Geo. J. Beattie.
Fittings, Canadian Office and School Furniture Co.
General contractors, R. Robertson & Sons.
Granite, Stanstead Granite Quarries Co.
Painting and glazing, J. McCausland & Son.
Plastering, T. Gander & Son.
Plumbing and heating, Sheppard & Abbott.
Roofing, Geo. M. Bryan.
Stone, Indiana Limestone Co.
Stone, McIntosh Granite Co.
Structural steel, McGregor & McIntyre.
Tile, Italian Mosaic and Tile Co.
Vault doors, J. & J. Taylor.

Huron and Erie Mortgage Corporation Building, Windsor, Ont.
Bank fixtures, Canadian Office and School Furniture Co., Pres-
ton.

Carpenter work, Samuel Willis, London, Ont.
Electric work, McNaughton & McKay, Windsor, Ont.
Elevator, Otis-Fenson Elevator Co., Toronto.
General contractor, John Putherborough, London.
Heating and plumbing, Pennington & Brian, Windsor, Ont.
Lighting fixtures, Barton Netting Co., Windsor, Ont.
Ornamental iron, Canada Wire and Iron Goods Co., Hamilton,
Ont.

Plastering, R. C. Dancy, Toronto, Ont.
Tile and marble work, Italian Mosaic and Marble Co., Toronto.
Vaults, Goldie & McCulloch, Galt, Ont.

Canadian Bank of Commerce, Barrie, Ontario.

Bank fixtures, Berlin Interior Hardwood Co.
Heating and plumbing, J. J. Neelands.
Lighting fixtures, McDonald & Willson.
Plaster work, W. J. Hynes.
Roofing, Mound City Roofing Tile Co.
Terra cotta, Northwestern Terra Cotta Co.
Vaults, J. & J. Taylor.

Canadian Bank of Commerce, Windsor, Ontario.

Bank fixtures, Hadley Lumber Co.
Cut stone (Northern Ohio buff standstone), Norcross Bros.
General contractors, Norcross Bros.
Heating and plumbing, Robert Paddon & Co.
Lighting fixtures, Murray-Kay, Ltd.
Plaster work, R. C. Dancy.
Roofing, A. B. Ormsby Co.
Steel, Canadian Allis-Chalmers Co.
Vault, Canadian Fairbanks-Morse Co.

Canadian Bank of Commerce, Stratford, Ontario.

Bank fixtures, Hadley Lumber Co.
Heating and plumbing, J. R. Myers.
Lighting fixtures, F. C. Henderson.
Plaster work, W. E. Loeder.
Steel, McGregor & McIntyre.
Roofing, J. R. Myers.
Vaults, Goldie & McCulloch.

Canadian Bank of Commerce, East End Branch, Vancouver, B.C.

Bank fixtures, Chalmers Cabinet Works.
Clock, Seth Thomas Co.
Elevator, Otis-Fenson Elevator Co.
General contractors, Baynes & Horie.
Grills, P. E. Harris & Co.
Lighting fixtures, F. C. Henderson.
Lighting fixtures, McDonald & Willson.
Steel, Baynes & Horie.
Steel sash, Henry Hope & Sons, Limited.
Terra cotta, Federal Terra Cotta Co.
Vaults, J. & J. Taylor.

Canadian Bank of Commerce, Danforth and Broadview Branch,
Toronto, Ontario.

Bank fixtures, Hadley Lumber Co.
Brick, Don Valley Brick Works.
Cut stone, Buff Indiana Limestone.
General contractors, Harris & Harris.
Heating, Fiddes & Hogarth.
Lighting fixtures, direct, McDonald & Willson.
Lighting fixtures, indirect, Jas. Devonshire, Ltd.
Plaster work, W. H. Addison.
Plumbing, Fiddes & Hogarth.
Roofing, G. M. Bryan.
Vault, Goldie & McCulloch Co.

Canadian Bank of Commerce, Bloor and Lippincott Branch,
Toronto, Ontario.

Bank fixtures, Hadley Lumber Co.
Brick, Black Building Supply Co.
General contractors, R. Robertson & Sons.
Heating, Fred Armstrong Co., Ltd.
Lighting fixtures, F. C. Henderson.

Plaster work, T. Gander & Son.
Plumbing, Robert Jordan.
Terra cotta, New York Architectural Terra Cotta Co.
Vaults, J. & J. Taylor.

Canadian Bank of Commerce, Waterloo, Ontario.

Bank fixtures, Barton & Baldwin.
Brick, Black Building Supply Co.
Cut stone, Geo. Oakley & Son.
General contractors, Dickie Construction Co.
Heating and plumbing, Weichel & Son.
Plaster work, W. J. Hynes.
Steel, Dominion Bridge Co.
Vaults, J. & J. Taylor.

Canadian Bank of Commerce, Earls Court, Toronto, Ontario.

Bank fixtures, G. E. Lindsay Co.
Brick, Fiske Tapestry.
Cut stone, Roman Stone Co.
Heating and plumbing, T. G. Barrington.
Heating and plumbing, W. Schulkins.
Lighting fixtures, Canadian Alexalite.
Lighting fixtures, McDonald & Willson.
Plaster work, T. Gander & Son.
Roofing, Geo. N. Bryan.
Vault, J. & J. Taylor.

Canadian Bank of Commerce, Archives Building, Toronto, Ont.

Brick, Don Valley Brick Works.
General contractors, T. Cannon & Son.
Heating, Gurney Foundry Co.
Plaster work, R. C. Dancy.
Plumbing, Bennett & Wright.
Roofing, G. Duthie & Sons.
Special equipment, Logemann Bros.
Steel, McGregor & McIntyre.
Steel sash, Lupton Rolled Steel Sash.

Dominion Bank, Dundas and Medland Streets, Toronto, Ontario.

Bronze and iron work, Architectural Bronze Works.
Carpentry, J. C. Scott Co., Ltd.
Cut stone, Fred Holmes & Sons, Ltd.
Electric fixtures, F. C. Henderson.
Electric fixtures, Mott Company, Limited.
Electric wiring, Toronto Electric Co.
Galvanized iron, W. E. Dillon Co., Ltd.
Grill work, etc., Dennis Wire and Iron Works, Ltd.
Hardware, Rice Lewis & Son, Limited.
Interior fittings, Office Specialty Co., Ltd.
Masonry, Albert Webb.
Marble and tile, T. Eaton Co., Ltd.
Name plates, etc., Patterson & Heward.
Painting, J. R. Robinson.
Plaster work, Wm. Blayborough.
Plumbing, Fred Armstrong Co., Ltd.
Sign, H. M. Stevenson.
Vault, J. & J. Taylor.

Weatherstrip, Chamberlin Metal Weatherstrip Co.

Bank of Toronto, Ossington Avenue and Arthur Street,
Toronto, Ontario.

Bronze letters, W. H. Stevenson.
Carpentry, A. Weller & Co., Ltd.
Cut stone, Scott Bros.
Electric fixtures, McDonald & Willson.
Electric wiring, Harry Alexander.
Interior fittings, S. R. Hughes.
Hardware, Hardware Company of Toronto.
Iron grills, Canadian Ornamental Iron Co.
Lathing and plastering, Andrew Petrie & Co.
Marble and tile work, Italian Mosaic and Marble Co.
Masonry, James A. Wickett, Limited.
Office furniture, Office Specialty Mfg. Co.
Ornamental bronze work, Dennis Wire and Iron Works.
Painting and glazing, Hughes & Co.
Plumbing and heating, Purdy-Mansell, Limited.
Roofing and metal work, G. Duthie & Sons, Ltd.
Vault, Goldie & McCulloch Co., Ltd.

Merchants Bank, Windsor, Ont.

Bank fixtures, Canadian Office & School Furniture Company.
Composition flooring, Geo. Bertini.
Cut stone, Ritchie Cut Stone Company.
Electric wiring, Lyons Electric Company.
General contractors, P. H. Secord & Sons, Brantford, Ont.
Heating, Windsor Hardware Company.
Hollow tile, National Fireproofing Company.
Iron stairs, Dennis Wire & Iron Works Co.
Lighting fixtures, McDonald & Willson, Ltd.
Marble work, Standard Marble & Tile Company.
Painting, Wm. Laessar.
Plaster work, Harry L. Wood.
Plumbing, Windsor Hardware Company.
Roofing, Windsor Hardware Company.
Steel, barnia Bridge Works Co.
Steel sash, Trussed Concrete Steel Co.
Vaults, J. & J. Taylor.

Merchants Bank, Kitchener, Ont.

Bank fixtures, Berlin Interior Hardwood Co.
Electric wiring, Lyons Electric Company.
General contractors, P. H. Secord & Son.
Heating and plumbing, Wm. Knell & Co.
Lighting fixtures, Galt Electric Fixtures Co.
Marble work, Standard Marble & Tile Co.
Painting, Weber Bros.
Plaster work, Harry L. Wood.
Radiators, Clare Bros.
Roofing, Brown-Jarvis Roofing Company.
Steel, Dominion Bridge Co.
Vault boxes, Office Specialty Mfg. Co.

Merchants Bank, Harvard Avenue, Notre Dame, Montreal.

General contractors, A. F. Byers & Co.
Bank fixtures, Canadian Office & School Furniture Co.
Boilers, Warden-King Limited.
Brick, Interprovincial Brick Co.
Door grills, Fred G. McKay.
Electric fixtures, Booth Bros.
Marble, Walker Hardware Co.
Plastering, Watson & Wilson.
Plumbing and heating, W. J. McGuire, Limited.
Roofing, Geo. W. Reed.
Vaults, J. & J. Taylor.



JOHN M. LYLE, Architect



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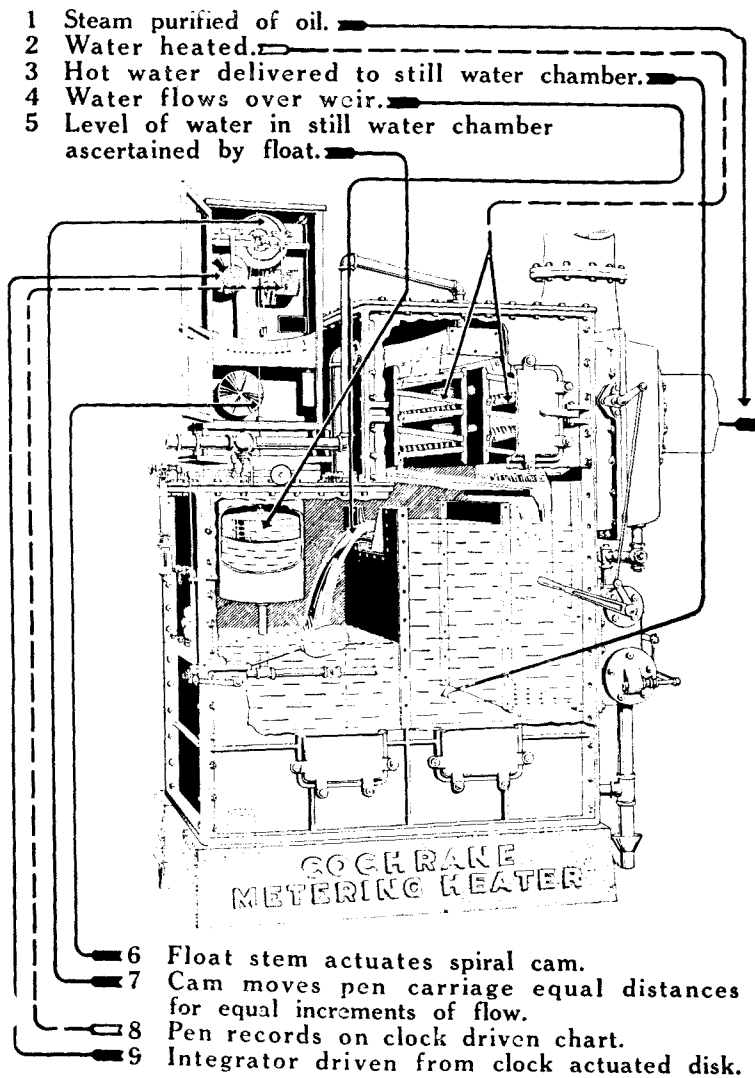
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