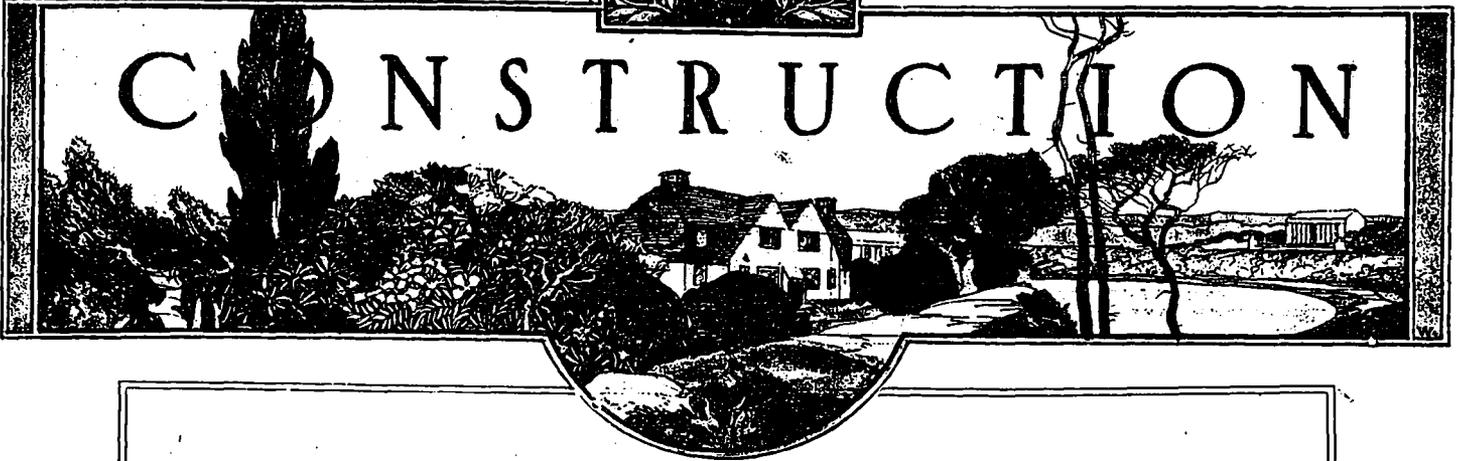


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CONSTRUCTION



October, 1917

Vol. 10, No. 10

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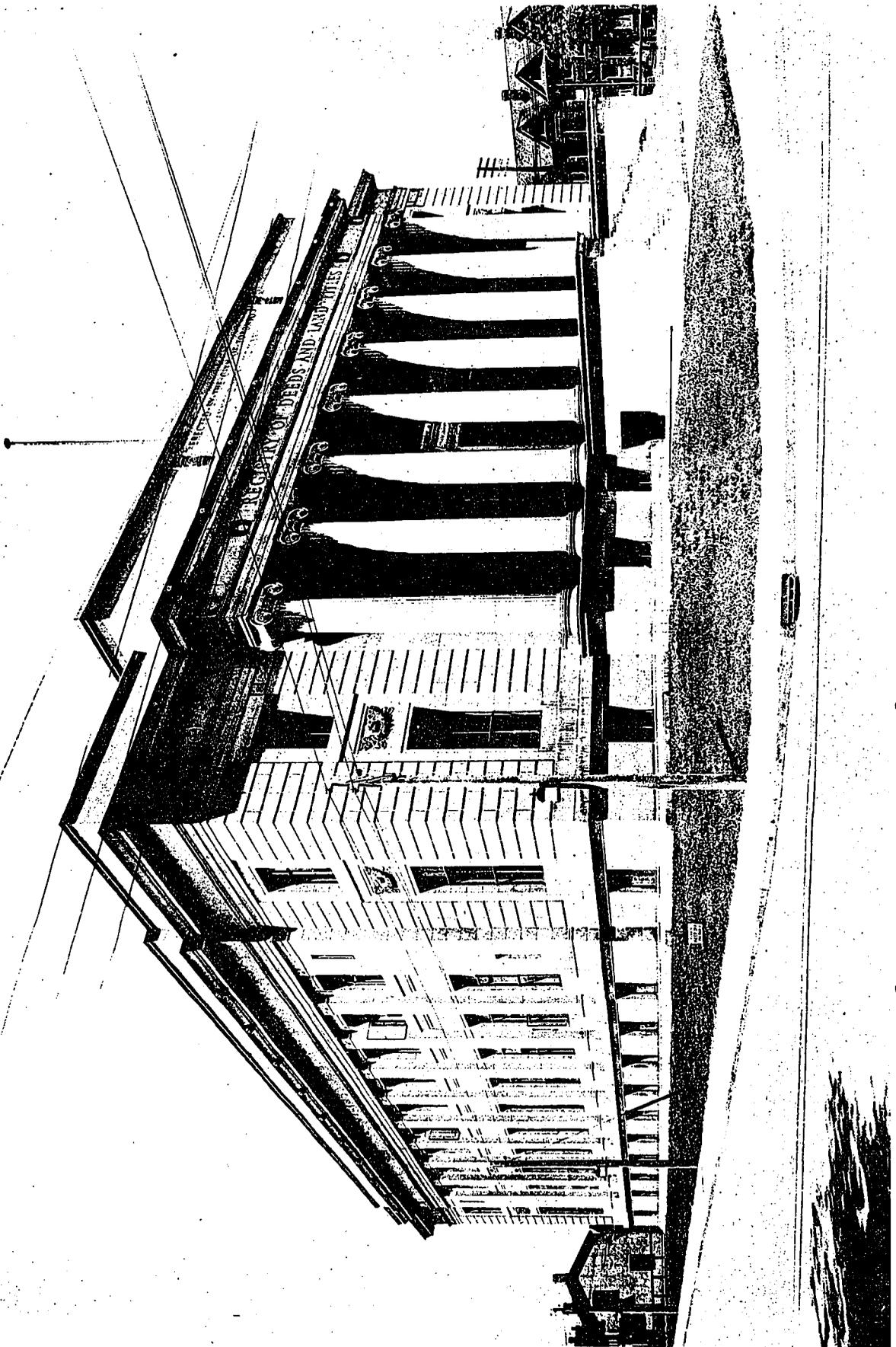
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GRAPHIC ARTS BLDG., TORONTO, CANADA

MONTREAL

BRANCH OFFICES

NEW YORK



REGISTRY OFFICE, TORONTO.

CHARLES S. COBB, ARCHITECT.

The New Registry Office, Toronto



DURING the latter part of 1913 plans for the proposed Registry Office were selected by competition, in which thirty Canadian firms participated. In June, 1914, tenders were called for the construction of the building. Sixty-two firms submitted figures, including four bulk tenders. It was decided to erect the building by separate trades, and contracts were let to local firms for all parts of its construction, except the marble work, which was executed in Quebec. With this one exception it is a product of the Toronto building industry, and represents an entirely Canadian undertaking demonstrating that it is unnecessary to go to the United States for architects and contractors in order to get efficient service.

Besides being a notable addition to Toronto's public buildings, it gives vastly superior accommodations compared with the old registry offices which it replaces, providing adequate and well lighted space for both public and staff with every convenience of plan to facilitate and preserve a systematic and efficient working arrangement for filing and searching of records.

Located between Chestnut and Elizabeth streets, with its main frontage facing Albert street, it lies at a point slightly north in the district between Osgoode Hall law courts and the City Hall. As the immediate neighborhood still contains a large number of unsightly buildings comprising a section of the older part of the city, the architectural character of the new building is in marked contrast to its surroundings and its presence is bound to exert a most beneficial influence in the future development of the vicinity in which it stands.

As the purpose of the building would indicate the construction is fire-proof throughout, the exterior being of buff Indiana line stone, the frame of structural steel, fireproofed with tile and with tile arched floors and tile partitions. Sufficient excess strength was allowed in the steel frame and foundations for the addition of a future third storey.

It is interesting to note that the cost to the city exceeded by only \$385.00, the lowest bulk tender submitted; the total of separate tenders amounting to \$372,506.00. The cubical contents amount to 1,176,200 cubic feet, and the cost per cubic foot was 31.7c. The extra charges were kept to a very low figure, and only amounted approximately to one-

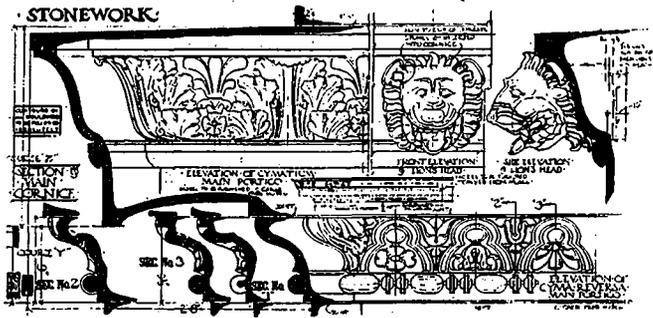
tenth of one per cent. of the cost of the building.

A considerable amount of marble is used in the interior, the floors being of pink and grey Tennessee; the walls in ashlar, of Champville, French marble; and the base of Botticino. Regina marble, a Canadian product quarried at Quebec, was used for window sills, counter tops and stair treads, with most satisfactory results.

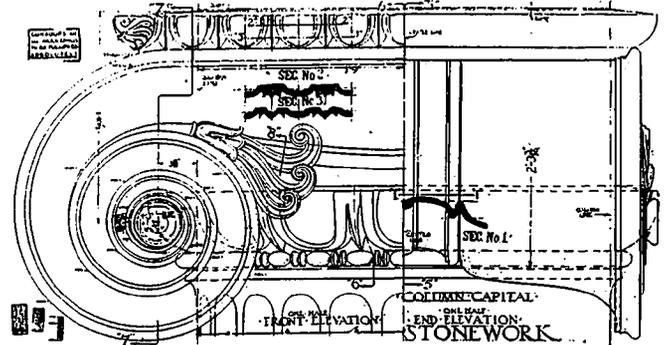
Main Floor.—The main entrance from Albert street is through a broad lobby and octagonal rotunda from which open entrances to the East and West Registry Divisions and stairs and elevator to the Land Titles section on the second floor. Duplicate offices for the Registry divisions are provided. Each of these consist of a public space, around which are grouped the coat room, waiting room, consultation room, etc., as well as the private offices of the registrar and his secretary. A large receiving space, lighted from above, is provided, with rooms for the comparing of documents, examination of originals with lift to document room on second



MAIN ENTRANCE, REGISTRY OFFICE, TORONTO.



DETAIL OF MAIN ENTRANCE, REGISTRY OFFICE, TORONTO.



DETAIL OF COLUMN CAPITAL, REGISTRY OFFICE, TORONTO.

floor, and easy access to the map file room in the basement.

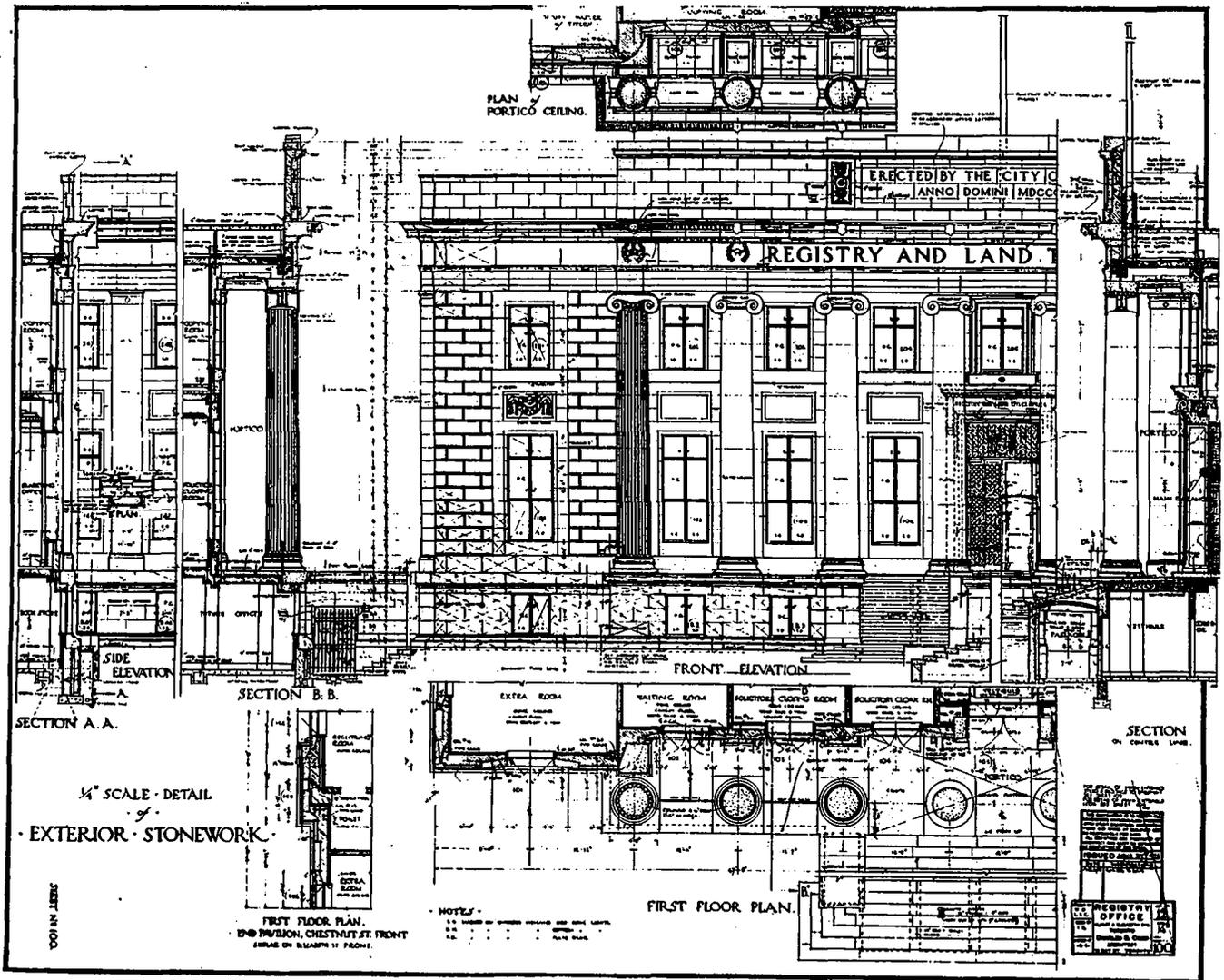
Opposite the receiving spaces and separated by glass partitions is the office of the Deputy Registrar, and adjacent to it is the abstracting room, which in turn is in easy access to the searching office, which occupies the entire rear of this floor of the building. The searching room, which constitutes a library of title abstracts taken from the original documents, is 53 feet by 73 feet in size, abundantly lighted from three sides. Telephone booths are here provided for easy communication of law clerks, while making searches.

A rear service hall, staff stair, and entrance

with book lifts and ladies toilet room complete the accommodation of this floor.

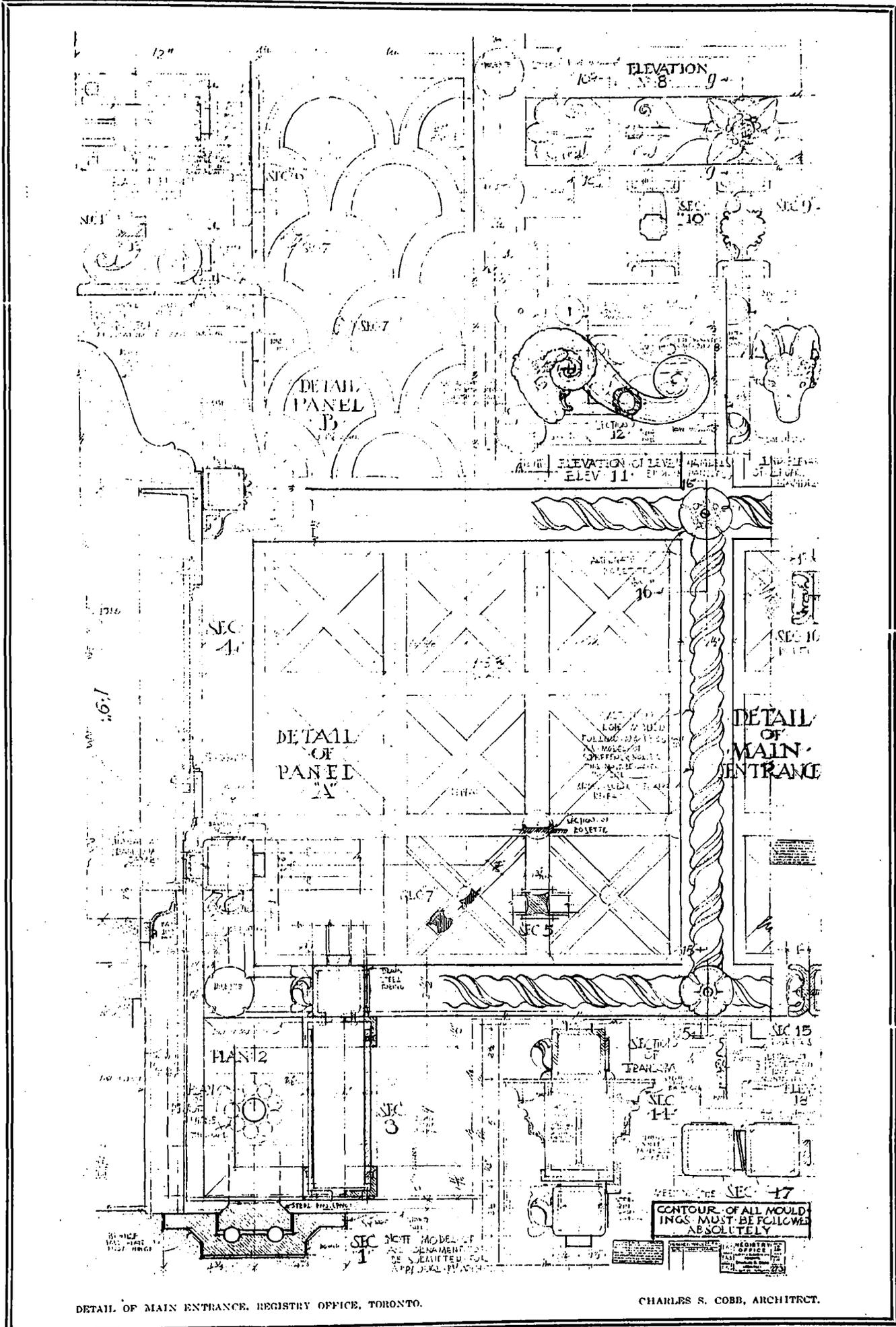
Second Floor.—On the Albert street frontage is housed the "Land Titles" section of the Registry Office. This department takes care of that part of title registry when same are guaranteed under the Torrens system. A searching office with top and side light directly accessible from the main stairs and elevator corridor is provided. Grouped around this are the document room, abstracting and comparing room, and private office suites of the Master of Titles and his deputy, lavatories, etc., for public and staff, complete the arrangement of this department.

Basement.—In the basement are storage



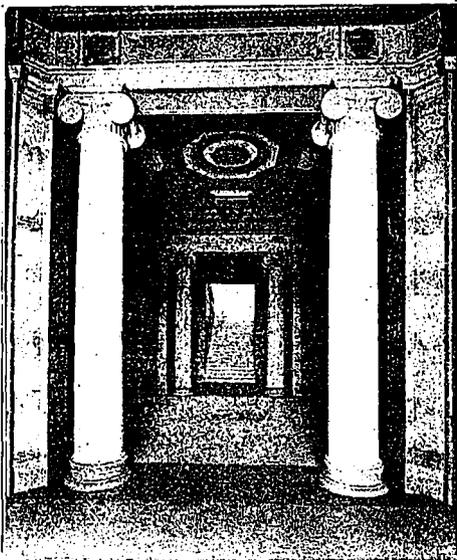
ELEVATION DETAILS, REGISTRY OFFICE, TORONTO.

CHARLES S. CORB, ARCHITECT.

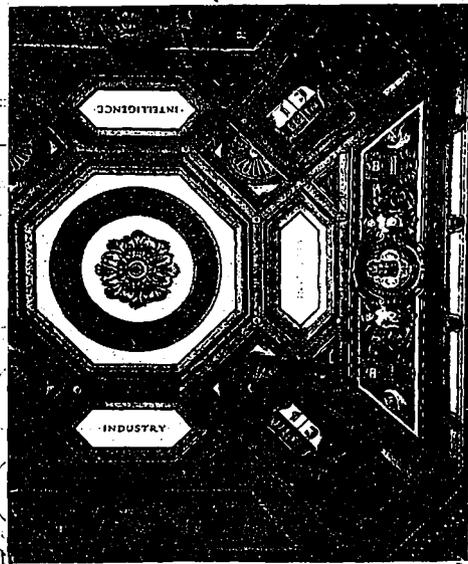


DETAIL OF MAIN ENTRANCE, REGISTRY OFFICE, TORONTO.

CHARLES S. COBB, ARCHTCT.

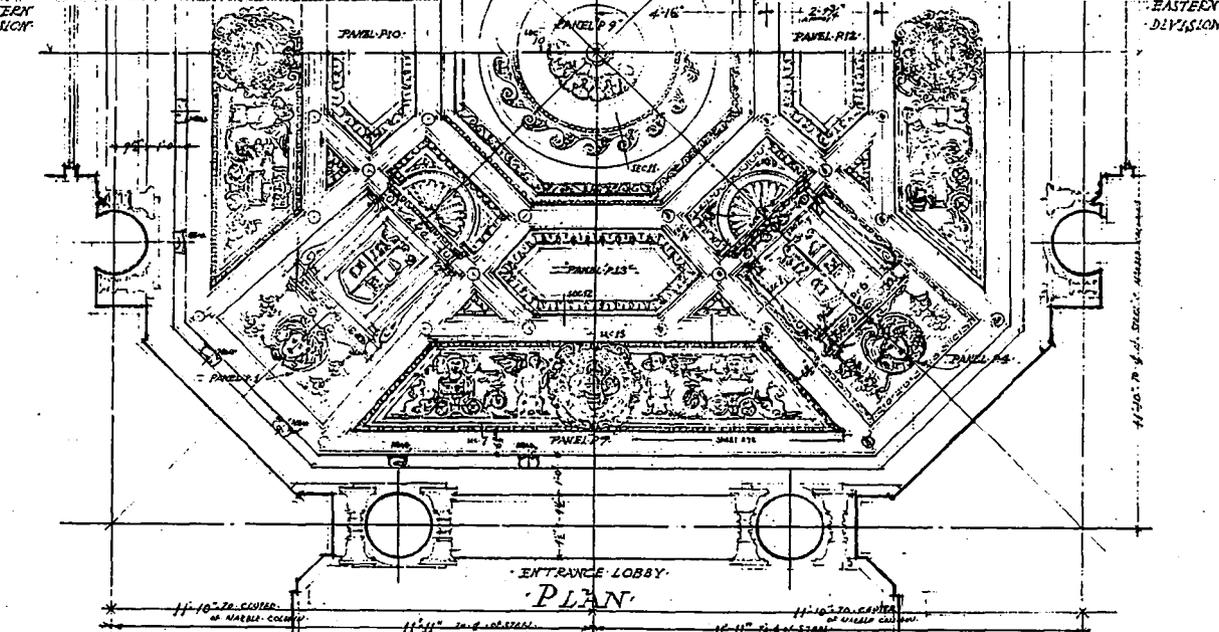


STAIRCASE CORRIDOR.

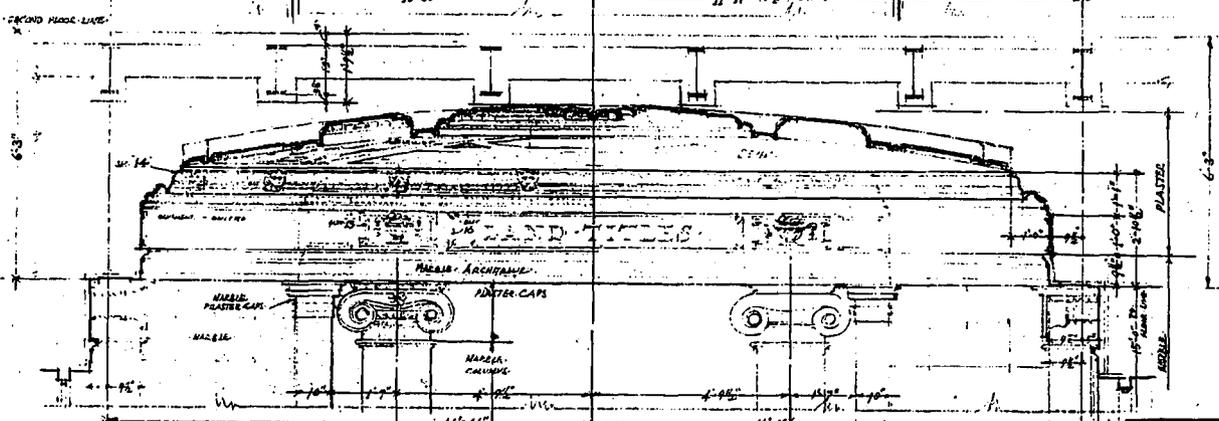


WESTERN DIVISION

EASTERN DIVISION



ENTRANCE LOBBY
PLAN



SECTION & ELEVATION (ON CENTER LINE)

- NOTES:
- PANELS P12, 3, 4 - REFER TO DRAWING SHEET 271.
 - LOWES' PATENT - 275.
 - P. 54, 74 - LINES - 276.
 - CENTER LINE - 279.
 - 8, 10, 11, 12, 13 - 274.
 - 275.
- SECTIONS - 1, 2, 3 - 4, 6 - 274.
- 7, 8 - 275.
 - 9 - 276.
 - 10 - 279.
 - 11 - 274.
 - 12 - 275.
 - 13 - 274.
 - 14 - 275.
- WORKING DRAWING - CHARLES S. COBB ARCHT. TORONTO.

DETAIL of ROTUNDA
SCALE 3/4" = 1' 0"
PLASTER

ISSUED FOR 10/11/12	REGISTRY OFFICE	12
DATE	OFFICE	
W. COBB ARCHT.	REGISTERED ARCHT.	
	CHARLES S. COBB ARCHT.	
	125	

rooms, bindery, public and staff lavatories, map room, etc., heating and ventilating equipment as well as a suite for the resident superintendent. On Albert street frontage there is about 6,000 square feet available for use as civic offices with separate entrance from Albert street.

The heating is with steam with vacuum system and direct radiation. The generating plant consists of two horizontal return tubular boilers, each having 1,133 feet heating surface. Each boiler is equipped with a Dutch oven type smokeless furnace, consuming smokelessly the lowest grade of bituminous slack coal. Boiler feed pumps, tank, vacuum pumps, etc., are located behind the boiler equipment. The hot water for lavatories is supplied in winter by steam coil from boilers and in summer by separate jacket heater. Automatic temperature control is provided throughout the building.

The ventilation equipment of the building consists of a 61 in. by 26 in. fan, with electric drive and a 9 ft. by 9 ft. standard air washer with tempering and reheating coils. Fresh warmed and humidified air is supplied to all of the principal rooms and is exhausted to roof by gravity through ducts. A special exhaust fan for all toilet rooms is provided on the roof. The plumbing throughout is of the highest class, porcelain fixtures being used. All lavatories have self closing basin cocks.

The elevator equipment consists of one passenger elevator, two hydraulic document lifts, and two hydraulic book lifts. A vacuum cleaning equipment is also supplied.

Since its occupancy the building seems to fulfill the requirements demanded of it in every particular and although erected during the period of the war, and while not pushed by the owners, was completed practically within contract time.

THE MECHANICAL EQUIPMENT

Melvorn F. Thomas, Consulting Engineer

The new Registry Office building is heated by a vacuum steam system of direct radiation, which is supplied with steam from two 66-inch diameter by 16 feet horizontal tubular boilers. These boilers are equipped with the Dutch Oven type smokeless furnaces, using the lowest grade of bituminous coal without producing smoke.



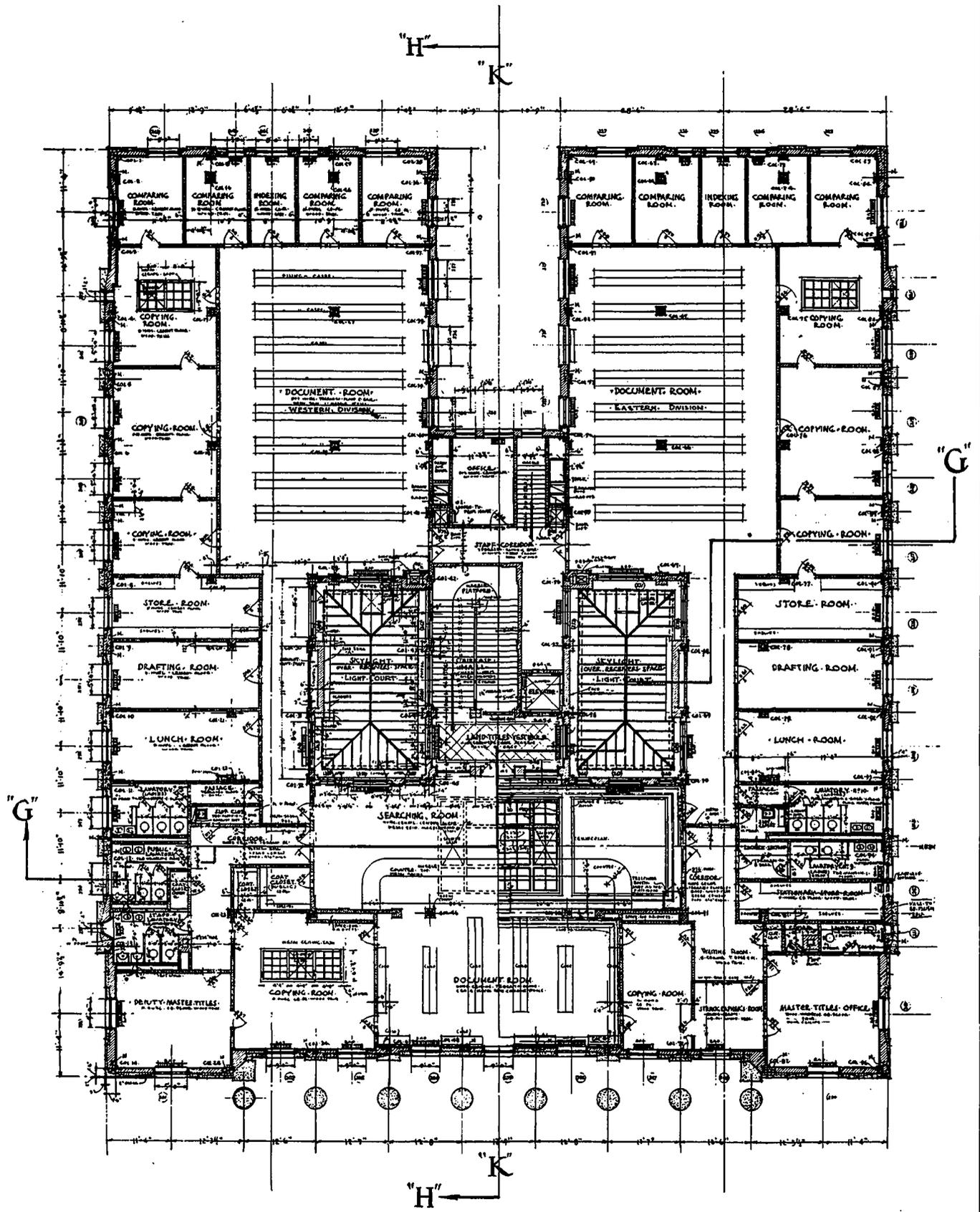
PUBLIC SPACE, REGISTRY DIVISION, REGISTRY OFFICE, TORONTO.

Steam is distributed to the direct and fan-blast radiation by a system of piping located on the ceiling of the basement in the rear portion of the building and concealed in trenches under the basement floor in the important front rooms of the basement. Each radiator is equipped with a thermostatic vacuum trap and the entire system is arranged to be operated with vacuum pumps or by gravity. There is a complete system of auxiliary equipment, including an automatic damper regulator, two boiler feed pumps, two vacuum pumps and the necessary receiving tanks for automatic controlling equipment.

The heating of the entire building is under automatic temperature control. Each room is equipped with one or more thermostats which control the steam supply to the radiators in the room.

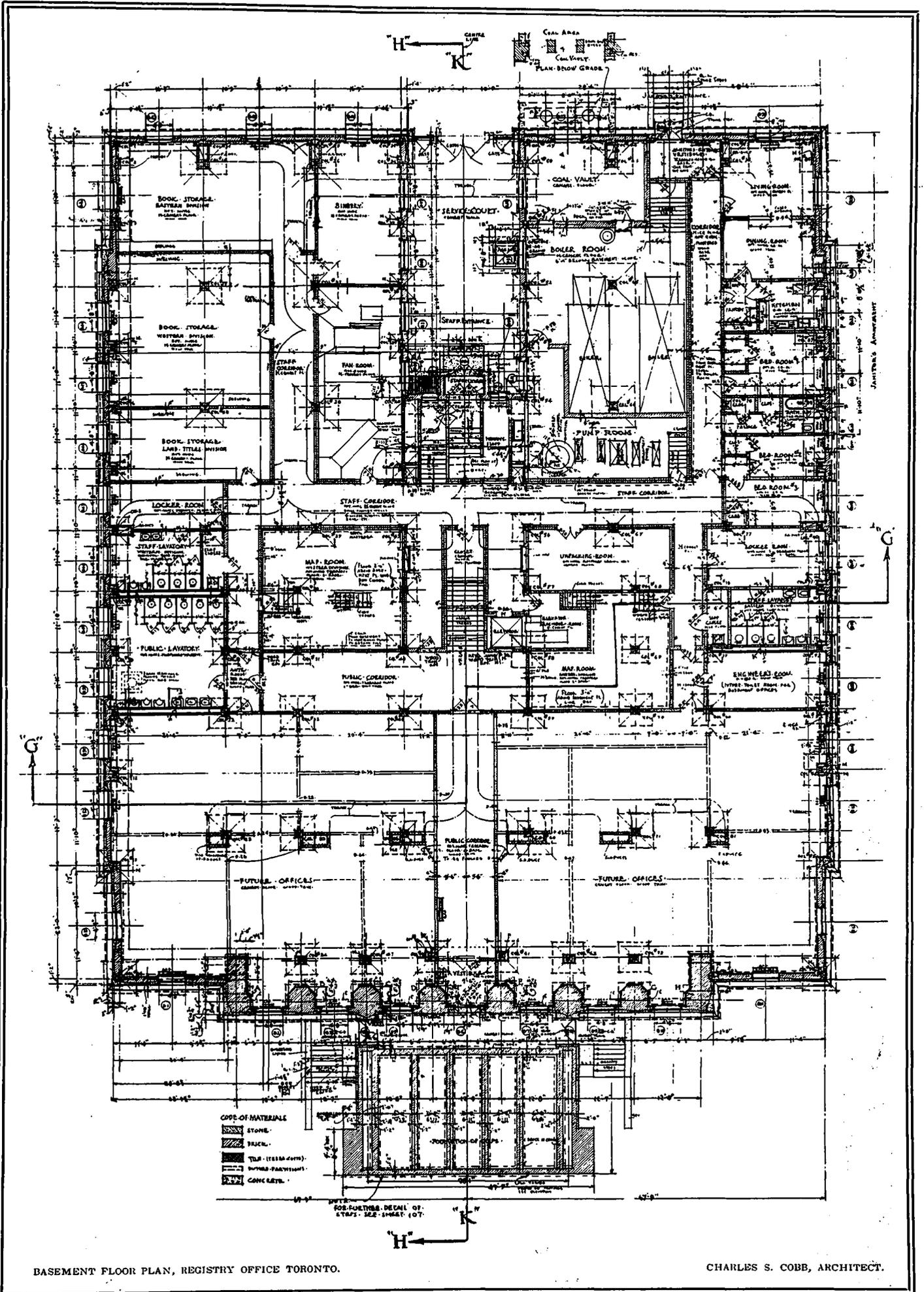
There is installed in the building 7,579 square feet of direct radiation and 3,051 square feet of cast iron fan-blast heating surface, all of which is controlled by 59 vapor disc type thermostats and 106 diaphragm steam valves.

VENTILATION.—The most important rooms of the building are ventilated by a supply of fresh air which is tempered, washed and reheated and



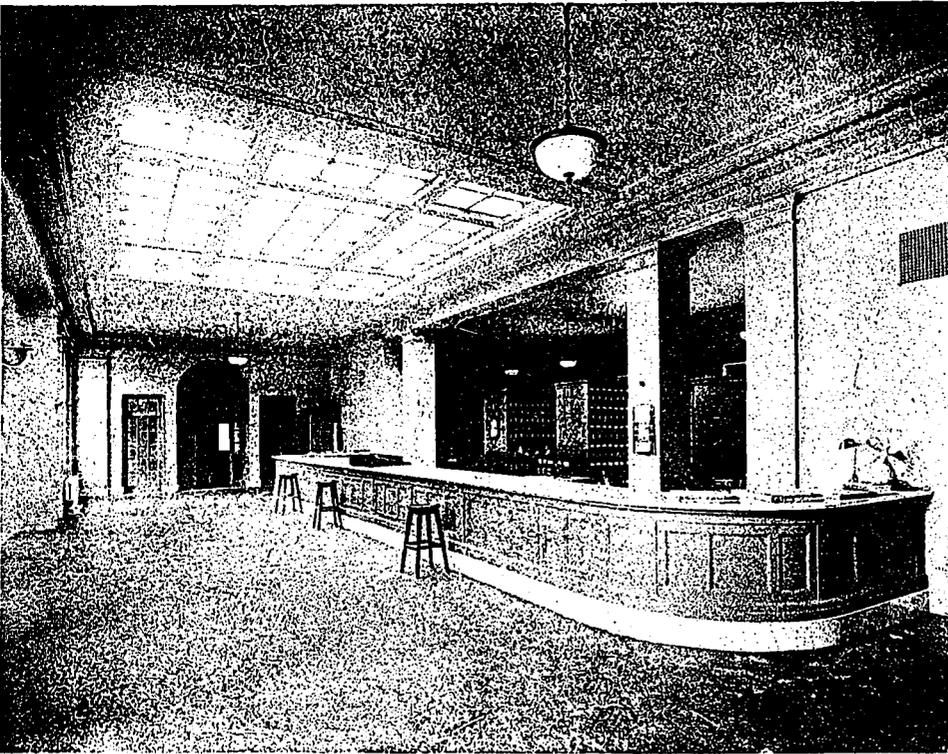
SECOND FLOOR PLAN, REGISTRY OFFICE, TORONTO.

CHARLES S. COBB, ARCHITECT.



BASEMENT FLOOR PLAN, REGISTRY OFFICE TORONTO.

CHARLES S. COBB, ARCHITECT.



SEARCHING OFFICE, LAND TITLE SECTION, REGISTRY OFFICE, TORONTO.

forced into the rooms by a large fan. This air is under complete temperature control, and is intended to enter the rooms at a temperature from 70 to 75 degs. F. and with a standard moisture content from 50 per cent. to 60 per cent. of saturation. The control of the moisture is obtained by controlling the temperature of the air leaving the air washer. Of course this humidity control is not effective when the amount of moisture in the outside air is greater than that necessary to give a saturation of 50 per cent. to 60 per cent. after the air is warmed

to a temperature of 70 degrees.

An exhaust fan is installed in the attic and is connected by a system of galvanized iron air ducts to all the lavatories. This fan has an extra large capacity and gives very thorough ventilation by exhausting the air from these rooms.

Coal and ashes are handled by an overhead trolley system which enables the firemen to transfer coal directly from the bin to the hoppers over the furnaces and to transfer cans of ashes from the space in front of the boilers to the hydraulic lift which elevates them to the street level.

A stationary vacuum cleaner is installed in the pump room and connected by iron pipes to outlets located throughout the building so that all rooms are accessible to the vacuum cleaner hose.

PLUMBING.—The entire building is equipped with a modern system of plumbing and drainage. All piping in connection with this work above the basement floor is extra heavy galvanized iron, cast iron piping is used below the basement floor. There are sixteen lavatories, equipped with 79 high grade vitreous china and porcelain fixtures. All lavatories are supplied with hot water from a storage tank located in the boiler room.

ELECTRIC SERVICE.—The ventilating fans, vacuum cleaner, sump pump and elevator are all operated by 230 volt, direct current electric motors, and the entire building is wired with a complete conduit system for illuminating purposes. There is also installed a secondary system of conduits for telephone and call-bell wiring. The electric service for lighting is 3-wire 115-230 volt, 25 cycle alternating current. The original plan shows 74 electric circuits under the control of 255 push button switches and serving 385 lighting outlets.



SEARCHING OFFICE, REGISTRY DIVISION, REGISTRY OFFICE, TORONTO.

Professional Ethics

By W. A. LANGTON.

(Paper read before the Royal Architectural Institute of Canada.)

WHEN I spoke to a leading architect of Toronto on the subject of this paper, he said: "All a man has to do is to behave like a gentleman."

That is true, but an understanding of circumstances is required as well. The instinct for right conduct is the better fitted for action by considering in advance the types of judgment it may be required to make.

A right understanding of the principles that should regulate the behaviour of those who practice a profession is involved in a right understanding of the nature of a profession. In considering that we shall, at the same time, be able to consider the snares that lie in wait for the inexperienced and the thoughtless; snares manufactured, for the most part, by members of the profession, who do not understand the nature of their calling, or by the very public for whose advantage it is that the restraints of professionalism should govern the practice of architecture.

A profession, then, as distinct from ordinary labor and from most kinds of trade, has two essential peculiarities; it requires special knowledge so that those who want to obtain its results are obliged to put themselves in the hands of a trained practitioner; and the article which is for sale and purchase is the intangible, unassessable and unguaranteed measure of the practitioner's power to perform an important piece of work. There are, as it were, no goods upon the counter. This latter condition is, it is true, also the case in other callings in which the thing for sale is personal service only; but the element of importance is lacking. The stenographer and the office boy, the coachman and the cook, also offer for sale only character and ability to perform, but the results are immediate, and can be judged before any great harm is done. An architect, on the other hand, may lock up a fortune in an unprofitable building without the person principally concerned being aware of it until the work is done and its insufficiency begins to appear.

From these two essentials then—that the architect alone has the talent and training required for his work, and that his possession of these requisites is always unproved for work not yet done, we may deduce the principles that should govern him in his relation to his art, to his clients, and to other members of the profession.

The first point, then, and the principal point, in the ethics of architectural practice is that the architect should be able to do the work he undertakes to do. He must fit himself to deserve the confidence that is placed in him.

Most architects get the length of insisting that they be given the full confidence of their clients. They are always ready to exalt the architect. There are no doubt some who think that this Institute is intended to exalt the architect; to take care of his interest. It is not. This Institute and our provincial associations are intended to exalt the art and practice of architecture; to create high ideals of both in the minds of architects and so help them to better performance. These bodies are, therefore, really intended to take care of the interests of the clients of architects. There is no room for any other aim, for the practice of architecture is the service of clients. The architect must not only have no other aim which contradicts this, but he may give himself up wholeheartedly to this aim with the certainty that in it will be fulfilled all legitimate ends of his calling—art, honor, profit and good-will to men.

It may be asked, in connection with this: Is not the architect to think of his fee at all? In reply to this we must recognize that, though the carrying out of an architectural design is of so complicated a nature that the joy of performance can hardly obtain all through for the artist, as it does in simpler arts which are executed by the artist's own hand, yet it is creative work; and the result, in its development and attainment, are an end in themselves and enough to absorb the mind of a real artist, to the exclusion of thoughts of the reward. But the architect's mind, or the composite mind of a firm of architects, must include a grasp of the means of financing the expensive operation of producing good work. He must for that reason think of the cost when he undertakes the work, and must then, therefore, think of his fee. But the fact is that for nearly all kinds of services there is no occasion to think of it. The schedule of fees fixed by the associations are intended to make such thought unnecessary. They are arranged, so far as possible, to secure for all kinds of work a payment that will enable the architect to keep up the means of performing it properly.

If the provisions of the schedule prove to be insufficient, or an architect thinks he is entitled to more, he has a perfect right to fix a fee to suit his own ideas; and indeed he ought to do so. He cannot meet an insufficient fee by work to match. There is but one grade of professional work—the best; and it must be paid for. It must also be paid for by the client.

The latter condition opens up another point of proper practice. It is not conducive to the proper practice of architecture, that is to say, to the true service of the client, that the archi-

tect should receive pay from anyone but the client, or should find pecuniary profit in building for clients in any other way than by direct payment from the client. He may not, therefore, deal in building sites, in such a way that it is to his interest that a client's building should be placed on one site rather than on another. He may not be a party in the contract or have any interest in it. He may not receive payment of any kind from anyone who is concerned in the erection of the client's building, except the client himself, and, therefore, for instance, if he has made a successful invention in building material or contrivance, he had better get rid of the patent right altogether, rather than make his profit by royalties on its use. He must, in short, have payment for his work so arranged that he can give himself up to it, when it is once undertaken, without thought for anything but its perfection in the interest of his client.

Here arises another question which is often raised by architects: How far is the client to be honored in wishes which interfere with good design? This question deserves a paper to itself. The answer turns upon the question: What is good design? My own opinion is that, where the client's wishes have interfered with good design, the defect is to be referred to the designer. The problem set before the designer is the client's wishes. It is from these that he must make his design; not from his own preconceived notions embodying some architectural conception. We do not look for draughtsmen's designs from architects. Taste can take precedence of precedent. The true architect takes fire most when confronted by a problem. It is the reconciling of inconsistencies that gives life to his design. Why should we find the irregularities of old work, the freedom of good classic design, the imperfections in logic of the English Gothic so charming, and yet fear to have in our own work irregularities that have a reason and imperfections that make for comfort? It is seldom that faithful effort to combine good work with attention to the client's wishes will find that the two are really incompatible; but if it does, if the architect finds at length that he must suffer opposition, he will be able to back it with good reasons.

The architect must, however, be on his guard against falling in with the wishes of his client, when the latter wishes to do something that is not decent behaviour towards a neighbor, or in the way of evading municipal regulations. It must be remembered that at the back of his mind the owner is relying upon his architect to keep him within limits in these matters. He feels out in consultation how far he may go in considering exclusively his own interest, and will not think well of an adviser who lets him go too far. It is the architect's duty, in the first place, to see if the object the client has in

view can be obtained, without encroaching on the rights of others, by further study of the plan or by original contrivance. If it is manifestly impossible to do otherwise than wrong, it becomes the architect's duty to point out to his client that in so carrying out his wishes he would be giving him bad service, and that he must decline to do so.

Even at this pinch it must be seen that quarreling with the client is not included. The architect must be reasonable or he is wrong. If the architect is reasonable he must be right; and he is most likely to meet with the respect which is his due, and the deference to his opinion which the case demands. Where a client and his architect part in mutual anger, there is room for the architect to doubt the ethical correctness of his own conduct.

In this connection it is worth noting that it is part of an architect's professional honor to keep to himself all confidences made to him by his client in the way of business. In case of a quarrel, the architect will have exceptional opportunities of behaving like a man of honor in this respect.

The question of taking part in competitions, which exercised so much the minds of a past generation of the profession, has been settled for practice by a compromise. No architect really believes that there is any real ground for the idea of the general public that the best possible design for a building is to be got by making a selection from a number of designs by different architects. One may say with certainty that the designs are not the best that can be made; for any of the same architects would produce better results if they had an opportunity of studying the problem quietly in consultation with the clients. Nor is the selection that is made at all certain to be the best selection. But, because competitions offer such a chance of a short cut to pecuniary success, there are always architects to be found who will support them. The councils of the profession have, therefore, agreed to accept, as offering some chance to be productive of good work, those competitions in which the competitors are paid for their sketches, so that they can afford to put into them a proper amount of study.

The place formerly occupied by the competition question seems to be now taken by that of advertising. It is argued that advertising is good for both the individual architect and for the profession.

One has only to read the joyous revelations of their methods, made occasionally by successful advertisers, to understand that the kind of advertising which gets results out of proportion to the value of the thing offered—the kind of advertisement which most affects the imagination of the commercial world in favor of advertising—can have no place in the ethics of archi-

ecture. Nor is the public, which as the puff advertisers say, "Likes to be deceived," in the same mood when it proposes to employ an architect.

It seems at first like fantastic severity to say that, as a matter of simple information to the public, an architect should not advertise himself and his wares as a shoemaker does. How are people to know he is in practice if he does not let them know? How is he to have confidences placed in him if he does not let them know what he is good for?

The latter question is the more easy to answer. The case is different from that of the shoemaker, who advertises a finished product which anyone can come and see for himself and try on. An architect's wares are his potential ability to perform; an ability which for every particular case is still untried. It is a true instinct, therefore, which prefers that the client should come of his own initiative to seek the services of the architect. It puts the architect in a sounder and more honorable position. The reverse process, where the architect tries to invite or entice the client is, therefore, less sound and honorable.

As for the mere card of advertisement, giving name and address, it is futile if every architect adopts it, and all are advertised in the same manner and to the same extent. If advertising is to be to the advantage of any particular advertiser, there must be some introduction of the self-assertive note or some greater extent to the publication of his card. That is to say, there must be inevitably introduced among architects a competition in advertising. Who is likely to get the greatest advantage out of that? Not the beginner, for whose sake the practice of advertising is advocated; but the large and successful practitioners who know, as part of their general experience, how and where to advertise; who have the means to advertise extensively; whose name, with advertisement, will carry weight, just as it does without it.

If there is to be this kind of competition, it is well to remember the tax it will impose upon the profession in the way of cost; a cost which must be transferred to the client; and as it is not an expenditure incurred in rendering better service, will introduce a debasing leaven to disturb the present simple relation between charges and service.

The fundamental objection, however, to competitive advertising among architects, or any kind of effort "to get work," is that the case is again different from that of the shoemaker. People do not plump the savings of a lifetime into a pair of shoes. Most people have several pairs of shoes; different kinds, also, for which they will very likely go to different makers. Thus several of the advertisers in the trade will share the custom of one purchaser. It is

not so with architecture. As a rule, each building promoter feeds the profession with but one building. Any architect, therefore, who snatches at this building snatches it away from some one else. Pushing one's self in architectural practice is reaching out for work that would not naturally come to one; that is to say, it is taking away from someone else the work which would naturally come to him. This does not seem to be work for a Christian or a gentleman, and cannot, therefore, find a place in the proper ethics of architectural practice.

It is said, with regard to the question of advertising, that advertisement by individuals would help the profession generally, as the practice would tend to bring work into the hands of architects which might otherwise be performed without their assistance. If it did, the additional fee accruing to the profession as a whole would hardly equal the additional cost incurred by the profession from the practice of advertising; and it is very doubtful if the class of work brought in as a consequence of the advertising would bring, in its execution, much joy to the artist.

It is not likely that the public will ever come to look to an advertising directory for information in choosing an architect rather than read the record of his works. "*Si monumentum quaeris circumspice*" may be said of a living architect as of the dead.

The free publicity given by his works is every architect's best advertisement, and it is for the interest of all, both the public and the profession, that it should remain so. Young architects who are apt to favor advertising had better possess their souls in patience. Experience is necessary, as well as knowledge; and instead of despising the day of small things they should welcome the small beginnings which give them an opportunity to get thoroughly on their feet in practice, in preparation for the larger work which is sure to come if they acquit themselves well in what they find to do. Their interest, as the interest of all other people, lies not in short cuts which will bring incompetence to the front, but in the stability of the process by which the best architects get the best work.

In connection with young men and their work, it is worth while to notice a question that has arisen with the advent of large commercial buildings and large building firms. The builders are said to seek the elimination of the architect, offering to be responsible for the design as well as the construction of the buildings. We know, as a matter of fact, that there is no such elimination in the case of the most important buildings of this kind; nor in similar cases are the owner's interests likely to go unguarded for the want, that is to say, of an architect employed by himself; but there must be a good deal of commercial building on a large scale done in

this way. The designers, who work for the builders, must have an architectural training. Who are they? There may be some doubt among architects as to the propriety of architects being thus associated with builders. Any architect in such practice as to be in the way of employment to carry out similar work on behalf of the owner is not likely to be sought as a builder's designer, and the situation of now running with the hare and now hunting with the hounds is not likely to arise. For young men, however, graduates of the architectural schools, this is quite suitable work. They supply well what the builder wants, and will gain invaluable experience for themselves. Hack-work has always been a wholesome exercise for genius in the arts, and there have been much lower walks in hack-work in the past than these modern monumental performances in commercial building.

In conclusion, it is fitting to notice how important it is in order to practice architecture with ethical correctness, that architects should be associated, not only to discuss and elucidate questions bearing upon such practice, but to give one another the support of companionship in sustaining a standard that it is hard to uphold alone. The honorable among the dishonorable is apt to suffer loss; and if we agree in approving of the honorable practice of our profession we had better agree in practicing it thus together. This is the reason for professional associations, and it is also a reason why they should not be so wide open as to include practitioners who are unfit or unwilling to give good service to the public. Our associations should be bodies of the *elite*, and membership of them so obviously an advantage, not only from the professional standing it gives, but from the interest and value of the proceedings, that everyone who undertakes to practice architecture will find it important for him to seek membership and to devote himself to the kind of professional service that the associations exist to uphold. This refers more particularly to the voluntary association; and it is not at all certain that when there is full recognition of their necessity the effort required to make them of value will not make their influence in the production of good work in architecture greater than that of a statutory association, though less widely spread.

NEW AIR MOISTENING DEVICE

A novel scheme for securing the proper degree of moisture in connection with the use of a warm-air furnace has been proposed by a member of the engineering division of the Iowa State College.

A slot four inches long and one-half inch wide, with the long dimension horizontal, was cut near the top of the galvanized-iron furnace jacket directly over the evaporation pan. A strip of

wire cloth eight inches wide and four feet long was folded lengthwise through the center. A sheet of asbestos the same size was then folded in the same way. The paper was then placed between the two layers of wire cloth and sewed in place, using a wire drawn from the edge of the cloth.

This combination strip was then slipped in the hot air chamber through the slot in the furnace casing until the lower end of the strip could be drawn into the evaporating pan near the furnace bottom. The upper end of the strip was opened for a funnel.

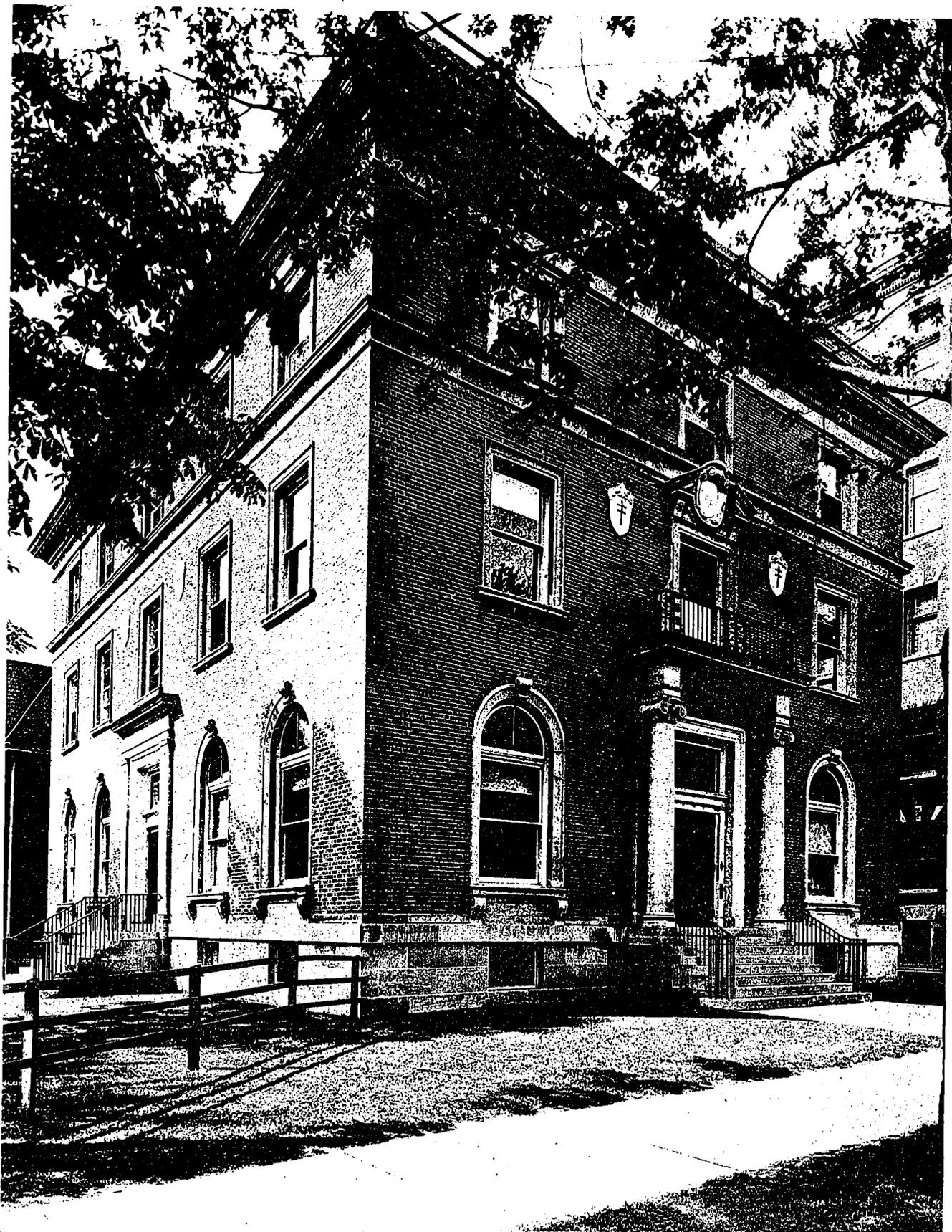
A connection was then made in the water pipe in the furnace roof and pet cock installed in this connection just above the the funnel in the upper end of the combination strip. Water allowed to drip into the funnel saturates the upper end of the asbestos strip. The length of the strip depends upon the rate of supplying water and temperature within the hot air chamber. In case water is supplied more rapidly than evaporated the excess collects in the evaporation pan below. As the weather moderates the amount of water supplied by moistening apparatus should be decreased or shut off.

In case water cannot be had in the furnace room a pail filled once a day with water can be supported by a hook placed in a floor beam above the furnace. The pail should have a hole punched in the side near the bottom and a pet cock soldered over the hole. Water can then be allowed to drip slowly through a piece of small hose into the funnel at the upper end of the asbestos strip.

A small hygrometer should be hung near a thermometer in one of the rooms. If a humidity of thirty per cent. to forty per cent. is maintained the temperature of the room can be kept at three degrees to five degrees lower with more comfort than if the humidity is allowed to fall to five per cent. or less.

An influential Canadian company has acquired a site on the Upper Ottawa for the building of a large sulphite mill and paper plant, and the opportunity is being taken to develop a model town adjacent to the mill site for the housing of the employees of the company and others.

A splendid site has been chosen for the town, which is being laid out according to modern principles of town planning under the direction of Mr. Thomas Adams of the Commission of Conservation. Before any buildings have been erected the line of each street has been blazed through the forest so as to fix the best street locations and to secure the best aspects for the dwellings. Areas are being set aside for open spaces, social centers, churches, schools, etc., in advance. The main approach to the town will be by a street 80 feet wide, passing through a square on which the stores and public buildings will be erected.



GAGE INSTITUTE, TORONTO.

Administrative Offices of the National Sanitarium Association.

CHARLES S. COBB, ARCHITECT.

GAGE INSTITUTE, TORONTO

THE head office of the National Sanitarium Association, at the corner of College and Ross streets, was erected during 1914, and is properly known as the "Gage Institute."

It provides (1) central administrative offices for its affiliated branches, including the two large sanitariums maintained by the association at Weston and Gravenhurst; and (2) modern clinical facilities for the examination of tubercular patients who are sent to either of the two places mentioned for treatment.

Without any precedent in plan to follow, the architect has evolved a scheme which gives an excellent working arrangement fitted to the individual needs of his client. While related one directly to the other, the arrangement separates the business offices and examination rooms into practically two distinct units. Patients on being admitted are taken directly by the elevator to the third floor, where examinations are conducted, and which provides a free dispensary, waiting room, throat room, X-ray laboratory, canteen, toilets, etc. A top light over the waiting room abundantly lights this floor, and the plan provides for future laboratory requirements.

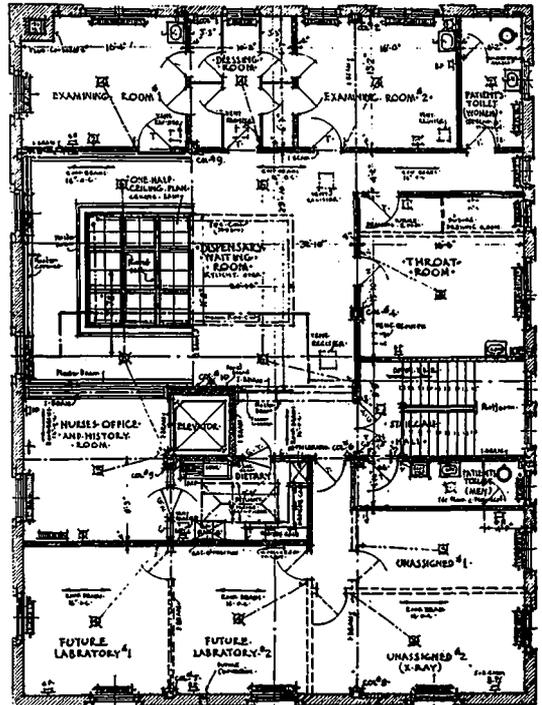
The business and accounting office and secretary's suite are grouped adjoining the main vestibule and circular reception hall on the main floor. In addition to this there is a separate dispensary vestibule opening on Ross street, and a small auditorium with sloping floors to accommodate about one hundred and fifty persons.

Offices for consulting physicians, a large

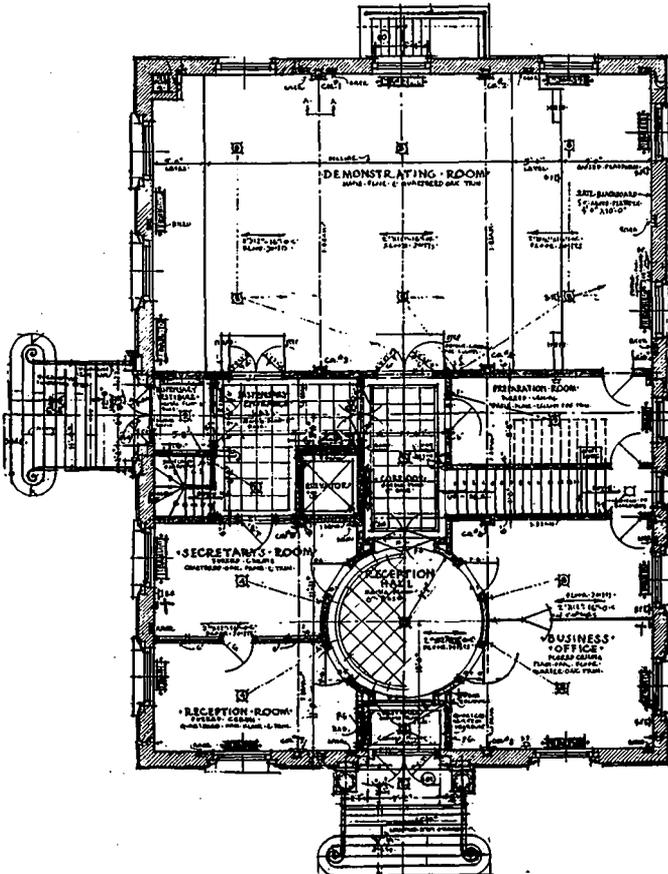
Board room and quarters for the Samaritans' Club (Women's Auxiliary); together with mailing department, are located on the second floor.

The basement contains the heating system and coal storage, janitor's quarters, staff toilets and store-rooms, and elevator machinery.

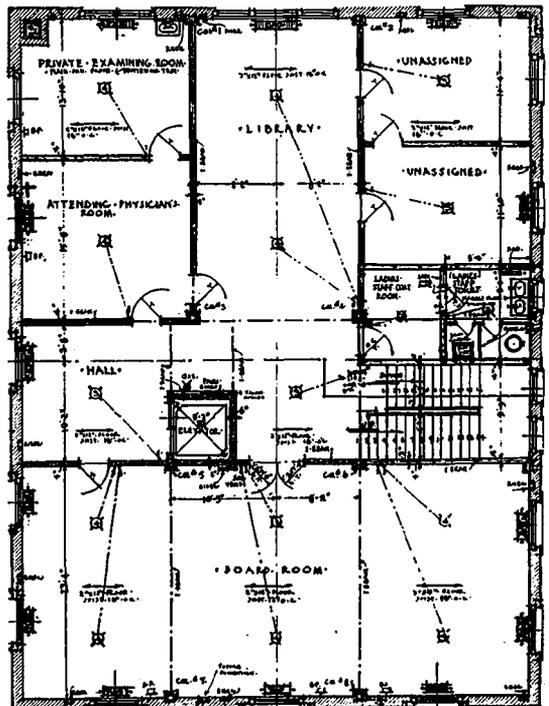
The exterior of the building is of selected grey tapestry brick laid in flemish bond. The trim is of buff Indiana lime-stone with cornice of terra cotta to match; the base courses consisting of buff Queenston stone. Steel is used for the frame work, with columns protected by hollow tile fireproofing. The trim is oak throughout, the floors of the vestibule and reception hall are of tile; and the walls are of enamelled plaster on all floors.



THIRD FLOOR PLAN, GAGE INSTITUTE, TORONTO.



GROUND FLOOR PLAN, GAGE INSTITUTE, TORONTO.



SECOND FLOOR PLAN, GAGE INSTITUTE, TORONTO.

Development of Architectural Design in Canada

BY ALFRED CHAPMAN.

(Paper read before Royal Architectural Institute of Canada.)

WE are in the position to-day of knowing more about the science of building than has ever been known in any previous architectural era. We may possibly know more about architectural design in its broader sense, but we do not know more about the æsthetic side of architecture; that is, the effect upon the senses and emotions.

When I say we may possibly know more about architectural design, I have in mind our great versatility in handling more or less intelligently anything from a skyscraper to a bungalow, or from a mantel to a cathedral, and we can dress these creations up in a Mission, Classic, Renaissance or Gothic character. We can also make the building fit the practical requirements of the organization to be housed, and give the building a character that more or less suggests its utilitarian purpose. We realize to-day, as we never realized before, the importance of this element of giving expression to the innermost character of the function a building serves rather than giving it a conventional, and to a certain extent meaningless, architectural expression. We have also a conception of what planning means that has in it the germ of a far-reaching development. This is clearly seen in the plans submitted for some of the more recent competitions, such as those held for the Government Buildings at Ottawa and the Winnipeg Parliament Buildings, where the arrangement and proportion shown in many of the plans are far beyond the conception held a few years ago.

When we come to the æsthetic side of architecture, by which I mean that element that raises the science of building to the same plane as the great arts of painting, music and sculpture, we have only to consider our dependence upon the great architectural epochs of the past to realize our weakness. How many architects of to-day could, without the assistance of their libraries, design a building with the classical beauty and refinement of a Parthenon, or with the robust and simple treatment of the Baths of Caracalla; or a building with the imaginative aspiration of a Rheims or Rouen Cathedral, or again, with the luxurious and clever composition of the Louvre? If we regard the fine poetic sentiment in the English Gothic collegiate or residential work, we must realize that this sprang from a deep sincerity and feeling in their work that architects of to-day are far from possessing. We cannot design on our own initiative with the perfection of any of these masters, but we have, as before mentioned, a remarkable versatility in producing a semblance to all of them. Furthermore, if we wish to copy them slavishly we can reproduce them with the assistance of an extensive library, but this, after all, is archeology, not living architecture.

This is what appears to me to be the position we are in at present, and now let us trace the steps by which we have arrived at this stage, after which I would like to consider certain elements affecting our further development.

About sixty years ago most of our best work was done by men who were trained in England, and who brought with them a sincerity and conservative restraint in their work which resulted in a dignified and sober treatment of Classic or Renaissance buildings, and a sincere treatment of Gothic that showed a familiarity with the better class of English work. Residential street architecture was treated then with more urban dignity than in the years following, particularly in Toronto. This is a curious anachronism, for consider how small the cities were at that time compared with what they are now. Our business districts were built up more substantially, and with more dignity, all of which expressed the effect of the solidity and thoroughness of English traditions. Architects of this period, however, kept carefully within bounds, and did not indulge in flights of imagination or attempts to solve new problems in new ways, and the school from which they drew their inspiration was rather dogmatic and limited, though sound and safe as far as it went.

As this period gradually passed and the flow of prosperity, occasioned by our rapid growth, spread over the country, we seem to have broken away from the influence of earlier traditions. The rapid expansion necessary, and the limited amount of capital to meet this expansion, led us into less thorough methods of construction and less careful designing. Owing to there being no restraint upon the practice of architecture other than the rather uncertain discretion of the public, we naturally find at times like these many practising architects who had not sufficient training or equipment, and this state of affairs led to a lowering of the standard and created the darkest architectural period of Canada's career. This flow of prosperity and building activity, however, died down, and Canada became subject to a good many years of depression, in which there were not a great many buildings erected.

In the earlier part of this century Canada began to realize its great future, and to waken up and go ahead by leaps and bounds, and the building expansion following assumed enormous proportions. This period gave birth to higher architectural aspirations, due probably in a large measure to the great architectural development of the United States, which, in itself, was due to the European training which led to the handling of problems in a freer and broader spirit, and also led to a more penetrating study of the old work. Undoubtedly the development

we have undergone in this last era of building activity places us farther on the road to architectural proficiency than we have ever been. We have more of a grasp of the real architectural problem, and we realize that the main element to be sought is a successful plan, and next to that an expression that leads the mind to grasp the essential character of the organization clothed by the building. We are emancipated from the necessity of cramping the problem to suit a preconceived design. When we compare, for instance, a modern station, office building, bank, library or school with the buildings housing similar organizations fifty years ago, we realize that we have developed a much broader grasp of the problem, but this ability is, after all, only elementary, and leaves us on the threshold of a really great architectural era. Are we going steadily forward in the great building expansion that is bound to come to Canada sooner or later, or shall we blunder along in a mediocre way? I think the threshold upon which we have stepped is also a cross-roads. There are some alarming factors in present day conditions which make me think the choice of roads at this juncture is of vital importance to our future architectural development.

The days of handling a large architectural practice in a small professional way are past. Consider the organization that is required to efficiently control a large amount of building under present-day conditions. First, there is the business and administration, then there is the structural part, the mechanical part, the supervision, and finally the creating and designing; in short, an efficient organization to create and purchase an article, or articles, totalling in value perhaps a million or so of dollars a year. We have not many of these organizations in Canada, but we will have in future years, and, what is more, to-day we have to meet the competition of such architectural organizations in the United States, and also of large building corporations encroaching upon the architects' province. This means that architecture to meet present-day conditions must be a highly organized business, and not a one-man profession, as it used to be, and I believe that this is a tendency growing out of modern economic conditions that cannot be altered.

The fact that we have to consider in this paper is its influence on architectural design. Such a development as the above means specialization and extreme proficiency in design, and this means at least ten years of training under the best of advantages. There are many in the United States being trained to fulfil these modern requirements in the way of design, but practically none in Canada. Our opportunity for training men is at a very low stage. We have not the control over the students that the old system of indenture gave us, and we have no ateliers like they have in the States which make

an excellent substitute for the former system. It is true we have our architectural colleges, but they only carry the student a short way along the road he has to go. In view of this, I venture to say that the head designers in the largest offices in Canada ten years from now will not be Canadian-trained men, and probably not Canadians, unless more action is taken in an educative line immediately after the war.

There is a very serious aspect to this question of the necessity of strong organizations to cope with the modern building conditions, and that is, if architects do not organize to meet these conditions, large building corporations, with every facility for extensive capitalization, will. In considering what effect this would have upon design, it can easily be seen that the building corporation's interest being to sell an article at a profit, they are not going to obtain the best possible solution of the problem unless it is to their monetary advantage to do so; and it is only to their advantage to sell an article that in a general way meets the requirements of the purchasing public. Although I believe the understanding of the intelligent public is the main-spring of all great developments in art, this understanding is generally subconscious, and it is the artist's work to tap the spring and develop it. This means conscientious pioneer work, which would never be to the interest of a building corporation to undertake. Undoubtedly, then, if building gets into the hands of business corporations whose sole interest is profit, architectural design will not arrive at the development which it would if controlled by the architect whose object should be to lead the client to the best solution of the problem in hand, even if he knows his efforts may not be appreciated for several years to come. We have only to consider the increasing control of large building operations by corporations on this continent to realize that this is not an imaginary but a real danger to the existence of architecture as a great art. By maintaining the highest ideals, and by educational facilities and a broad spirit of organized work together, we can maintain control of the situation and the spur of the danger, above mentioned, should accelerate the development of architectural design.

We can hardly hope to realize to the full our present ideals for a decade or more, even if we rise to meet the conditions referred to above. The training of the senses for pure beauty in form, rhythm and color can only be accomplished by years of constant effort backed by great enthusiasm, and this in itself needs to be sustained by the intelligent appreciation of the public whom we serve. To cultivate this appreciation of the public, which is the solid foundation for all art, and also to devise means whereby it will be satisfied within the bounds of Canada, seems to me the present-day duty to which we should devote our energies.

Transportation Building, Ottawa

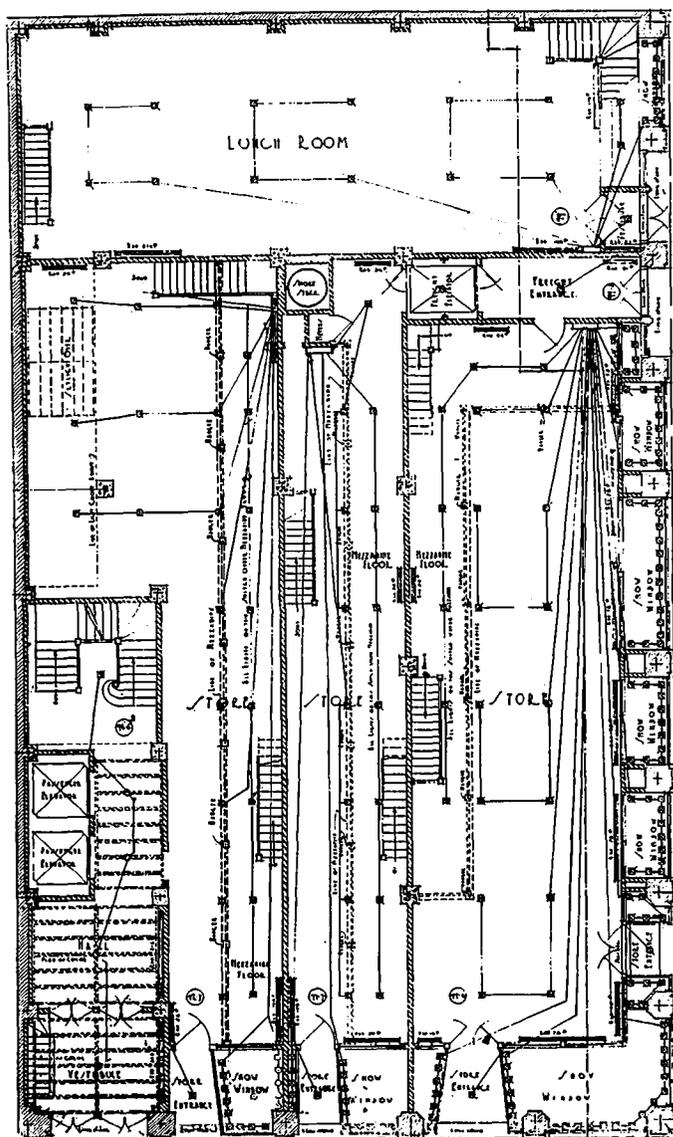
LOCATED at one of the most prominent intersections, the Transportation Building represents a recent development in Ottawa's business sections which visualizes the demand for modern store and office accommodations.

The design, which introduces a Gothic motif of simple form in the two facades, exhibits the vertical feeling characteristic of the modern tendency in buildings for this purpose, and is expressed in soft grey terra cotta with brick panels of a similar shade for portions of the front between the second and sixth storeys. Rising from a polished granite base, the piers are carried up to the top of the first floor and are linked together with arches over which a diapered band is carried round the two street fronts, forming a base for the pier above. At the level of the sixth floor another band is introduced ornamented with medallions, which forms a sill course for windows designed with elliptic heads in the upper storey. Above this is a cornice formed of a series of pendentives with perforated flamboyant panels.

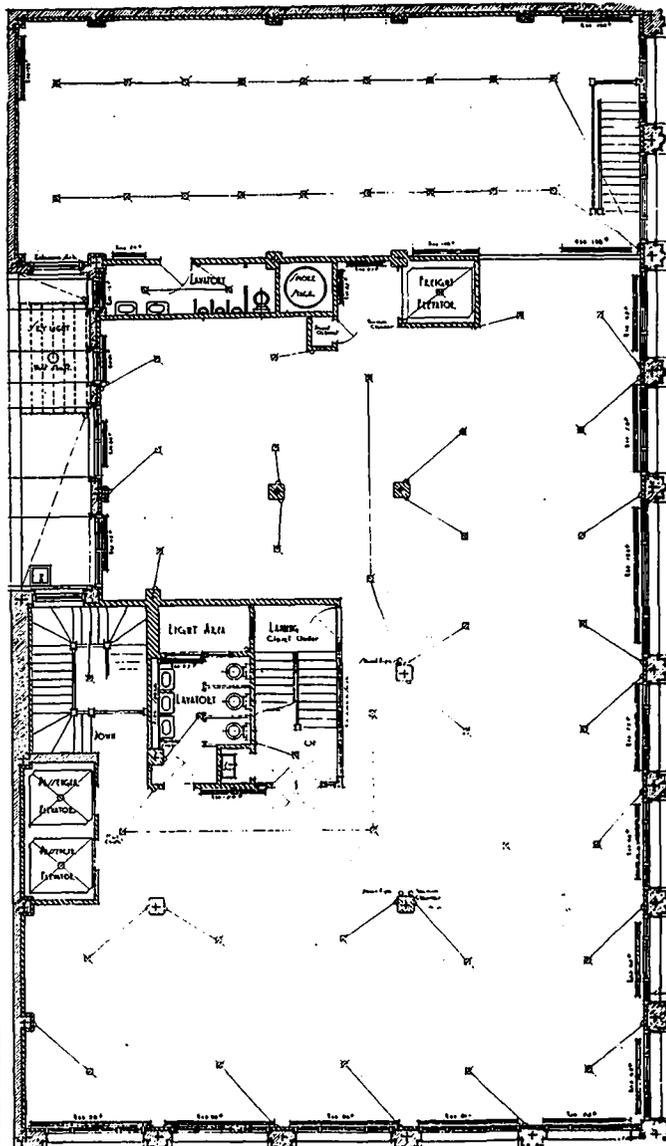
The frontage of the building extends 66 feet on Rideau street, and 116 feet on Sussex street. The main front on Rideau street is divided into five bays, four of which are used for stores and one as an entrance to the offices. These stores have a uniform depth of 90 feet, while the remaining portion on the Sussex street front is given over to a freight entrance with two smaller stores at the south end.

Entrance to the elevator and offices is through a vestibule and hall 11 feet wide and 16 feet high. Here the walls are panelled to a height of 12 feet with wide statuary marble in large panels, having light veined Broccadillo stiles. The base consists of dark grey Lapanto, and this also is used as a border for the floor of pink Tennessee marble. Above the marble panelling is a frieze of Gothic design employing the same motif as used on the exterior of the building, and terminating with a ribbed ceiling, having a slightly barrelled vault.

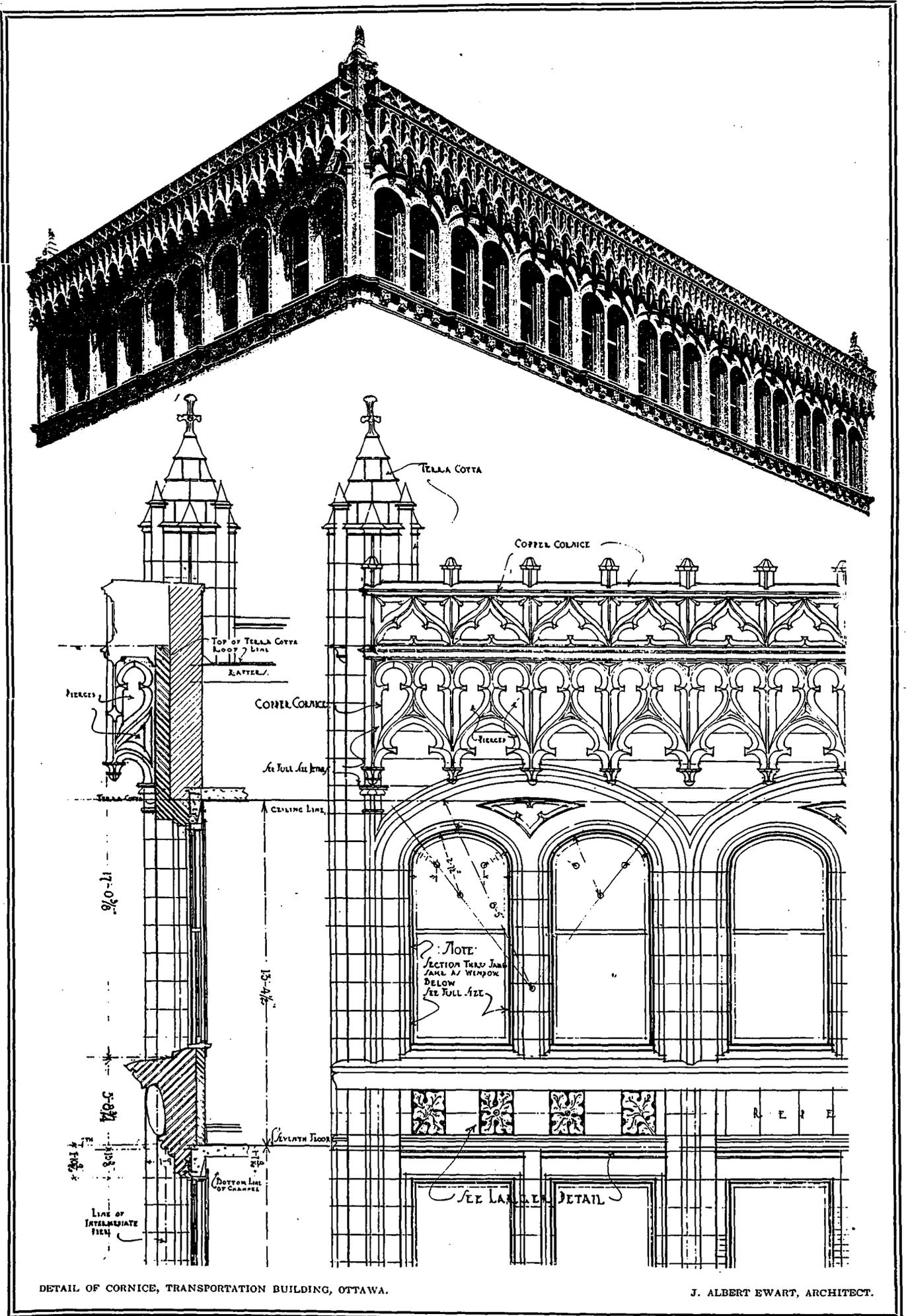
The staircase to the first floor is situated beyond the elevators and this is also executed with



GROUND FLOOR PLAN, TRANSPORTATION BUILDING, OTTAWA.



TYPICAL OFFICE FLOOR PLAN, TRANSPORTATION BUILDING, OTTAWA.



DETAIL OF CORNICE, TRANSPORTATION BUILDING, OTTAWA.

J. ALBERT EWART, ARCHITECT.

a Gothic motif with a balustrade and newels. From the first floor to the roof the staircase is of the simple character, and is enclosed with kalamine and wired glass partitions, thus forming an interior smoke-proof fire-escape.

The interior partitions dividing the offices are a patented sectional type containing double panels and double glass, so as to procure satisfactory sound proof results. The wood used is a high grade birch, stained a light grey in order to make the offices as light as possible.

All the equipment is modern throughout. The lighting fixtures are designed in the Gothic style in keeping with the architectural treatment. The elevators consist of two passenger and one freight elevator all of the traction type. The former is of a double screw model with a speed of from 400 to 500 feet a minute, while the latter consists of a single screw with a speed of 250 feet a minute. The shafts are constructed of terra cotta with kalamine doors at each floor, equipped with modern door controllers.

The heating system is of the simple steam vapor type with modulating valves on each radiator. The boiler consists of 125 horse power units, 72 inches in diameter and 14 feet long. A special setting has been used for these boilers whereby the gases, after passing the bridge wall, are carried under the shell towards the rear, and are divided and returned on each side of the boiler towards the front. Here they pass through the lower half of the tubes to the rear of the boiler and back again to the front through the upper half to the smoke breaching. A re-

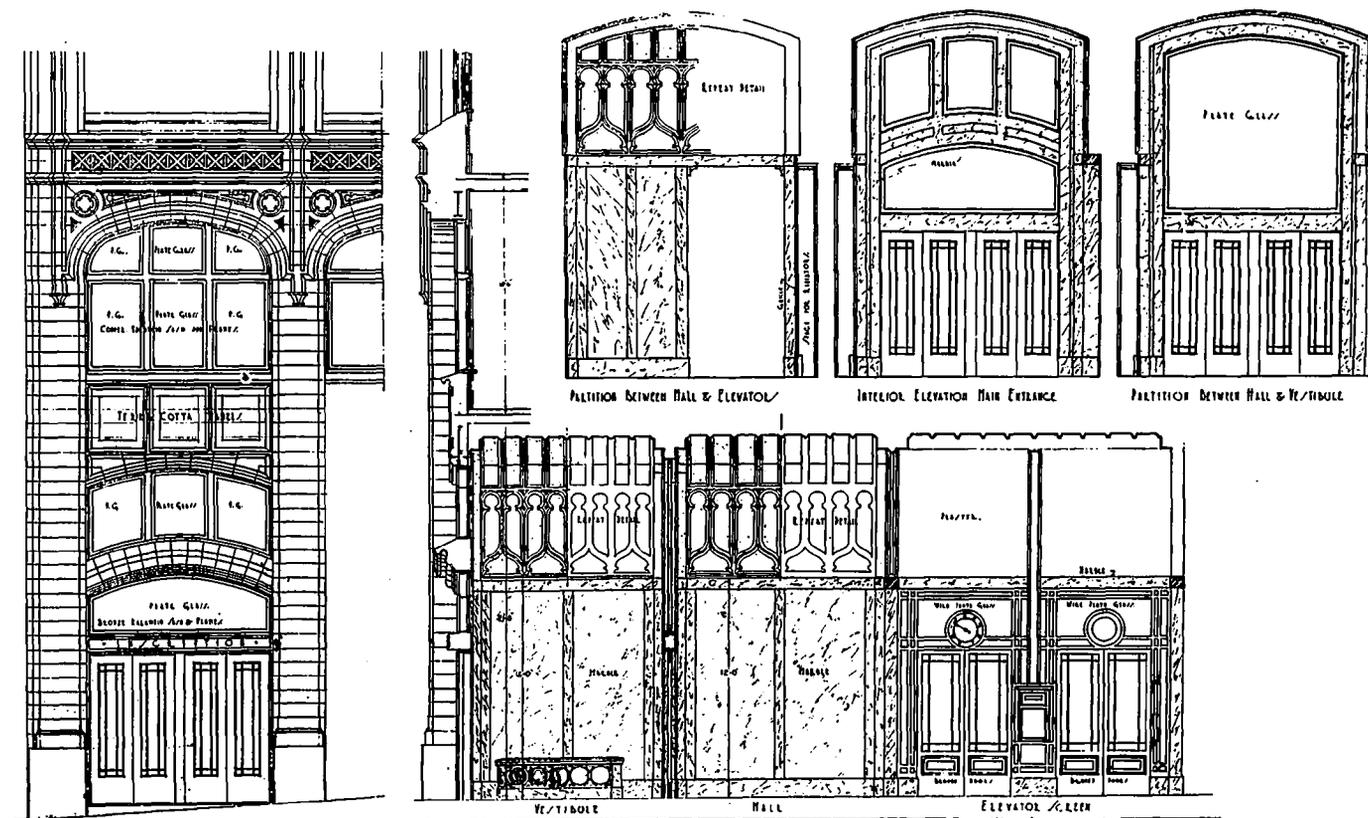
inforced plate is placed horizontally across the boiler between the head and the clean-out door. With this type of setting the temperature of the gases entering the stack is much lower than with the ordinary setting and a greater heat efficiency is obtained.

In excavating for the foundation of the building, rock was encountered over the entire site, and some three thousand yards had to be removed to obtain the required depth for the basement and boiler room.

The steel work for the superstructure was started in the middle of March, 1916, and was completely up four weeks later. As the steel work progressed, the concrete floor slabs were laid and the other trades were organized to follow in order; the entire structure being enclosed and roofed by the first of June and ready for occupancy two months later, following the completion of a portion of the interior for the Imperial Munitions Board, who desired possession earlier than the completion date.

POWER DAM

A concern known as the Power Development Company, Limited, has given notice of application to the Minister of Public Works for authority to construct a dam in the St. Lawrence, near Cornwall, and to provide certain compensating works in connection with it. The proposition, it is thought, might be the reincarnation of the old Long Sault scheme, which was defeated after a bitter fight in Parliament. The company is incorporated with a capital of \$500,000.



DETAIL OF ENTRANCE AND GROUND FLOOR CORRIDOR, TRANSPORTATION BUILDING, OTTAWA.

Royal Architectural Institute of Canada

ON October 1st and 2nd the Tenth Annual Convention of the Royal Architectural Institute of Canada was held at Ottawa, but owing to the attendance being smaller than expected, the meeting was adjourned to a future date, the President being authorized to call the adjourned meeting to be held at Toronto in December or January, at the same time the Convention of the Ontario Association of Architects is held.

During war time the officers and members of the Royal Institute of Architects are desirous of holding the organization together and making such progress as is possible along the lines of improving educational facilities and obtaining more favorable legislation; protecting Canadian architects from unfair competition from other countries.

At the Ottawa gathering a very interesting discussion took place following the reading of a paper by Mr. J. P. Hynes, of Toronto, the consensus of opinion being that Mr. Hynes' suggestions should be further discussed by the architects throughout Canada and definite action taken to give greater protection to the Canadian profession. Very interesting papers were also submitted by Mr. W. A. Langton, Toronto, and Mr. Chapman, Toronto.

The most important action of the Ottawa convention was the acceptance of the application for legislation from the Architectural Institute of British Columbia. There have been two architectural societies in British Columbia, but it being understood that only one is now in existence, it was taken into the Royal Architectural Institute of Canada, this completing the chain of provincial societies from Quebec to the Pacific Coast.

It is hoped that during the coming year action will be taken to organize the architects in Nova Scotia, New Brunswick and Prince Edward Island into a Maritime Province association of architects.

The executive plan to hold the annual convention of the Royal Architectural Institute of Canada in a different province each year, holding the national convention at the same time as the provincial convention meets, the aim being to encourage a larger attendance at both the national and provincial meetings.

The ninth annual convention was held in Quebec a year ago, and if the tenth convention is held in Toronto shortly, jointly with the meeting of the Ontario Association of Architects, it would probably be arranged to hold the eleventh convention at Winnipeg next year at the same time as the Manitoba Association of Architects holds its annual convention.

CONSTRUCTION is pleased to accept the invitation of the Royal Architectural Institute of Can-

ada to publish the report of its convention and send copies to every member of the institute throughout the various provinces of Canada.

R. A. I. C. PROCEEDINGS

The meeting was called to order by the president, Mr. J. P. Ouellet at 10 a.m., the following members having signed the register as being in attendance: Messrs. J. P. Ouellet, A. Frank Wickson, L. H. Jordan, A. Chausse, R. M. Ogilvie, E. E. Temple, C. Brodeur, A. J. Barclay, J. P. MacLaren, John A. Pearson, Arthur R. Brydon.

In his opening remarks the president stated that the object of the meeting was strictly a business one, and that he would forego anything in the nature of an annual address in order that the matters to be dealt with could be taken up without delay. He referred briefly to the meeting held at Quebec City last year, stating that the work of three years, practically speaking, had to be attended to. There was a meeting of the council, a general meeting dealing with the business of the two preceding years, the election of members to the council, and proceedings in reference to the affairs of the institute for the year in which the meeting was held.

Mr. Chausse, honorary secretary, explained that the Quebec meeting comprised the seventh, eighth and ninth meetings and occupied two days. In reference to the minutes of the preceding meetings, Mr. Chausse stated that they were quite voluminous, and that it was usually the custom to accept them as read, and asked if this should be understood accordingly.

Mr. Wickson did not think that the meeting could pass or modify the minutes, not having a quorum, but perhaps could receive them, and this was adopted.

DELEGATES OF FEDERATED ASSOCIATIONS.

Delegates from the federated associations 1917-18 and 1918 council were reported by Mr. Chausse, honorary secretary, as follows:

Alberta Association of Architects—Richard P. Blackey, Calgary, Alta.; W. D. Cromarty, Edmonton, Alta.

Manitoba Association of Architects—L. H. Jordan, Winnipeg, Man.; H. E. Matthews, Winnipeg, Man.; J. H. G. Russell, Winnipeg, Man.

Ontario Association of Architects—C. H. Acton Bond, Toronto, Ont.; A. Frank Wickson, Toronto, Ont.; J. P. Hynes, Toronto, Ont.

Province of Quebec Association of Architects—D. R. Brown, Montreal, Que.; Alcide Chausse, Montreal, Que.; J. P. Ouellet, Quebec, Que.; J. Perrault, Montreal, Que.; Herbert Rainc, Montreal, Que.

The Saskatchewan Association of Architects have not yet sent in the names of their delegates. I telegraphed them two weeks ago, but have not received any answer.

President: We shall now proceed to the next item, which is the application for federation from the Architectural Institute of British Columbia (incorporated).

Mr. Chausse: This was discussed at the meeting of the council held at Ottawa in April last. A letter was read from the secretary of the Architectural Institute of British Columbia to the effect that the other architectural organization, which was known as the Institute of Architects of British Columbia, had gone out of existence, and asking that the Architectural Institute of British Columbia be federated with the Royal Institute. At the meeting of the council held yesterday, the following motion was adopted:

"Whereas, the council is in receipt of a letter from the secretary of the Architectural Institute of British Columbia stating that the British Columbia Association of Architects now no longer exists, and asking for federation with the R.A.I.C.; therefore, be it resolved that the Architectural Institute of British Columbia be admitted to the R.A.I.C., providing (a) that satisfactory evidence be forwarded that the British Columbia Association of Architects has been disbanded, and (b) that fees at the rate of \$2.00 for each member be forwarded, with a complete list of the members and a list of delegates to the council."

Mr. Wickson: I suppose as mover of that motion I should say the whole council felt that as our only information regarding the disbanding or demobilizing, or whatever you may call it, of the British Columbia Association came through the secretary of the rival association, we thought that in justice to the old association we ought to have something from it stating that this was the case, and we thought it was only fair and proper to put it up to the British Columbia Institute to furnish this information. All the secretary of that organization would have to do would be to get a letter from the secretary, or the former president of the association, to the effect that it is no longer in existence, then, according to this resolution, the Architectural Institute of British Columbia would automatically become federated with us. You will remember we had quite a time over that, and there was quite a lot of correspondence in regard to the subject, because each association was quite determined to be the one which would be federated.

President: There is one now which has a charter. It is not by any means a close charter, but it is a charter from the Provincial Government. That is the one we decided we would invite to join us, upon presentation of their credentials.

Mr. Chausse: They were incorporated by the Provincial Government of British Columbia on June 10th, 1914.

Mr. Jordan: I suppose we have to recognize that this meeting can only take communication of matters which are pending, as matters of information and general interest, and the only ultimate step we can take is to adjourn to some agreed time, upon the call of the president, for final action.

Mr. Wickson: This is a matter for the council. If the British Columbia Institute complies with the conditions we have laid down, the council will admit them, and it is not necessary for them to come back to the association for admission.

Mr. Wrigley (representing "Construction"): As Mr. Chausse told you before the meeting opened, we will be pleased to publish the minutes of this meeting in "Construction," which is

largely circulated throughout British Columbia. The fact that the minutes appear in it would permit those who are members of the British Columbia Association to see what is being done, and would give them an opportunity of taking whatever steps they might see fit.

Mr. Wickson: But, as a matter of courtesy to the members of the old organization, we do not think it right to accept the new association without something more than a mere statement that the other has been disbanded.

Mr. Wrigley: Still, the publication of what has transpired here would spread the information better, because you would only reach one or two gentlemen by correspondence.

Mr. Chausse: That is perfectly true. I may say I had an interview with Mr. Wrigley, of "Construction," and he tells me that paper will publish the proceedings of our meeting here today, including the papers which may be read. He has agreed to send a copy of the issue containing the minutes to each member of the Institute. This will save us the expense of publishing our proceedings this year.

President: I am sure we are very grateful to the publishers of "Construction" for this kindness, and we shall be very pleased, indeed, to take advantage of the offer.

APPOINTMENT OF AUDITOR.

President: We shall now proceed to the next item of business, which is the appointment of an auditor.

Mr. Chausse: Generally the auditor was appointed by the assembly, and has usually been a gentleman who resided in the same city as the treasurer. This year we have no treasurer. The president asked me to fulfil the functions of that office until a treasurer is elected. This was confirmed by the council meeting yesterday. I would suggest that this matter be left over until such time as the treasurer is appointed, then we may appoint an auditor from the city in which the treasurer resides.

Mr. Jordan: In any event we cannot appoint an auditor today, seeing that we have no quorum.

REPORT OF COUNCIL.

Mr. Chausse: There was a meeting of the council yesterday, but there was no quorum, and all the business was transacted with the understanding that it should be sanctioned at the general assembly. The following matters were dealt with at the council meeting: The secretary was appointed to act as treasurer pro tem.; the treasurer's report was received, showing a balance of \$935.40; the motion regarding the Architectural Institute of British Columbia, which has just been read, was adopted; it was resolved that steps be taken to send to the different associations and to the members of the Royal Institute the reports of the treasurer and auditor, as well as the proceedings of the assembly, including the papers read. This will now be done through the courtesy of "Construction."

The following resolution was adopted, on motion of Mr. A. F. Wickson, seconded by Mr. Alcide Chausse: "That the Council of the Royal Architectural Institute of Canada do hereby record the sorrow with which it received the news of the death of its honorary treasurer, Mr. J. W. H. Watts, R.C.A., whose outstanding ability, upright character and kindly nature had earned the admiration, respect and affection of all his colleagues, and shed lustre on his own name, and on that of his profession throughout Canada, as well as beyond its borders, and whose untimely demise has left a gap in the minds and in the hearts of his colleagues that no other can fill. That a copy of this resolution be forwarded to his family, with the expression of the heartfelt sympathy of this council and of the members of the Royal Architectural Institute of Canada, whom it represents."

Mr. Wickson: Although we cannot do any business, I would suggest that it would be a good idea if the minutes of the council meetings, which do not happen to be published, were forwarded to the different provincial associations. It would not be a very serious undertaking so far as the work involved is concerned, and I think it would be advantageous in the sense that those organizations would know what the council was doing, and would keep really more in touch with what was going on in the institute.

Mr. Jordan: I think that is an excellent idea.
Mr. Chausse: On the other hand, it might be an incentive to preventing the members of the council from attending the meetings, because they might get the idea that there would be no necessity of attending the meetings, knowing that they would get a report of what transpired. In any event, it would be a very simple matter to try it, and it might produce good results.

HONORABLE SECRETARY'S REPORT.

Mr. Chausse then presented the following report:
Montreal, 25th September, 1917.
To the President, the Council and the Members of the Royal Architectural Institute of Canada:

Gentlemen,—I beg leave to submit my tenth annual report as honorary secretary of the Royal Architectural Institute of Canada.

This organization, founded on the 19th August, 1907, under the name of the Institute of Architects of Canada, was incorporated by the Dominion Government on the 16th June, 1908, as the Architectural Institute of Canada. On June 2nd, 1909, His Majesty King Edward VII. granted us permission to adopt the prefix "Royal" to the name of the Architectural Institute of Canada. Up to the year 1912 the Royal Architectural Institute of Canada was independent from any other association of architects in Canada, but was allied with the Royal Institute of British Architects. After conference with the various provincial associations of architects, it was decided to amend our charter in order to federate with the provincial architectural associations throughout Canada recognized by the Royal Institute. A new charter was passed by the Dominion Parliament, and this society was incorporated under its present title of "The Royal Architectural Institute of Canada," or "L'Institut Royal d'Architecture du Canada."

The new organization comprised the entire membership of the following provincial associations of architects:
Alberta Association of Architects.
Manitoba Association of Architects.
Ontario Association of Architects.
Province of Quebec Association of Architects.
Saskatchewan Association of Architects.
There was no association of architects in the Provinces of Nova Scotia, New Brunswick and Prince Edward Island. In

British Columbia there were two architectural bodies, the British Columbia Society of Architects and the Architectural Institute of British Columbia. As we could not federate with two associations in one province the architects of British Columbia could not join the membership of the Royal Architectural Institute of Canada. Before we meet again it is hoped that the door will be opened to our colleagues of the Western Province, as negotiations are now under way for the entrance of the Architectural Institute of British Columbia into the membership of our institute. This will be done only if, as we have been informed, the British Columbia Society of Architects has ceased to exist. It is to be noted that the Architectural Institute of British Columbia was incorporated on June 10th, 1914, by the Legislature of the Province of British Columbia.

As already stated, every member of a federated provincial association of architects is ipso facto a member of the R.A.I.C., and each provincial society is represented on the council of the R.A.I.C., by two delegates for forty members or less, and one additional delegate for each additional forty members or fraction thereof. This council elects the officers of the R.A.I.C.

During the fiscal year 1916-1917 there have been two meetings of the council, one at Quebec, on September 9th, 1916, at which meeting the following officers were elected:

President, J. P. Ouellet; Vice-Presidents, A. Frank Wickson and W. C. Van Edmond; Hon. Secretary, Alcide Chausse; Hon. Treasurer, J. W. H. Watts.

It was decided to retain rooms for the office of the R.A.I.C. at No. 367 Beaver Hall Square, Montreal, at an annual rental of \$150.00; to retain the services of an assistant secretary at an annual salary of \$200.00, and to fix the pro rata rate of \$2.00 per member for the contribution of the provincial associations for the year 1916-1917. The hon. treasurer was authorized to pay the travelling expenses of the president, the hon. secretary and the hon. treasurer, attending council meetings and the Tenth General Annual Assembly. It was decided to leave the choice of the place for the next general annual assembly on the table until the next meeting of the council.

The second meeting of the council was held at Ottawa on the 23rd April, 1917. It was decided to hold the Tenth General Annual Assembly at Ottawa, on the first and second October, 1917. The sum of \$100.00 was appropriated for the sinking of a die for the R.A.I.C. medal, from a design to be chosen by the president. The question of the federation of the Architectural Institute of British Columbia was considered, but no decision was arrived at.

I regret to chronicle the death of my friend, the honorary treasurer of the Royal Architectural Institute of Canada since its foundation, Mr. J. W. H. Watts, R.C.A., was a model treasurer, and during the ten years he was an officer of this institute, he never missed a meeting of the council or an annual assembly, in Ottawa, Toronto, Montreal, Quebec, Winnipeg and Calgary. He was one of the founders of the institute, and it was through his energy and persistence that the R.A.I.C. is now a prosperous organization. Mr. Watts died at his home, Ottawa, on Sunday evening, August 26th, 1917.

Respectfully submitted,

ALCIDE CHAUSSE,
Honorary Secretary.

On motion of Mr. Jordan, seconded by Mr. Wickson, the report just presented by the honorary secretary was received.

TREASURER'S AND AUDITOR'S REPORT.

President: We shall now proceed to the receiving of the reports of the hon. treasurer and the auditor.

Mr. Chausse: When I heard of Mr. Watts' death I wrote to the president asking him what I should do about the books and papers of the association. He told me to communicate with Mr. Watts' family, and have them send me all the books. This I did. It was found that Mr. Watts had balanced his cash book about two days before he died, so the auditor's work was very easy. I had all the books audited by Mr. P. A. Gagnon, chartered accountant, Montreal, and his report is as follows:

Royal Architectural Institute of Canada.
Statement of Cash Receipts and Disbursements for the Year Ending August 31st, 1917.

Receipts.		
Balance in bank September 1st, 1916	.....	\$907.00
February 22nd, 1917, life membership of \$100.00 with interest (transferred)	.....	126.99
July 6—Ontario Association of Architects, 1915-1916	.....	268.00
July 6—Quebec Association of Architects, 1917-1918	.....	280.00
Aug. 22—Manitoba Association of Architects, 1917-1918	.....	80.00
May 31—Bank interest to May 31st, 1917	.....	19.73
		<hr/>
		\$1,681.72
Disbursements.		
Sept. 12—Typewriting report and postage (1916)	.....	\$1.76
Sept. 30—Travelling expenses, J. H. G. Russell	.....	124.55
Sept. 30—Travelling expenses, Alcide Chausse	.....	40.21
Sept. 30—Travelling expenses, John W. H. Watts	.....	31.70
Sept. 30—Stationery and printing, J. Bourguignon	.....	15.25
Oct. 30—A. W. G. MacAlister	.....	125.00
Dec. 2—Postage	.....	2.00
Feb. 22—J. P. Ouellet	.....	50.00
April 28—Rent of room for council meeting	.....	5.00
July 17—Salary Miss V. Morin to June 30, 1917	.....	200.00
July 17—Province of Quebec Association of Architects 1916-1917	.....	150.00
Aug. 31—Discount on three cheques	.....	.85
Aug. 31—Balance in bank	.....	935.40
		<hr/>
		\$1,681.72

Audited and verified as per my report of this date,
P. A. GAGNON, Chartered Accountant.
ALCIDE CHAUSSE, Acting Hon. Treas.
Montreal, September 27th, 1917.

Montreal, September 27th, 1917.
To the President, Royal Architectural Institute of Canada:
Dear Sir,—I beg to report that I have audited the cash receipts and disbursements of your institute for the fiscal year ended August 31st, 1917, including the vouchers, and I certify that the whole is correct.
The balance in bank has also been verified, and agrees with the cash book balance.

It has been impossible for me to check up the sources of revenue of your association, particularly the arrears of your members, having no list of your members in my possession.

I suggest that at the end of every fiscal year a list of members in good standing be attached to the treasurer's report, also a statement of assets and liabilities.

Respectfully submitted,

Yours truly, P. A. GAGNON.

Mr. Chausse: It is practically impossible to give the list of members as he suggests. We get the list of members from the societies with their cheques. If they do not send a cheque we do not know if they have one hundred members or fifty.

Mr. Wickson: I think that could be overcome by requesting the different provincial associations to send a list of their members.

Mr. Chausse: We do that every year. We write every society asking for a complete list of their officers, the names of their delegates, and a list of their members. Some reply at once, but some have not replied for two years.

Mr. Wickson: Have those who replied sent the names of the members, or have they just sent the number of members they have?

Mr. Chausse: They send the names each year. This list is checked with the list we already have, and the new names are added, or names are taken off as may be necessary. However, as I say, we only get the names with the cheques.

PUBLIC MONUMENTS.

Mr. Chausse read the following letter from Mr. Edmund Burke, of Toronto, in reference to the erection of public monuments:

Toronto, September 20th, 1917.

Aldice Chausse, Esq., Hon. Secretary Royal Architectural Institute of Canada, 367 Beaver Hall Square, Montreal, Que.

Dear Mr. Chausse: In view of the probable number of public monuments which will doubtless be erected at the close of this terrible war, would it not be well for the institute to make some move with regard to the appointment of an art jury to pass upon proposed designs. If Government assistance, both Federal and Provincial, could be secured, making such jury or juries official and authoritative, it might be made still more effective. There will be great danger of abortions in the way of monuments if some artistic supervision is not provided, and it seems to me that now would be the time to get the machinery into operation. Doubtless the various provincial associations would be interested in furthering such a scheme.

Yours truly,

EDMUND BURKE.

Mr. Wickson: While we cannot do anything officially in connection with the matter, there would be no harm in the secretary notifying the different provincial associations of the suggestion contained in Mr. Burke's letter, and they could, perhaps, act on it. It seems to me this is more of a provincial question. The Dominion Government could not, for instance, interfere with a monument that was put up in Ontario or Quebec.

Mr. Chausse: I will write to the provincial associations and inform them that this suggestion has been received, and that we submit it for their consideration.

PLACE OF NEXT MEETING.

The president stated that there was nothing before the meeting in regards to notices of motion, and that they would proceed to the selection of a place for the next general annual assembly.

Mr. Chausse: I suggest that inasmuch as this is not, so to speak, a legal meeting, we should try to meet at the same time as either the Quebec association or the Ontario association. I think if this were done we would be sure of a quorum. It might be arranged that the provincial society could have their meeting the first day, and the Royal Institute have its meeting on the second day. That might help to bring the members to the meeting, and be to the advantage of both organizations.

President: When does the Ontario society meet, Mr. Wickson?

Mr. Wickson: Their regular meeting is usually held about this time of the year, but we have called off our meeting for this year. We had it arranged for London, I think, and we sent out a circular letter to ascertain how many would come. We found there would not be a sufficient number to make it worth while holding the meeting, so we called it off.

Mr. Chausse: The Quebec association will meet in January. I may say that we had a lot of trouble last year to get a quorum for our meeting at Quebec, but we finally succeeded. It seems to me if we met jointly with the local body we would be able to get a quorum without any difficulty. If we decide to do that, it would simply mean that this meeting would be adjourned until another day.

Mr. Jordan: I would be rather in favor of adjourning to-day, to meet again at the will of the president, who will use his discretion in calling the meeting, being governed by the circumstances. I also am in favor of the policy outlined by Mr. Chausse, if it would encourage attendance.

Mr. Chausse: In any event it would be an interesting experiment, and I feel satisfied it would help the attendance of both organizations.

Mr. Jordan: It strikes me it would be a good idea to have the meeting in Toronto, and get acquainted with the Toronto architects.

Mr. Chausse: The difficulty is that we do not know when the Toronto architects will hold their meeting. If they meet within the next six weeks, say, there would not be time for us to send out our notices. It is possible there may be a notice to amend the by-laws, which is a very important thing. This may be done, because we find a quorum of seven for the council is too much. It is hard to get a quorum on account of the fact that the delegates are scattered all over Canada.

President: If Mr. Wickson would undertake to let us know what the Ontario association is going to do, and when the meeting will be held in Toronto, we might be able to govern ourselves accordingly.

Mr. Jordan: That was my idea in leaving the calling of the meeting in the hands of the president.

Mr. Chausse: The present meeting is held in Ontario, so if we met again in Toronto it would simply be a continuing of

this meeting in the same province. We had three meetings in Quebec last year. If the Ontario association were to hold its meeting in December or January we would have ample time to send out notices for our meeting, and to send out the necessary notices for the amendment of the by-laws. The matter might be left with the president in the meantime, as suggested by Mr. Jordan, to call the meeting at whatever place may be convenient.

President: Inasmuch as the last meeting was held in Quebec, or rather, inasmuch as the last three meetings really were held in Quebec, I would be in favor of meeting in Toronto, if it can be arranged that we will have time to do things regularly before the Ontario association meets.

Mr. Wickson: I will take it up with the president of the Ontario association, and will keep Mr. Chausse informed.

President: This completes our business for the morning, so far as our programme is concerned. There are, however, certain papers which have been prepared for presentation at this meeting. It is still early, and perhaps it would be as well for us to have the reading of one or two of these papers, and a discussion following. Mr. Hynes, of Toronto, has been good enough to prepare a paper on the question of the practice of technical professions in Canada being regulated by law. He has not found it possible to be with us at this meeting, and I would, therefore, ask Mr. Wickson to read Mr. Hynes' paper.

MR. HYNES' PAPER.

The morning session was concluded by the presentation of a paper on "Why the Practice of Technical Professions in Canada Should be Regulated by Law," by Mr. J. P. Hynes, of Toronto, and which, in the absence of the latter, was read by Mr. Wickson. Owing to lack of space in this number, this paper, which deals most interestingly with a highly important subject, will be published in the next issue of "Construction," together with the discussion it provoked, and which aroused a lively interest on the part of those who were present.

AFTERNOON SESSION.

At the opening of the afternoon session, called at 2.30 p.m., two papers, "Professional Ethics," by Mr. W. A. Langton, and "The Development of Architectural Design in Canada," by Mr. Chapman, were read in the absence of their authors. Both of those papers, which were ably presented and well received, are published elsewhere in this issue of "Construction," and deal with their subjects in a manner which entitles them to the earnest consideration of all members of the profession.

Following the reading of the above papers, Mr. Chausse, Secretary, referred to the payment of the expenses of the delegates who attended the Council meeting held here in April. There was a motion passed at that meeting authorizing the Treasurer to pay the accounts, but he thought he could not do so, because there was a resolution of another meeting which authorized him only to pay the expenses of the officials.

Mr. Jordan: The matter of meeting these expenses is one which will have to be taken up at the first opportunity when we have a meeting which can legally transact business.

Mr. Chausse: These accounts will simply have to stand over until we can get a quorum.

Mr. Jordan: I suppose this could be handled by correspondence. There is a provision in the by-laws enabling us to carry on some of our affairs by correspondence.

Mr. Chausse: The position is rather peculiar in regard to these accounts. The Council authorized their payment, but the Treasurer did not pay them. There was a motion passed in Quebec authorizing the Treasurer to pay the travelling expenses of the officials attending Council meetings and this Annual Convention. At the meeting held here there was another motion passed authorizing him to pay the expenses of all those attending. This was one of the highest Council meetings we ever had, there were nine members present.

Mr. Jordan: As I understand it at the present time, we have not any Treasurer to sign the cheques, so we could not put a cheque through in any event.

Mr. Chausse: We have accounts on hand which we are obliged to pay. It occurred to me that some arrangement might be suggested here to-day and communicated to the Council, and if the majority assent, it might hold until we have a meeting. This is covered by section 27 of the by-laws. Of course, there is another difficulty, the present Council is practically out of office now, because we have a list of delegates for the coming year. At the same time, the new Council could be communicated with, and could decide about the elections.

Mr. Jordan: I think the only way would be to send a communication and have one delegate from each Province vote on the question by correspondence. At the present time I do not see that we can do anything but keep the money until we elect a Treasurer by correspondence in order to pay our bills. When the new Treasurer comes into office, there is no reason why he should not pay the bills according to the orders issued last year, if he is satisfied the records give him authority. If the resolution was passed, that is as good an order as he could possibly get. Of course, as Mr. Chausse says, no one can sign as Treasurer now, and the bank could not pay a cheque until we elect a Treasurer.

Mr. Wickson: Section 22 of the by-laws says: "The Honorary Treasurer shall have charge of the funds of the Institute, shall receive the money and pay all accounts approved of by the President or by the Chairman of the Finance Committee."

Mr. Chausse, in reply to an enquiry from Mr. Jordan, stated that the Finance Committee consisted of Messrs. Burke, Horwood and Watts. At the last Quebec meeting the Council authorized the Treasurer to pay certain accounts in connection with the rent, convention expenses, and so on. These were paid without being referred to the Finance Committee. Of course, the Council had more authority than the Finance Committee.

Mr. Jordan: Naturally, what the Council does takes precedence over everything. Might I ask if cheques are paid by the bank on the Treasurer's signature alone?

Mr. Chausse: Yes. Section 22 says that accounts exceeding ten dollars shall be paid by cheque signed by the Honorary Treasurer.

Mr. Wickson: Some organizations have them signed by the President and Treasurer.

Mr. Chausse: And I think all cheques should be signed by the President and the Treasurer.

Mr. Jordan: I think the Treasurer should be bonded for a sufficient amount, the expense of the bond to be borne by the Institute. This is only a matter of good business, especially if

he is the only one who signs the cheques. Every organization does it, and my idea is that we should arrange for it before the new Treasurer is elected.

President: Whom would you suggest to the Council as Honorary Treasurer.

Mr. Chausse: Any of the delegates for next year would be eligible. The funds are in the Ottawa branch of the Bank of British North America.

Mr. Wickson: Did the Trustees of the Watts Estate turn the money over to you?

Mr. Chausse: No. It was a special account. The account is in the name of the Royal Architectural Institute, J. W. H. Watts, Honorary Treasurer.

Mr. Jordan: Although we cannot legally transact any business to-day, I have a few suggestions which I would like to leave with the Secretary to be taken up whenever there is a meeting which can deal with them. I do not know how they should be dealt with, but it seems to me they are matters which should be taken up.

First, I would suggest that before a new permanent treasurer is elected an arrangement shall be made for a bond for the treasurer, the expense thereof being paid by the R.A.I.C.

Second, that the travelling expenses of the president, secretary and treasurer be paid by the R.A.I.C. regularly. At the present time this cannot be done unless we pass a motion at each meeting, but, if we adopt a precedent, it becomes a matter of routine each time. I would also suggest that one-half the travelling expenses of the delegates from each province not represented by one of the above officers be paid by the R.A.I.C. That point has been brought up before. This money comes out of the funds which the provinces contribute, and I think if the institute paid one-half of the delegates' expenses it would encourage attendance.

Third, that the election of officers and the admission of the British Columbia Institute of Architects be effected by correspondence, under the conditions provided by the council.

Fourth, that Mr. Chausse act as treasurer, without bond, until a permanent treasurer shall be elected.

Mr. Chausse: That would mean I would also keep the books, and if I receive any cheques I would deposit them in the bank?

Mr. Jordan: Exactly, and keep the records going until the permanent treasurer can step in and do it in the regular way.

Mr. Chausse: I suppose I might deposit the money in the Montreal branch of the bank?

Mr. Jordan: Yes; you would be responsible for it personally.

Fifth, That cash prizes of \$100.00, \$75.00 and \$50.00 be offered in lieu of the gold, silver and bronze medals proposed, but that medals be struck off as soon as practicable, and awarded to such candidates as may prefer them.

Sixth, That the suit against the Dominion Government in connection with competition prizes be carried on at the expense of the R.A.I.C. as being a matter of sufficiently spread interest for all architects, instead of it being carried on by any one provincial association, and that the institute take the responsibility of seeing it through as a broad protection for all architects. This has not been brought up so far, but when the occasion occurs I would like to see it dealt with.

Seventh, That the R.A.I.C. offer its professional services to

the Dominion Government for war purposes, as an organization. If this organization can be of any use to the Government in any department in the way of assisting in consultation or advice, or by way of allowing its machinery to be used in executive work of any kind as a matter of patriotism, we should place ourselves at the disposal of the Government.

Eighth, That the pro rata tax be renewed for next year at the rate of \$2.00 for each member. This is a matter which has to be attended to each year.

These are simply suggestions, and if the council is able to have a meeting soon, they may be dealt with; or if it is thought advisable they may be settled by correspondence. At the present moment I simply leave them with the secretary for consideration.

I understand the secretary is preparing a roll of honor, and carrying it on?

Mr. Chausse: Yes. I have not received any names recently. I may say, however, that the publishers of "Construction" also have a list of their own, and I have given them mine. We wanted more details from the Saskatchewan association in regard to the grade of each man on active service, or what he was doing. They simply gave us the names. I wrote them asking for particulars, but did not get any answer. Then, I did not get any list from the Ontario association. "Construction" has a very complete list from Ontario, and I have given them the names I had, and both lists will appear in the coming issue of "Construction."

(Editor's note.—The list referred to has been omitted from this number owing to lack of space, but will be published in either the November or December issues of "Construction," and will include all names which are available up to the present time.)

Mr. Jordan: I understand you are just compiling it. Is it to be posted anywhere, or just put on the record of the institute?

Mr. Chausse: Just in the records of the institute. I understand "Construction" will publish a page with a note to the effect that the list is not complete, and if any architects or relatives of architects, have any further information to give it will be continued in another issue.

Mr. Jordan: It is rather counting upon the different provincial associations to send in the names of any of their members who may be on active service?

Mr. Chausse: Yes. Of course, it is rather difficult for us to get the information in any other way, because if a man has left no address the letter will simply be returned to us. We sent out circulars for this meeting, for instance, and about twenty-five could not be delivered, and have been returned to us. Many of these men may be at the front. This number of "Construction" will be sent to all the members of the institute, and the matter will be brought to their attention in that way. This will probably bring in more names, and complete the list.

Mr. Wrigley: I may say the present list comprises about one hundred and twenty-five names.

Mr. Chausse: Out of about seven hundred members.

Mr. Taylor: That is not only members of the institute, but members of the staffs as well?

Mr. Chausse: Yes.

This completed the business up for consideration, and the meeting was then adjourned.



THE NEW CUNARD BUILDING AT LIVERPOOL.

The New Quebec Bridge

IN placing the large centre span of the Quebec Bridge in position, Canada has achieved her great engineering object, namely, the erection of the largest cantilever bridge ever built. According to a published report, the first train will pass over the structure at a very near date, and it will only be a short time after that before full traffic operations are assumed. The magnitude of the work has made the undertaking a focal point of the engineering world for many months past, and this was intensified by the general public interest which was aroused in the final stages of the work.

The suspended span, which is 640 feet in length, not only represents the largest span of its kind, but the first cantilever span ever lifted into position; and the operation of hoisting it into place by the use of hydraulic jacks is something which has previously never been attempted. Besides this, the structure incorporates a number of features in design and construction which are quite new in bridge engineering. Chiefly among these is the Johnson K-truss design, whereby the trusses are built in vertical planes and braced with diagonals only one-half the height of the posts. This has not only successfully solved many of the problems confronting those concerned in the erection of the bridge, but results in all diagonals having an uniformly regular slope at an angle of 45 degrees, which gives the bridge a most pleasing appearance.

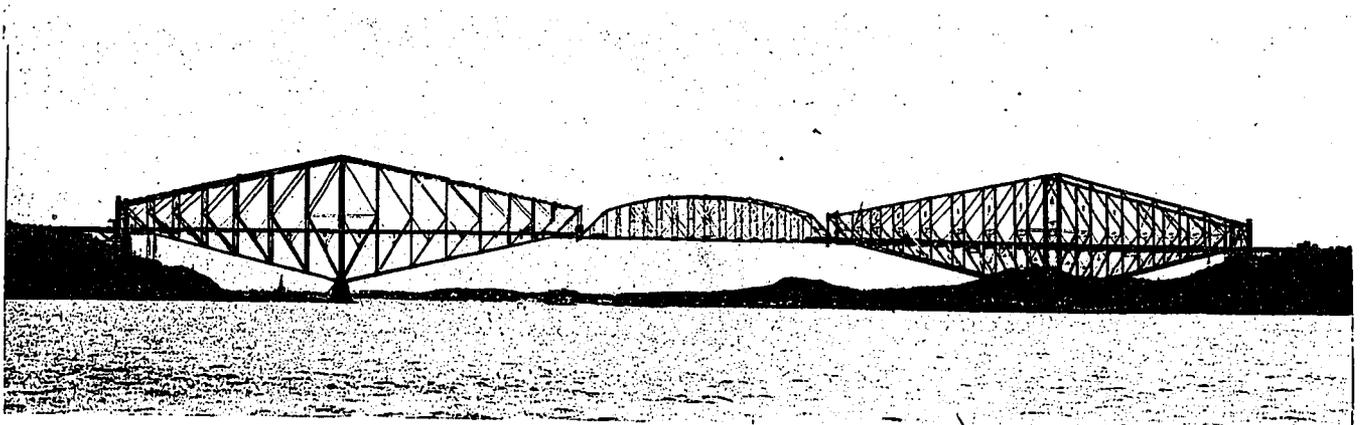
The principal dimensions of the bridge are: Length from shore to shore, 3,890 feet; width between buttresses, 1,800 feet; centre span, 640 feet; height of central span above river, 150 feet. Provision is made for two railway tracks, two street car tracks, and two roadways. The bridge has a channel span of ninety feet longer than the Forth Bridge, Scotland, which has previously held the world's record in that respect. The weight of steel in the bridge is 180,000,000 pounds, and the cost \$17,000,000.

The method of towing the scows from Sillery Cove to the bridge position followed the same procedure as last year; eight powerful tugs being employed to manoeuvre and hold the span into position at its final site. After the span was securely moored in this position, the chains, made of a series of bar links, by which it was to be raised, were dropped into position and attached to the span and lifting operations started. The span was raised into position by 75 two-foot lifts, occupying four days' time.

Profiting by last year's disaster, a number of precautions were introduced to safeguard those engaged in the work, and no one was allowed on the span after it was once hitched up to the chains save the engineers who inspected the lifting connections from time to time. Last year the span was raised three feet at a time, but this year the engineers were satisfied with a two-foot elevation. After each hoist, the mooring trusses, which were ultimately to hold the span in place, were attached to the span to hold it until the jacks were ready for a new thrust. This was done to strengthen the support while the links of the chain were being taken out preparatory to the jack being hitched to those immediately beneath for a new raise.

A descriptive account of the lifting jacks and other equipment employed, together with various features of the bridge, was published in the September, 1916, issue of *CONSTRUCTION*.

The bridge is primarily to carry the Transcontinental railway between the Atlantic and Pacific; but will also be used by the C.P.R., G.T.R., Quebec Central, and a number of other railways. It is certainly a splendid tribute to Canadian engineering genius, and to those who were associated in the work either in the capacity of consultants or otherwise, great credit is due, and their accomplishment altogether minimizes any previous mishap in carrying out this great undertaking.



VIEW OF NEW QUEBEC BRIDGE, THE LARGEST CANTILEVER BRIDGE IN THE WORLD, SHOWING THE 640 FOOT CENTRE SPAN WHICH WAS RECENTLY RAISED IN PLACE.

CONSTRUCTION

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

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Vol. X Toronto, October, 1917 No. 10

R. A. I. C. Meeting

No one with a knowledge of architectural affairs in Canada can fail to realize the importance of the subjects discussed at the Ottawa meeting of the Royal Architectural Institute of Canada. Perhaps the situation is best summarized in the remark ventured by Mr. Chapman in his carefully prepared paper to the effect that architecture in Canada is at the cross-roads; and in answer to his question as to whether we will go steadily forward in the great building expansion that is bound to come sooner or later, or blunder along in the mediocre way, much will depend on just how the present needs of the profession are met and considered. In other words, changing circumstances have brought conditions both competitive and otherwise which demand the attention of the profession individually and collectively, if the more worthy objects governing the art and business side of architecture is to be attained.

This not only implies the need of effective association work on the part of all affiliated bodies, but also requires that the business side of architecture must be placed on a highly organized plane in order to successfully meet present economic conditions. In view of these circumstances, it seems rather unfortunate that the meeting of the Institute was not sufficiently attended to form a necessary quorum. It would indeed be gratifying to see a return to the active interest of a few years back such as led to a spirit of more or less controversy and discussion when architectural education and legislation were formidable topics. Perhaps the suggestion that the Institute should meet in the future when one of the Provincial bodies is in session, will help matters in this direction. The small attendance can probably be laid to the disorganizing influences brought on by the war, and not, it is to be hoped, to the lack of interest on the part of those who are principally concerned. Even in England, which is more directly involved by the war than we are in Canada, the architects are by no means neglecting questions which will have a bearing on the future of the profession; and we in this country should at least show a corresponding activity. In fact the present should be a good time to take up these questions seriously with a view to formulating a constructive policy that will attain the objects desired.

Material Market in British Columbia

The building material market in British Columbia, which suffered a curtailment as a result of the war, will now be benefited through the same agency (at least as far as lumber, steel and basic materials are concerned) as a result of the shipbuilding programme, which provides for the construction of ships totalling one hundred and seventeen thousand gross tons. The value of these ships, some fifty in all, according to the "Province" of Vancouver, is about \$25,000,000. While this estimate of construction of tonnage is only approximate, it includes practically every ship of importance in freight carrying. There are, however, a number of small ships being built, such as fishing boats, which have not been included. Some of these ships are already in the water, some scarcely begun, but the amount of tonnage given represents definite contracts only.

Shipbuilding, in a word, promises to become a much more important industry in Canada than ever before, and the Pacific Coast is a district which is sure to be benefited. It will mean the employment of a large number of men, and result in the circulation of wages, which is bound to stimulate activities in other lines.

Canadian Building and Construction News

BUSINESS BUILDINGS.

Hamilton, Ont.—Armour & Company are erecting a three storey office building, on Wentworth street. Piggott & Healey have the general contract. Cost, \$10,000.

London, Ont.—Work has started on a store building and garage, to cost \$15,000, to be built on Dundas street, by Robt. Slater, 203 Wortley avenue. W. G. Murray, Dominion Savings Building, is the architect, and L. H. Martin, 807 Princess avenue, is the general contractor.

Niagara Falls, Ont.—Architect J. Upper Collins, 49 Benson street, has awarded the following contracts for a brick drug store and office building, to be built on Queen street, for E. C. McNally, Welland avenue; mason, W. Howlett, 5th avenue; carpenter, Wm. Hodgkins.

Ottawa, Ont.—Alex. Christie & Sons, 359 Elgin street, have the general contract for remodelling former Grand Union Hotel into modern offices. Taylor & Horwood, Castle Building, are the architects. Cost, \$40,000.

Ottawa, Ont.—Architects Millson & Burgess, Union Bank Building, have complete plans for a \$65,000 reinforced office building, to be erected on Sparks street, for R. L. Blackburn, Union Bank Building. Excavation operations have been finished.

Ottawa, Ont.—Architect J. E. Ewart, Booth Building, has awarded the following contracts in connection with the new store addition, to cost \$45,000, which is being built by A. J. Freiman, 23 Rideau street; painting and glazing, Geo. Higman and Sons, 188 Rideau street; plumbing, W. G. Edge, Booth building.

St. Thomas, Ont.—Work has been started on the erection of a new building, at St. Thomas, for the Canadian Bank of Commerce. A. E. Ponsford Limited, St. Thomas, has the general contract.

Toronto.—Architect W. G. Hunt, Confederation Life Building, has completed plans for double stores and apartments, to be erected at the corner of Queen and Neville Park boulevard, for E. Gagnon, 2359 Queen street E. Cost, \$8,000.

Windsor, Ont.—The building owned by A. G. & W. E. Bellinger, 20 Ouellette avenue, and occupied as store and offices has been heavily damaged by fire. Total loss, including contents, \$35,000.

CIVIL ENGINEERING.

Locus Hill, Ont.—The York Highway Commissioners are erecting a bridge over the Rouge River, to cost \$7,200, and have awarded the general contract to the Lewis Construction Company.

CLUBS, HOSPITALS, THEATRES AND HOTELS.

Arnprior, Ont.—The Campbell House, of which G. Lodge is lessee, has been damaged by fire to the extent of \$4,000. Insured.

Kingston, Ont.—McElroy & Birch have been awarded the contract for plumbing and heating, etc., in connection with the improvements which are being made to the Sir Oliver Mowat Sanitarium. The improvements will include the installation of fire mains, heating mains, and plant work.

Lindsay, Ont.—Plans have been completed by Architects G. M. Miller & Company, 93 Yonge street, for improvements to the Benson House, Burns & Lorengan, lessees. Work will consist of erecting an addition to kitchen and billiard room with guest rooms above. The sum of \$8,000 will be expended, of which \$4,000 will represent new plumbing work and equipment. Four billiard tables will also be installed. The general contractor is M. McGeough, Lindsay.

Renfrew, Ont.—The plumbing and heating contract for the new \$30,000 addition now being built to the Renfrew Hotel, has been awarded to John Conley & Company. Work will consist of vapor steam heating system and installation of twelve complete bathrooms. Cost, \$7,000. Architect W. E. Noffke, Central Chambers, Ottawa.

Ottawa, Ont.—Tenders have closed for changes in heating system and alterations to building in connection with the Isolation Hospital, according to plans prepared by W. E. Noffke, Central Chambers.

Toronto.—The following additional contracts have been awarded in connection with the Women's College Hospital and Dispensary, 125 Rusholme road; painting, Bavington Bros., 44 Glenlake avenue; dumb waiters, Turnbull Elevator Company, 126 John street.

PLANTS, FACTORIES AND WAREHOUSES.

Brantford, Ont.—Architect W. C. Tilley, Temple Building, has closed tenders for a two-storey brick factory, 65 x 130, for the Kitchen Overall and Shirt Company. Cost, \$25,000.

Dundas, Ont.—The Pratt & Whitney Company of Canada, Limited, will erect a factory at Dundas, to cost \$200,000, and their architects, Harris & Richards, Philadelphia, Pa., have awarded the general contract to P. H. Secord & Sons, Brantford, Ont.

Hamilton, Ont.—Piggott & Healey, 36 James street S., have the contract for erecting a three storey ice manufacturing plant for Armour & Company. Cost, \$40,000. Operations have commenced.

Hamilton, Ont.—Work is underway towards the erection of an \$8,000 factory addition, for Fearman Bros., McNab street. McPhee & Kelly; Bank of Hamilton Building, are the architects, and Isbister Bros., 142 Emerald street S., the general contractors.

Hamilton, Ont.—Architects McPhee & Kelly, Bank of Hamilton Building, have awarded the contract for a brick addition, to be built to the factory of the Canadian Fasteners Limited, Main street. The Frid Construction Company is doing the work and operations are now underway. Cost, \$20,000.

Hamilton, Ont.—Work has been started on the new three storey, brick and reinforced concrete wire mill, to be built by the Steel Company of Canada, on Wellington street. G. J. Hutton, Bank of Hamilton Building, is the architect, and W. H. Yeates, 24 Leeming street, is the general contractor. Cost \$75,000.

Hamilton, Ont.—The following additional contracts have been awarded in connection with \$75,000 factory addition, now being built for the American Car Company, Emerald and Shaw streets: Sheet Metal, Denis Joclyn, 13 Walnut street; roofing, Bird & Son, 70 King street E.; plumbing, Adam Clark, 7 Main street W.; painting and glazing, P. Thompson, 13 Walnut street. W. H. Cooper, Clyde Building, is general contractor.

London, Ont.—Architects Watt & Blackwell, Bank of Toronto Building, are preparing plans for a factory for the London Art Woodwork Company, Dundas street, to cost \$25,000.

London, Ont.—The London Art Woodwork Company, Dundas street, intends to erect a two storey reinforced concrete building. Tenders have been received but no contracts have been awarded as yet. Watt & Blackwell, Bank of Toronto Building, are the architects.

Owen Sound, Ont.—John A. Cole, Owen Sound, will submit a by-law to the ratepayers for the loan of \$75,000 for the erection of a factory for manufacturing metal products, to cost \$100,000.

Owen Sound, Ont.—The Keenan Woodenware Manufacturing Company are erecting a three storey, 135 x 63, brick and mill factory, according to plans prepared by architects Forester & Clarke. Cost, \$15,000. James Grier & Campbell, Owen Sound, are the contractors.

Peterboro, Ont.—B. F. Ackerman, Son & Company are equipping part of present factory (8,000 square feet) for the manufacture of boots and shoes. It is the intention to build an addition at some future date.

Sault Ste. Marie, Ont.—The International Paper Mill Company is contemplating the erection of a \$250,000 paper and pulp plant.

Tilbury, Ont.—The Hesso Electric Company intends to erect an \$80,000 plant on Louis street, to comprise a three storey building, 200 x 50, and a two storey building, 100 x 50. The structures will be of reinforced concrete and modernly equipped.

Tillsonburg, Ont.—The Maple Leaf Harvest Tool Company, Tillsonburg, are erecting a factory to cost \$50,000, and have awarded the general contract to A. E. Ponsford, St. Thomas, Ont.

Toronto.—The Willys-Overland Limited, Weston road, are building a \$7,500 addition to their shop. The Crescent Concrete Company, Temple Building, are the general contractors.

Toronto.—The T. Eaton Company, Yonge and Queen streets, are negotiating to purchase a site on Coxwell avenue, now owned by city, with a view to erecting a warehouse, costing \$65,000.

Toronto.—Foundation work has been started on a five storey factory to be erected on King street, near Spadina, for R. G. Long & Company, 730 King street W., to be of brick and mill construction, and to cost \$40,000. Thos. Essery, Confederation Life Building, has the contract.

Toronto.—Architects Prack & Perrine, Lumsden Building, have awarded the following additional contracts in connection with the new \$100,000 factory which is being built at Carlaw and Natalie streets, for the Palmolive Soap Company; heating and piping, A. Welch & Son, 304 Queen street W.; elevators, Otis-Fensom Elevator Company; electric wiring, E. F. Salisbury, 49 Wellington street E.

Toronto, Ont.—Work has commenced on a factory for the Liquid Air Company, 13 Doler avenue, to cost \$20,000; R. H. Harman & Son, 248 Dupont street, has been awarded the mason contract. J. W. Woods, 39 Front street west, is erecting a warehouse on Pearl street, to cost \$15,000, and his architect, J. L. Havill, Imperial Oil Building, has awarded the following contracts: metal sash, A. B. Ormsby Co., Ltd., 48 Abell street; plumbing and heating, Harry Hicks Co., 202 Church street. Drummond & McCall Company, 373 Front street east, have prepared plans for an addition to their warehouse on Front street east, to cost \$12,000. The Canadian Hanson Van Winkle Company, 15 Morrow avenue, have prepared plans for an addition to their warehouse on Morrow avenue, to cost \$7,000.

West Lorne, Ont.—Plans are being prepared for a \$15,000 factory, to be erected by E. Weisbrood. Machinery will be purchased for textile manufacturing.

Woodstock, Ont.—The Woodstock Cotton Spinning Company are excavating for a factory, to cost \$40,000; Bond & Lampan, Woodstock, have been awarded the general contract.

PUBLIC BUILDINGS.

New Liskeard, Ont.—The Provincial Department of Public Works has awarded the contract for a stock judging pavilion, to be built at New Liskeard, to Hill, Clarke, Francis Limited, a local firm.

Sarnia, Ont.—The ratepayers have voted in favor of a by-law authorizing an expenditure of \$25,000 for the erection and equipment of an incinerator plant.

St. Catharines, Ont.—The Grand Trunk Railway have commenced work on a station at St. Catharines, to cost \$25,000.

Ottawa, Ont.—The contract for enamelled brick, required in the erection of the new Parliament Buildings, has been awarded to Dartnell Limited, 8 Beaver Hall square, Montreal. J. W. McGuire Limited, 91 Jarvis street, Toronto, has been awarded the contract for the plumbing pipes and fixtures, which involve an expenditure of \$129,000.

MISCELLANEOUS.

Amherstburg, Ont.—The Brunner Mond Company are preparing plans for a dock and wharf, to cost \$50,000.

Aylmer, Ont.—The Carnation Milk Products Company, Limited, are preparing plans for a storage building. Work on this building will commence in November.

Chatham, Ont.—The Canadian Bank of Commerce is erecting a new building at the corner of King and Sixth streets. Mr. Horsburg, Dominion Realty Company, Toronto, is the architect, and the Dickie Construction Company, Ryrie Building, Toronto, are the general contractors.

Coniston, Ont.—The Mond Nickel Company, Coniston, are

erecting a dry house, to cost \$30,000, and their architect, W. L. Dethloff, has awarded the following contracts: Heating, Taylor-Forbes Co., Ltd., Guelph; plumbing, J. L. Mott Company, Ltd., 136 Bleury street, Montreal; septic tank, Kaustine Company, Limited, Toronto and Buffalo.

Fort William, Ont.—The Davidson-Smith Company, Grain Exchange Building, are excavating for a reinforced concrete elevator and feed mill, on Vickers street north, to cost \$100,000; Barnet-McQueen, Cuthbertson Block, are their architects. Fegles-Bellows, Grain Exchange Building, architects and general contractors, have commenced work on a reinforced concrete elevator for H. M. Patterson, Grain Exchange Building, to cost \$200,000.

Hamilton, Ont.—An addition, costing \$15,000, is being built to the shop of the T. H. & B. Railway. G. E. Mills, 614 King street E., is the general contractor.

Jordan Harbor, Ont.—The Provincial Department of Public Works has awarded to the Toms Contracting Company, Kent Building, Toronto, the contract for a new power house, at the Experimental Farm Station. The new building will be 75 x 37, tapestry brick and reinforced concrete construction with modern equipment throughout. This firm will also build the foundations for the proposed green house, regarding which the contract for the superstructure has been let to the Glass Garden Builders, Kent Building, Toronto.

London, Ont.—The Battle Creek Toasted Corn Flakes, Dundas street, contemplates the erection of a mill building, to cost \$25,000.

London, Ont.—E. Leonard & Sons, York street, have received estimates for the erection of a two-storey, 130 x 50, reinforced concrete blacksmith's shop to cost \$20,000.

London, Ont.—Architects Watt & Blackwell, Bank of Toronto Building, are preparing plans for the proposed soldiers' home, to be built for the local War Veterans Association. The building will cost \$25,000.

London, Ont.—L. H. Martin, 307 Princess avenue, has the general contract for the erection of a brick store and garage, on Dundas street, for Ralph Slater, 203 Wortley avenue. Cost, \$15,000. W. G. Murray, Dominion Savings Building, is the architect.

London, Ont.—Work has been started in connection with the new \$100,000 factory addition, which the Battle Creek Toasted Corn Flakes Company is building on Dundas street, adjoining their present plant. Archibald & Holmes Limited, Excelsior Life Building, Toronto, are the general contractors.

New Toronto, Ont.—Work on the superstructure of the new \$50,000 Hydro Sub Station, at the corner of Ninth street and Birmingham avenue, is progressing. It will be three storeys, 75 x 40, brick, steel and concrete. Witchall & Sons, 156 St. Helens avenue, have the general contract. Sub-contracts have been awarded as follows: steel work, McGregor & McIntyre, 1139 Shaw street; roofing, G. Duthie & Son, 30 Widmer street; painting, Taylor & Company; steel sash, Trussed Concrete Steel Company, 23 Jordan street; plumbing, Fiddes & Hogarth, 122 King street E.

Orillia, Ont.—Work has started on the new G. T. R. station, at Orillia. The structure will be one storey, 24 x 120, of brick construction and modern throughout. Cost, \$15,000.

Smith Falls, Ont.—Tenders have been received for a new exchange building, to be erected for the Bell Telephone Company. Cost, \$30,000.

Toronto, Ont.—Work has been started on a frame and galvanized iron addition to the fertilizer building of Gunns Limited, West Toronto. Cost, \$10,000.

Toronto, Ont.—Plans have been completed by Architect J. L. Havill, 56 Church street, for a brick service station, to be erected at the corner of Yonge and Roxborough streets, for the Imperial Oil Company. Cost, \$15,000.

Walkerville, Ont.—It is the intention of Hiram Walker & Sons Limited, to rebuild storage and dairy building, recently destroyed by fire at the Walkerside Dairy Farm. The new structure, which will probably not be erected until spring will cost \$10,000.

Wallaceburg, Ont.—Plans have been prepared by L. C. McNeice, Town Engineer, for a two-storey building, to be erected for the Wallaceburg Hydro System. The structure will be used as an office and store room and cost \$5,000.

Williamstown, Ont.—T. S. Hudson & Company, 42 St. Sacrament street, Montreal, has the general contract for building barn on the property of Col. D. M. Robertson, recently destroyed by fire. Structure will be concrete, frame and wood shingles, and cost, \$15,000.

RESIDENCES, ETC.

Hamilton, Ont.—Wood Brothers, Grosvenor avenue, have commenced work on a residence for Dr. G. Graham, Bartonville street, to cost \$3,500. A. McMullen, 41 Kensington avenue, is excavating for a residence on Balmoral avenue, to cost \$3,000. M. H. Kern is erecting a residence to cost \$3,000, and has awarded the mason contract to N. Nashuan, York street, and the carpenter work contract to Carter & Hardy, 261 Holton avenue.

Toronto, Ont.—R. G. Furness, 34 Russett avenue, is excavating for a residence on Regal road, to cost \$3,500. C. G. Ashley, Strathcona Apartments, has had plans prepared for a residence on Pote avenue, to cost \$5,000. Thomas Frankish, Coleman, Ont., has had plans prepared for a residence on Golf-view avenue, to cost \$4,000. G. W. Wingate, 29 Wolfrey avenue, has had plans prepared for the erection of a residence and garage to be built on Heath street west, to cost \$7,500. J. N. Walkley, 326 Shaw street, has prepared plans for three residences on Edna avenue, to cost \$9,000.

SCHOOLS AND CHURCHES.

Bramford, Ont.—The Board of Education has been investigating sites for the erection of a technical high school and also a grade school.

Highland Creek, Ont.—Scarboro Township Council has authorized School Section No. 7, Highland Creek, to issue debentures to provide a new two-roomed school, to cost \$10,000.

London, Ont.—Plans have been completed by Architects Watt and Blackwell, Bank of Toronto, Building, for a school, to be

erected on Ottawa avenue, for the Military Hospitals Commission. Cost, \$10,000.

London, Ont.—L. H. Martin, 307 Princess avenue, has been awarded the general contract for the erection of a school, at Manor Park, for the Trustees of Westminster Township. Cost, \$7,000. W. G. Murray, Dominion Savings Building, is the architect.

South Osgoode, Ont.—Tenders have just closed for a stone church, costing \$20,000, to be built for St. John's Congregation. Rev. Father F. Corkery, pastor. Millson & Burgess, Union Bank Building, Ottawa, are the architects.

Toronto, Ont.—Work has been started on a two-roomed school to be erected on Close avenue, for the Separate School Board, according to plans prepared by Architect C. J. Read, Confederation Life Building. The contractors are: mason, John McGlue, 285 Sherbourne street; steel work, McGregor & McIntyre, 1139 Shaw street; carpenter work, E. & M. J. Madden, 552 Adelaide street W.; roofing, E. F. Watson, 99 Beaconsfield avenue; painting, T. J. Phelan, 133 Queen street W.; plastering, W. J. Porter, 105 Balliol street; plumbing and heating, T. E. Regan, 95 Boon avenue.

Weston, Ont.—The Public School Board is discussing the advisability of purchasing a site and erecting a new building to relieve overcrowded conditions.

CATALOGUES and BOOKLETS

Refrigerators for Institutions.—The Eureka Refrigerator Company, Toronto, in their twenty-eighth annual catalogue, describe the construction of refrigerators for hotels, hospitals and institutions. A copy will be sent to any architect on request.

"Creo-Dipt" Shingles.—The Standard Stained Shingle Co., North Tonawanda, N. Y. have several folders in circulation setting forth the merits of creosoted stained shingles and the various shapes, grades, sizes and shades in which they are supplied. A series of photographic prints showing applications of "Creo-Dipt" shingles for various effects on walls and roofs, is also a feature of their publicity campaign, of unquestionable interest to designers of bungalow types.

Hospital Signal Systems.—Architects interested in the construction of public buildings and appliances for their requirements, will want to see a booklet issued by The Holtzer-Cabot Electric Co., Boston, Mass., covering the hospital signal apparatus of their manufacture. Several applications of the system are described, and lamps, semaphores, buzzers and annunciators to fit the variations of the signaling principle are shown. Floor plans, wiring diagrams and photographic reproductions of hospital buildings in which Holtzer-Cabot signal installations have been made illustrate the booklet.

Elevator Door Hardware.—The September issue of "Door-Ways," house organ of the Richards-Wilcox Co., London, Ont., deals with the subject of the company's Ideal brand of elevator door hangers and door-closers. There is an article by a member of the sales organization, and a number of letters and photographs testifying to the satisfactory use of these products in large buildings are reproduced. Names of inquirers directly interested in buildings will be added to the mailing list of the company, to receive monthly issues of this publication and full advertising literature on the Ideal line.

Expanded Metal for Concrete Work.—Corr-Mesh, a stiff-ribbed diamond mesh expanded metal for concrete, plaster and general stucco work, is the subject of a catalogue just issued by the Corrugated Bar Company, Mutual Life Building, Buffalo, N. Y., represented in Canada by Frederick Reed, 110 Church street, Toronto. The forepart of the catalogue is devoted to a detailed description of the material, its advantages and applications. Then follow designing tables, graphic construction details, and specifications relating to Corr-Mesh uses in partitions, walls, floors, roofs and ceilings respectively. Construction photographs are scattered throughout the catalogue in pleasing effect.

Vapor Heating System.—A carefully printed and well illustrated twelve-page booklet has been issued by the C. A. Dunham Company of Toronto, dealing interestingly with the Dunham system of vapor heating. It takes up in comparative order the various types of heating, with their merits and defects, and explains the seven units of the Dunham system. These include the Dunham radiator trap, packless inlet valve, air eliminator, pressurestat, thermostat, check damper and Dunham's damper motor, all of which are described in detail. The booklet contains a pocket or envelope at the back, so that the architect and others can keep all literature and data received from the company at subsequent dates intact.

Air Washers.—An interesting advertising novelty has recently been mailed out by the Carrier Air Conditioning Company, Buffalo, N. Y. It consists of a folding post card so cut and arranged that when the folds are laid back it gives a very thorough photographic explanation of the company's well known air washing system as completely installed. The company's product represents a specialized type of air washer adaptable to schools, office buildings, factories and other types of buildings in which a large number of people gather or are employed. It produces a uniformly atomized spray which thoroughly mixes and wets down the air, and claims a number of other individual features in design and construction.

Wrought Iron Piping Service Records.—Service claims for wrought iron pipe in plumbing, heating and power systems, are supported by citations of actual long and continued satisfaction, in a booklet circulated by the A. M. Byers Company, of Pittsburgh, Pa. This little publication is "an illustrated record of the service given by Byers pipe installed from twenty-five to forty years ago." The pictures show thirty-odd familiar industrial and office buildings, hospitals, hotels and municipal structures, each bearing a caption giving the date of installation of wrought iron piping for specific purposes and testimonials of its endurance. The booklet should be valuable to architects specializing in this type of building construction.

Small Cold Storage Buildings.—The Dominion Department of Agriculture has issued Bulletin No. 49, of the Dairy and Cold Storage Branch, entitled "Small Cold Storages and Dairy Buildings," the immediate sponsors for which are Mr. J. A. Rud-dick, Dairy and Cold Storage Commissioner, and Mr. Joseph Burgess, Cold Storage Inspector. The bulletin describes cold storage construction of a comparatively simple and inexpensive kind. Besides explanatory details of plans and material required for construction of ice houses and refrigerators, a

series of drawings prepared by the architect's branch of the Department of Public Works is presented, of which blue prints on a scale of one inch to two feet can be had free on application to the Dairy and Cold Storage Commissioner, while the bulletin itself can be had, also free, by writing to the Publications Branch, Department of Agriculture, Ottawa. Five different plans are given in the bulletin, with complete specifications for each and a statement of quantities of ice that can be stored.

"Good Lighting is Clear Profit."—The present tendency in factory and office-building construction proves that architects realize the value of good arrangement, satisfactory ventilation and scientific lighting, as they affect efficiency.

Probably the most important consideration in manufacturing buildings is the natural and artificial lighting facilities. Sufficient light, well diffused, will correct the time waste, errors and accidents of the dimly illumined or the improperly lighted building. Glare will cause eye-strain as surely as will a poorly lighted interior. And eye-strain affects the health of the workman and detracts from his accuracy and speed and has therefore a direct influence on the product.

These facts are emphasized and a remedy provided in a booklet published by the National X-Ray Reflector Co., Chicago, which gives details of increased production in fifty instances where systems of properly diffused lighting were installed in factories and offices.

There is also an interesting chapter on flood lighting for night construction work, advertising purposes or the always present necessity for protection against prowlers.

The book is illustrated with reproductions developing its arguments, sound logic of interest to the architect of any type of construction where the problems of either natural or artificial lighting become of unusual importance.

Electrical Specialties.—The new general supply catalogue, just issued by the Northern Electric Company, is one of the largest electrical catalogues as yet printed, containing no less than 1,485 pages and weighing 6½ pounds ready for mailing. It gives a most complete listing of up-to-date electrical specialties of every description, classified in twenty-two sections, each section commencing with a four-page colored insert printed on heavy coated paper. The catalogue introduces many innovations over previous issues, the most important of which is the method provided wherever practicable, whereby prices f.o.b. Halifax, Montreal, Toronto, Winnipeg, Calgary and Vancouver can quickly and easily be obtained. Heretofore electrical supply catalogues have given only the manufacturers' list prices and discounts, usually making it necessary for the purchaser to estimate his own freight (or freight and duty), where costs were required f.o.b. various destinations. In their new catalogue the company has taken care of these two very important elements entering into the cost of electrical supplies delivered to Canadian points. Montreal and Toronto are used as basing points and the list prices found in the catalogue apply to goods sold f.o.b. at these two places, except as otherwise noted. For other points where the company has warehouses, the approximate delivered prices can be obtained by adding to the list prices shown, the necessary percentage, as explained in foot note on each page.

MAY NEED TWO BILLION FEET OF LUMBER FOR WAR.

Estimates prepared by the Lumber Committee of the Advisory Commission of the Council of National Defense of the United States show that 2,000,000,000 ft. may be used for purposes directly connected with the war in the next twelve months. Construction of the sixteen cantonments which will house the new army will absorb a large amount of the Government's lumber purchases. The cantonments will require about 500,000,000 ft. Second in quantity of lumber required comes the wooden ship-building programme, now estimated at 400,000,000 feet.

CANADIAN WOODS FOR STRUCTURAL TIMBERS.

Too many Canadians in the past have been prone to think that what comes from abroad is better than what is produced at home. Largely because of this idea imported timber has been used in buildings on the edge of our timber lands. The Forest Products Laboratories of Canada, under the Forestry Branch of the Department of the Interior, have been investigating this question and have found that some of our Canadian timbers are superior to those imported, and just as cheap, or cheaper. This means much to us in war time, when every dollar produced or saved makes it by so much the easier to win the war. The results of this investigation have been published in Forestry Branch Bulletin No. 59, entitled "Canadian Woods for Structural Timbers." Lumbermen, builders, manufacturers, or others interested who have not yet received a copy may obtain one free on application to the Director of Forestry, Ottawa.

FRANCE TO BUILD HER OWN HOUSES.

The annual review of the work of the Canadian Commercial Intelligence Service has recently been issued. The report contains a few matters of interest to contractors. In regard to the portable house industry and trade it states that six models of portable houses were sent to Paris about midsummer of last year and were set up in the Tuilleries Gardens, a short time after the opening of the Reconstruction Exhibition held there. Mr. Frank Pauze, of Montreal, a member of the Canadian Trade Commission which visited France, furnished valuable information to several builders who made enquiries regarding portable houses. The six model houses were presented to the "Secours National," and are being utilized by the Canadian General Hospital No. 8, at St. Cloud. It was ascertained, the report says, that the policy adopted by the French authorities would be that the construction of houses for the devastated regions should be undertaken as much as possible in France.

PROGRESS OF THE PULPWOOD INDUSTRY.

The war, with its changes in trade routes and markets, has tended to greatly increase the pulpwood and pulp industry in Canada in the last three years. In fact, the industry has grown steadily since its inception. These facts are shown in a bulletin just issued by the Forestry Branch of the Department of the Interior. The total value of the pulpwood made into

pulp in Canada and exported in the raw state for manufacture abroad was nearly \$20,000,000. The amount of pulpwood made into pulp in Canada was 1,764,912 cords, an increase of about 300,000 cords over 1915. While over a million cords of wood were exported in the raw state for manufacture abroad, this was lower in proportion to the total pulpwood made into pulp in Canada than ever before, showing that the Canadian manufacturers are working up more and more of this raw material in our own country. The statistics of the industry are set out in Bulletin 62B, Pulpwood, 1916, which may be had free by application to the Director of Forestry, Ottawa.

CONTRACTORS and SUB-CONTRACTORS

As Supplied by The Architects of Buildings

Featured in This Issue

Administration Building, National Sanitarium Association, Toronto.

Boilers, Dominion Radiator Co.
Brick, Fiske & Co.
Brick Work, Teagle & Son.
Cabinet and Woodwork, Thos. Painter & Son.
Electric Fixtures, McDonald & Wilson.
Electric Wiring and Apparatus, McDonald & Wilson.
Elevators and Hoists, Otis-Fensom Elevator Co.
Expanded Metal, Pedlar People.
Fire Escapes, McGregor & McIntyre.
Flooring, Marble, Gibson Marble Co.
Furniture, Macey Furniture Co.
Hardware, Jobbers, Aikenhead Hardware Co.
Hardware, Yale & Towne.
Heating, Purdy, Mansell, Ltd.
Hollow Tile, Don Valley Brick Works.
Interior Painting, McCausland & Son.
Marble, Gibson Marble Co. and Vermont Marble Co.
Ornamental Iron, McGregor & McIntyre.
Paints, Pratt & Lambert.
Plumbing Fixtures, James Robertson Co.
Pumps, Purdy, Mansell, Ltd.
Plaster, R. C. Dancy.
Radiators, Gurney Foundry Co.
Roofing, Geo. W. Bryan.
Stone, Indiana Quarries Co.
Stone Work, Nicholson & Curtis.
Structural Steel, McGregor & McIntyre.
Tile, T. Eaton Co.
Terra Cotta, Northwestern Terra Cotta Co.
Vaults, J. & J. Taylor.
Vacuum Traps, C. A. Dunham Co.

Registry Building, Toronto.

Boilers, John Inglis & Sons Co.
Brick, Don Valley Brick Works.
Cabinet and Woodwork, J. A. Berridge.
Carpets and Rugs, Murray-Kay, Ltd.
Concrete Work, James A. Wickett, Ltd.
Electric Fixtures, Robt. Simpson Co., Ltd.
Electric Globes and Glassware, Robt. Simpson Co., Ltd.; MacBeth-Evans.
Electric Wiring and Apparatus, Fred Armstrong Co., Ltd.
Elevators and Hoists, Turnbull Elevator Co., Ltd.
Expanded Metal, Pedlar People, Ltd.
Fire Doors, A. E. Ormsby, Ltd.
Fire Hose, Goodyear Tire & Rubber Co.
Fittings, Office Specialty Co.
Flooring, Marble, Missisquoi Marbles, Ltd.
Furniture, G. N. Reynolds & Co.
Grilles, Tuttle & Bailey.
Hardware, Jobbers, Aikenhead Hardware Co.
Hardware, Yale & Towne.
Heating, Jos. McAleer and M. F. Thomas.
Hollow Tile, Don Valley Brick Works.
Interior Fittings, Cabinet, Decoration, Hughes & Co.
Marble, Missisquoi Marbles, Ltd.
Metal Door and Window Trim, Henry Hope & Sons.
Metal Lath, Pedlar People, Ltd.
Ornamental Iron, Geo. E. Meadows Co., Ltd.
Paints, Pratt & Lambert.
Plumbing Fixtures, Cluff Bros.
Plumbing, Purdy, Mansell, Ltd.
Plaster Work, W. J. Hynes, Ltd.
Radiators, Dominion Radiator Co.
Roofing, Paterson Mfg. Co. (Barrett Specification).
Steel Equipment, Office Specialty.
Stokers, Burke Furnace Co.
Stone, Geo. Oakley & Son.
Structural Steel, Toronto Structural Steel Co.
Structural Engineer, E. J. Smith.
Tanks, John Inglis & Co.
Tile, Italian Mosaic & Tile Co.
Vacuum Traps, C. A. Dunham Co.
Ventilating System, Canadian Blower and Forge Co.

Transportation Building, Ottawa.

Boilers, Efficiency Boilers & Heating Co., Ltd.
Concrete Work, Norcross Bros.
Electric Fittings, U. E. Davis.
Electric Fixtures, Etc., Electric Repair Contracting Co.
Elevators and Hoists, A. B. See Elevator Co.
Flooring, Cement, Dartnell, Ltd.
Glass, Hobbs Mfg. Co.
Hardware, Russell & Erwin Co.
Mail Chute, Canadian Cutler Co.
Marble, Vermont Marble Co.
Mill Work, Geo. M. Mason; Estate Jos. Davidson.
Ornamental Iron, F. A. McKay.
Painting, G. T. Green.
Plumbing, McKinley & Northwood.
Plastering, Frank Hunt.
Roofing, Sheet Metal, MacFarlane Douglas, Ltd.
Stone, Granite, James Brodie Sons.
Stone, Limestone, Hooper Bros.
Structural Steel, Dominion Bridge Co.
Tile, A. K. Mills & Son.
Terra Cotta, Atlantic Terra Cotta Co.
Ventilating, McKinley & Northwood.