

**PAGES**

**MISSING**

# The Canadian Architect and Builder

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## ILLUSTRATIONS ON SHEETS.

Parsonage for the Metropolitan (Methodist) Church, Toronto.—Messrs. Sproatt & Rolph, Architects, and S. Q. Curry, Consulting Architect, Toronto.

## ADDITIONAL ILLUSTRATIONS IN ARCHITECTS' EDITION.

The Dominion Bank, Branch on the corner of Bloor and Bathurst Streets, Toronto.—Mr. Eden Smith, Architect, Toronto.

The Federal Life Building, Hamilton.—Messrs. Finley & Spence, Architects, Montreal.

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**Power from Windmills.** A means has been found of utilizing windmills as a means of producing electricity. The cause of failure hitherto, has been in the attempt to obtain electricity directly from the wind-power; the variability of the power has proved to be beyond control. Mr. R. W. Wilson of Westfield, Ind., has contrived to utilize windmills to give a steady application of power without diverting them from their proper function of pumping water. The water is his agent for the application of power. It is pumped up first to a reservoir into which it may flow regularly or irregularly as the wind serves. The exit from the reservoir is under control by automatic valves, so as to apply power from the head of water as it is wanted. The apparatus runs itself. As storage for some days is possible, there is nothing to prevent farm's and workshops in the country being lighted and even run by electricity every day, in still as well as in windy weather; and, in the case of the farm, it may be a by-product, if the water is necessary for irrigation and other farm purposes. It is obvious that the use of wind-power as a remote agent instead of an immediate agent in the production of electrical power is capable of solution in other ways. Mr. Wilson's application of the windmill amounts to more than a new application; it is a new idea. The use of intermittent forces like wind-power and wave-power is understood to be awaiting the development of electrical storage. Mr. Wilson's invention amounts to the

introduction of an intermediate agent capable of storage. And there are other storable agencies in use in mechanics that it may be possible to apply on a large scale to take the place of water when its supply or disposal is not convenient.

### Steam from the Earth

Another invention is promised by persons who are spoken of as "scientists of high position."

This is the use of the earth's internal heat as a source of industrial power. There is but little variation in the degree of heat found at the same depth in different localities. A comparison of underground temperatures has been made and a theoretical increase of one degree for every sixty feet has been determined. The boiling point should therefore be reached at about 12720 feet. The proposition is to bore two holes, about fifty feet apart, to a depth sufficient to reach a temperature of 240°; then lower charges of dynamite to the bottom of each hole and explode them until communication is established by fissures in the rock between the lower ends of the holes. These fissures will form an irregular but capacious caldron. All that remains is to supply water by one hole and apply the steam which will come from the other. The steam will have no divided inclination, with a water pressure of several thousand pounds to the square inch bearing upon it at the bottom of the supply hole.

A determination to put this idea into practice would

probably give an unexpected turn to the affairs of certain desert regions where great heat seems to be attainable at much less than the average distance below the surface. The Yellowstone Valley will break forth, not precisely into singing but into humming—with the hum of industrious machinery.

**Draughtsmen enough  
in San Francisco.**

The Secretary of the San Francisco Architectural Club has written to the Secretary of the Toronto Architectural Eighteen Club saying that a rumour that has gone abroad about the urgent need of architects and draughtsmen in San Francisco is without cause. The letter says that there are at present over 350 certified architects in and about the vicinity of San Francisco and over 1000 draughtsmen. Mayor Schmitz's proclamation sent to the mayors of other cities, asking for mechanics, architects and architectural draughtsmen before food or money, is perhaps the source of the rumour alluded to in this letter. There seems to have been a tendency to a rush of draughtsmen in response. Seventy were willing to go from Boston, but by the action of the Boston Society of Architects this number was reduced to eighteen, selected for general usefulness. If other towns responded proportionally in numbers and without the same judicious influence for selection there is good reason for the San Francisco Architectural Club to issue a warning.

One does not quite see of what avail, for rebuilding San Francisco, as it ought to be rebuilt and as it is likely to be rebuilt, an army of draughtsmen will be, unless accompanied by architects. It is a splendid chance of course for the draughtsmen to enter the train at Chicago as draughtsmen and come out architects at San Francisco. But it is only in competitions that we expect better work to come from unknown young men than from recognized leaders of the profession. Ordinarily in art, which is longer than life, age has an advantage; and in the architectural army at San Francisco there will have to be a fair proportion of colonels.

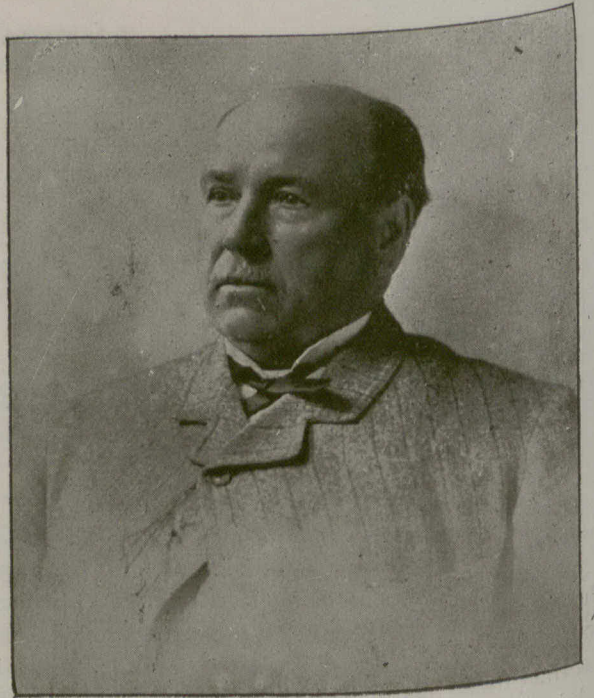
Architects do not float about so easily as draughtsmen, but, on the other hand, it is not necessary for them to do so. The work seeks the architect nowadays and a New York architect does not need to leave New York in order to carry on building in San Francisco. No doubt, when definite aim has taken the place of general intention at San Francisco, the architects of the east will be applied to for plans of the more important buildings and they will open branch offices in San Francisco in charge of representatives who will participate in and help to officer the general work of rebuilding.

**MR. CHARLES P. BAILLAIRGE.**

By the death of Mr. Charles P. Baillairgé, at his residence in Quebec, the profession of architecture has lost a very distinguished member, whose recognition was not confined to his own country. Mr. Baillairgé had the energetic and inventive mind that gives eminence in any walk of life, but his mathematical and scientific attainments made him a constructive architect *par excellence*. He had the proper combination of original thought and technical skill, and worked with freedom and facility.

At the time of his death Mr. Baillairgé was in his eightieth year. He was born in Quebec on Sep. 27, 1826. He was educated at the Quebec Seminary. He was admitted as a P.L.S., 1847, and at once entered upon a successful career. Among the best known of his works as an architect are the Laval University, the asylums and churches of the Sisters of Charity and Good Shepherd, the Music Hall, the new jail, Dufferin Terrace, the aqueduct bridge over the St. Charles, and the "Monument des Braves de 1760," all in the city of Quebec. In 1863-65 he was associated with Messrs. Fuller and Page as joint architect and engineer in the construction of the Parliament Buildings at Ottawa. He was for many years hydrographical surveyor and engineer to the Quebec harbour commission and was at one time a member of the Quebec City Council. In 1866 he was appointed City Engineer of Quebec and in that position planned many important works and buildings.

In the midst of a busy professional life, during which his services were also frequently required in ar-



THE LATE MR. CHARLES P. BAILLAIRGE.

bitations by both the local and federal governments by the courts, and by private concerns, Mr. Baillairgé found time to write and deliver numerous lectures on such subjects as "Steam and the Steam Engine," "Pneumatics," "Mechanics," "Optics," "Astronomy, &c." While occupied in the construction of the Parliament Buildings at Ottawa, he completed a treatise in French on "Plane and Spherical Geometry and Trigonometry" with mathematical tables. In 1874 he published in French and English his "Key to the Stereometrical Tableau." This system was taught in the elementary schools in Russia and was subsequently applied to all the polytechnic schools of the Russian Empire. He was called to France in 1874 and received the gold medal of the "Société de Vulgarisation de l'Enseignement en France," also the medal called "Phillippe de Girard," given for the most useful invention or discovery of the year. Subsequent to this distinction Mr. Baillairgé received 13 medals of honour and 17 diplomas from France, Italy, Russia, England, Brazil, Japan, Belgium, Canada and the United States.

Mr. Baillairgé was appointed, by the Marquis of Lorne, a member of the Royal Academy of Arts and a fellow of the Royal Society of Canada. He was an hon. M. A. of Laval University; a Chevalier of the order of St. Sauveur of Italy, and an hon. member of various learned societies throughout the world. He was one of the original members of the Society of Canadian Civil Engineers, and was an early president of the Province of Quebec Association of Architects. He was twice married; in 1845 to the step-daughter of the late Hon. G. F. Duval, Chief Justice of Lower Canada; and in 1879 to the daughter of Capt. Benjamin Wilson R. N. His son has succeeded him as city engineer of Quebec.

## EARTHQUAKES AND EARTHQUAKE-PROOF BUILDINGS.

BY WILLIAM F. SCOTT.

A match will start a flame that will light a cigar. This same flame will light a city into an unquenchable blaze if the conditions of fuel and air supply are favorable and the provisions for fire protection unfavorable.

In the recent San Francisco catastrophe we have a case where the fuel was the wooden buildings and the air supply that ever present draught through the Golden Gate. The earthquake supplied the match and incidentally destroyed the water supply for fire protection, which under the most favorable conditions was not of the best on account of the steep hills throughout the city. This great western port of the United States was a wooden city, the exceptions where wood did not prevail consisting of a comparatively small percentage of buildings in the business section. The "Native Son" always gave as the reason for this fact that buildings of wood were safe against earthquake shocks and because of the non combustibility of the California redwood were insured against a great conflagration.

That their faith in wood has been "shaken" and will be transferred to steel or steel concrete is the lesson written in the ashes of this catastrophe. The fire swept over an area of about seven square miles and of the buildings in this burned district the modern steel frame structure stood out in grand contrast to all other types. They even stood the test better than might be expected because few of them were built in any way different from the conventional Chicago-New York Steel Skeleton which was designed to resist static loads and wind pressure only, and in which such strains as would be caused by an earthquake tremor were not considered. The cumulative resistance in the joints of these steel frames was undoubtedly a great factor in helping them to withstand the recent earthquake shocks, but to make this function positive the joints should be specially designed for the forces they must resist. Certainly reinforcement of this sort would add greatly to the power of the building to retain its enclosing materials from displacement.

That the steel frames stood the test is more than can be said of their covering or rather of the methods of binding the enclosing materials to their skeleton. The manner in which the brickwork between the steel framing of the tower of the magnificent City Hall fell in ruins about it is a good illustration of a vital point in the design of the conventional skeleton construction when applied to buildings that are to resist the strains

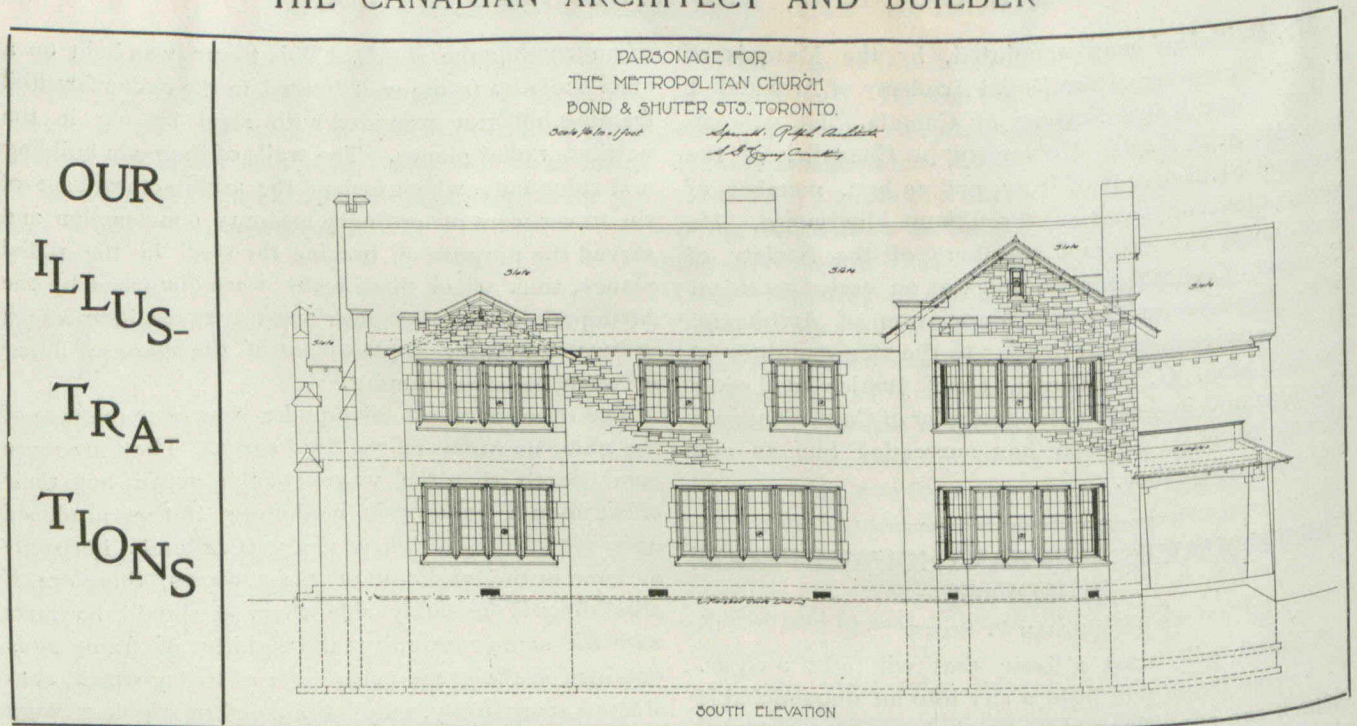
of an earthquake shock. This tower was built on a steel skeleton frame well braced in the circumferential framing but not provided with steel bracing in the vertical radial planes. The walls of the main building and colonnade which formed the architectural base of the tower were of ordinary masonry construction and served the purpose of bracing the steel in the radial planes, thus when these walls were disturbed by the earthquake shock the tower was free to oscillate, which in turn caused the displacement of the spandrel filling between the steel framing.

The tremors of an earthquake pass over the face of the globe as waves in the fluid earth. They are more complicated than the waves of the ocean but their effect upon a building is analogous to that produced upon a boat at sea. There is a vertical and a horizontal force in the motions of these waves, therefore, if a building is to safely ride them it should be built with the same continuity and rigidity of frame as is obtained in the great ocean liner of to day which, considered structurally, may be likened to a pair of huge curved plate girders braced transversely with trusses and gusset portals. The ideal earthquake-proof building, then, should be, figuratively speaking, an ocean liner on end with the stern supported on a sufficient base of concrete and with the windows built in the same manner as are the port holes of the ship. But the architect is not permitted to make such radical departures from the conventional types of buildings. He must have square windows and pierce one-third his walls upon which he must write the alphabet of historic architecture. The ideal, therefore, is impossible, but a compromise between the ideal and the common type of skeleton construction is practicable.

It is beyond the scope of a short article to enter into details as to just what such a compromise would be; these details would vary with the individuality of every engineer who attacked the problem. However, I would premise three certain and fundamental requirements that must be considered in these details:

- (1) There must be a rigid connection between the columns and girders of the skeleton frame but flexibility must not be sacrificed to rigidity.
- (2) There must be continuity in the foundation for the skeleton.—The writer is of the opinion that the principle of construction of the "lighter" should be kept in mind for these foundations.
- (3) There must be a comprehensive method of binding the enclosing masonry with a view to making it an integral part of the skeleton.

Steel-concrete and steel were mentioned above as competitors for place in the faith of future earthquake-proof builders. The developments in this method of construction are comparatively recent chronologically speaking, but there is no doubt that reinforced concrete will be an important factor in the development of these buildings. earthquake-proof building we have said must have continuity and rigidity of frame and must withstand severe shocks. The driving of reinforced concrete piles 35 or 40 feet in length without any shattering proves that the resistance of this material to shocks is very great; and as for the continuity and rigidity of this form of construction there is no more ideal method of obtaining both. It is just a question of placing sufficient reinforcing material where it will perform these functions.



PARSONAGE FOR THE METROPOLITAN CHURCH, TORONTO.  
MESSRS. SPROATT AND ROLPH, ARCHITECTS, AND  
S. G. CURRY CONSULTING ARCHITECT,  
TORONTO.

The Metropolitan Methodist Church occupies the centre of an entire block of land; and, though a very large building, there is room in any one of the corners of the lot for a large house like this parsonage. As the Queen street cars run along the south side of the grounds and the Church street cars run on the east, the only quiet corner is the northwest. It is fortunate that this was the available corner for it allows every room of the parsonage to take its proper position with reference to the points of the compass and to have at the same time the most suitable disposition upon the grounds. The entrance, library and waiting room are in touch with Bond St. on the west; the kitchen entrance and yard with Shuter St. on the north; the living room and dining room are south and east and on the interior of the lot. The library, living room, and dining room get a clear look out to the south for the whole depth of the block; for the east line of the house is exactly on the west line—the porch line—of the church.

With this general account of the disposition of the building on the ground we may leave our readers to study the plan for themselves.

As the donor has enabled the work to be carried out thoroughly in stone, including the yard wall, the work will have the substantial appearance that a house so far down town should have.

Our cuts on the illustration sheets are reduced as nearly as possible to a scale of 8 feet to an inch, and the south elevation shown above is half that scale—16 feet to an inch.

DOMINION BANK, BRANCH ON CORNER OF BATHURST AND BLOOR STREETS, TORONTO. MR. EDEN SMITH, ARCHITECT, TORONTO.

We have procured photographs of this bank building, (which does not seem to have received as much notice as it deserves), in order to illustrate a point of view, which seems to us a good one, for the treatment of branch banks. The bank occupies the corner of the ground floor. There is a residential flat above, with a small shop—a branch bakery store—under the oriel of the flat. These parts are suitably differentiated in the design, as may be seen, and the bank seems to have precisely the amount and style of distinction that it should have to suit its locality. The design, based on the present development of the Renaissance, (as they call it now), in England is distinctly of our

own generation and nationality. Its flexibility in the hands of an original designer is well shown in this bank in which dignity and domesticity are harmonized without apparent effort.

THE FEDERAL LIFE ASSURANCE BUILDING; <sup>James & Main St</sup> HAMILTON, ONT.  
MESSRS. FINLEY & SPENCE, ARCHITECTS; MONTREAL.

This is a steel frame building with terra cotta protection. The two base stories will be faced solidly with granite; the cornice storey will be terra cotta.

The entrance on Main street admits to a large vestibule from which open the Company's office on the right hand, and a banking office on the left. The general office of the Company, for the public and for clerks, is on the eighth or top storey. This office will be lighted both by windows and by a domed ceiling 25 feet high. On this floor are also the offices of the superintendent of agents, the chief accountant and the actuary. The seventh storey is occupied by the manager, the secretary, the solicitor and the medical director and examiners; and here will be a large board room handsomely furnished and panelled in mahogany.

The stairs and elevators serving these offices are reached either from the vestibule, which opens upon a hallway 13 feet wide, or, more directly, by the James street entrance, which is opposite to the elevators.

The five intermediate floors will be divided into offices for rent.

On the ground floor the ceiling will be 18 feet high; in the Company's offices at the top the ceilings will be 14 feet high; and they will be 11 feet high in the intermediate storeys.

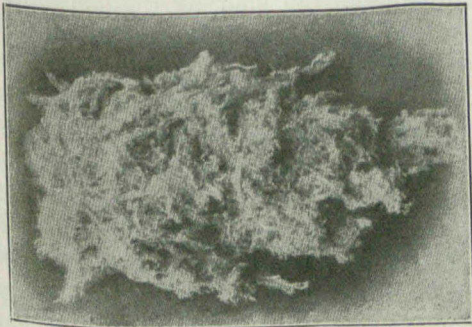
Externally the building is distinctly expressive of the class of commercial building to which it belongs. A certain freedom is desirable in the handling of buildings which are not set up for monuments so much as for advertisements. Here the severely classic, if one may say so, is not in perfect taste. It has the crudeness of imperfect culture. It is a case for free enrichment. And if the enrichment is done with taste, as it seems to be in the example before us, it is the proper way to escape the monotony of book-renaissance and give our buildings both the touch of the individual designer and the touch of our own generation. The building before us has the merit of distinctly belonging to our own generation.

Paris spends \$100,000 a year to keep her trees in order and to plant new ones. Every street of a certain width is entitled to a row of trees on either side; while every street of a certain width has a double row.

**MINING ASBESTOS, OR MINERAL WOOL.\***

BY AUBREY FULLERTON.

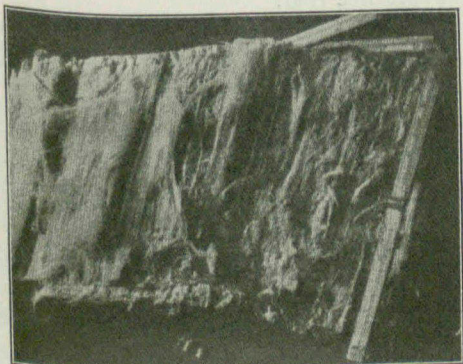
Known to some extent in ancient Greece and Egypt, the existence and uses of asbestos seem afterward to have been forgotten until quite recent years. The revival dates from about the beginning of the last century, when mines were opened in Northern Italy.



FIBERIZED ASBESTOS READY FOR THE MARKET.

Since 1866 the Italian mines have been the chief source of supply in Europe, and until twenty-five years ago they were the only mines in the world. At the present time, however, asbestos is being mined in varying quantities in Russia, Australia, and Africa, and most largely of all in America. It occurs in some nine or ten of the States, of which Georgia produces the largest quantity and Vermont the highest grades. The veins thus far discovered in the latter state are closely similar in character to those north of the international boundary, where, in the Province of Quebec, is the world's chief storehouse of asbestos. Of the grades suitable for the highest class of manufacture—which, in other words, means the grades suitable for spinning and weaving—Quebec has practically a world monopoly.

What makes one variety of asbestos of greater commercial value than another, and one country's deposits better than those of some other country, is the fiber of the stone; and upon this essential difference is



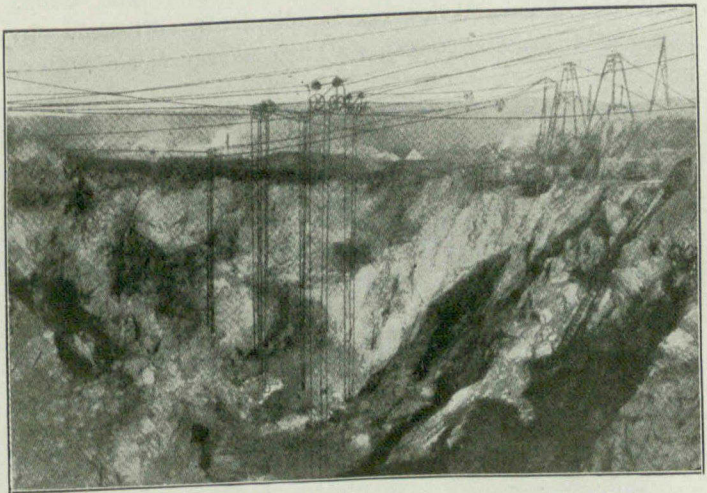
ASBESTOS IN RAW STATE, AS TAKEN FROM MINE.

based the divisions of the natural stone into two quite distinct classes. It is amphibole or actinolite when its crystals occur in long, slender prisms or in radiating masses, whose fibers are harsh and brittle, and whose composition is about 60 per cent. silica and 25 per cent. magnesia; it is chrysolite or serpentine asbestos when its fibers are long, slender, flexible, and easily separable into fine, silky threads that are highly elas-

tic and capable of being spun. Quebec's supply, which is the source of the bulk of the asbestos used in the United States, is of this kind.

Chrysolite, the asbestos of the finer commerce, is in chemical terms a hydrous silicate of magnesia. The Canadian fiber, which is made especially soft and silky by its large percentage of water—over thirteen per cent.—is practically the same as the best Italian fiber; but Italy's supply of chrysolite is small, and so far as known this form of asbestos exists in paying quantities only in Canada.

Geologically it is a fibrous form of serpentine, occurring in strata of crystalline limestone. The serpentine—or verd antique marble, as it is popularly called—is a of greenish color; and the asbestos itself, which is found in small veins or layers, is light yellow or light green, and highly transparent. The veins run in an average thickness of from one-quarter to one-half inch, but sometimes of three, four and even six inches. Since the fiber runs crosswise, the thickness of the vein



QUARRY OF KING BROTHERS' ASBESTOS MINE, THETFORD, QUE.

means also the length of the fiber; and the longer the fiber, the better and more workable is the asbestos.

How this remarkable substance ever came to exist, is a question whose answer dates back to Creation times. Briefly the theory is this: The original rock, thrown up by igneous action, developed cracks and seams as it cooled; and as these rocks changed under the action of water and vapors to serpentine, the seams gradually filled with serpentine deposits from the rock walls in a fibrous structure. The asbestos fibres are, as nearly as possible, crystals of serpentine; hence their inconsumability.

The ore is mined mostly in open quarries. Overlying soil, to a thickness of sometimes twenty or thirty feet, but quite often forming only a thin layer on top, has first to be removed; and as soon as the asbestos veins are thus laid bare, the actual quarrying operations may begin. The rock is cut in a series of terraces, reaching a total depth of sometimes 150 or 200 feet. Underground work has not proved successful, the open quarry having been found both more economical and more effective, despite the disadvantages of exposure to the weather. Drilling and blasting are employed much the same as in ordinary stone quarrying.

When the rock is thus broken up it is rough sorted

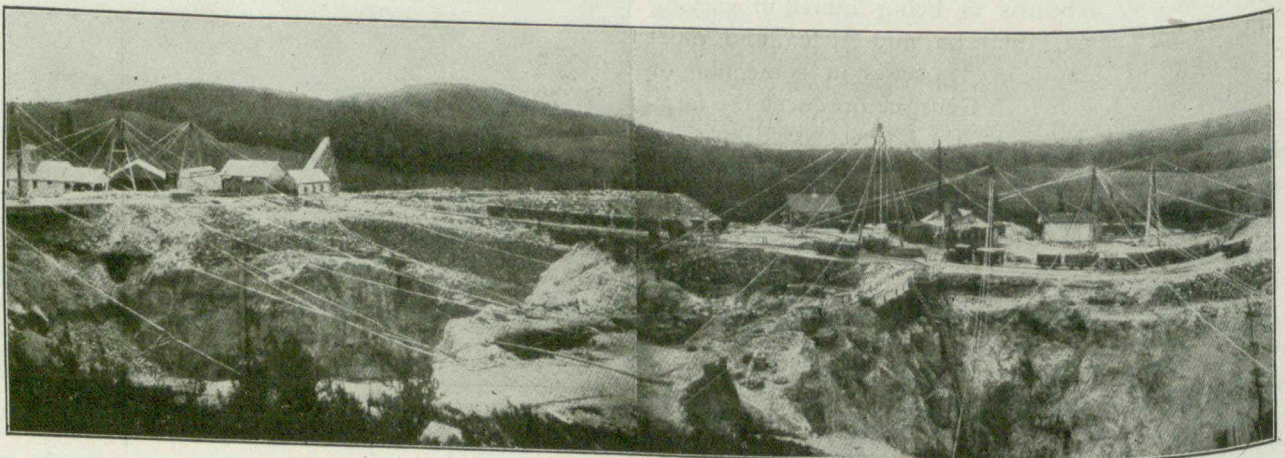
\*Abstracted from the Technical World Magazine.

at the quarry. Two or more grades are selected according to the length of the fiber and are then sent on to the "cobbing sheds", where the further process of dressing goes on. This process is merely the separation of the asbestos fibers from the dead rock, and is done in some cases by hand but to an increasing extent by machine. Hand-cobbing is the very simple method of breaking the stone by small sledge hammers, throwing the fiber into one box and the waste into another. This separation is ordinarily not difficult, since the fiber lies in layers more or less loosely clinging to the rock, and can frequently be picked off with the fingers. The crude fiber, thus separated as cleanly as possible from the waste rock, and looking very much like mineralized wool, is packed in 100-pound bags, in which form it goes to the market and the manufacturer.

Hand dressing is not, however, an absolutely thorough method. The waste material from the cobbing tables, and the fine pickings from the quarries, have still some fiber in them; and the utilization of this frequently represents the largest profits of the mine. All these finer pickings are mechanically dressed. In case the asbestos contains a large percentage of water,

the uses to which it is put are almost unlimited, and depend entirely upon the length and quality of the fiber. The very fine fibers—those produced by the mechanical fiberizers from the tailings and waste heaps—are manufactured into various pulp and powder forms. As a fine powder, they are made up into fireproof paints, which are widely used for rough woodwork and possess quite remarkable fire-resisting qualities. As sold to the consumer, these paints are ready for use with the addition of water. Very fine fiber, of the best quality and thoroughly cleaned, is also of great value as a filter medium, the more so because it is proof against the action of acids and alkalies.

Fine-ground asbestos has often been experimented with as a stock for paper. As far back as 1866, some ingenious Italians attempted to produce a paper which they hoped would be adopted by the Government for securities and bank notes, but their experiments were not successful. Later and more satisfactory experiments were made in Paris and elsewhere, and a fair grade of asbestos paper has been produced. Its chief drawback is that it will not take a good sizing, remaining much like blotting paper; and while it is



PANORAMIC VIEW OF ASBESTOS MINES OF THE H. W. JOHNS-MANVILLE COMPANY AT DANVILLE, QUEBEC.

the moisture is first dried out, by exposure to the air, by steam pipes, or by rotary driers; and the rock is then passed on to the crushers, where it is broken by successively finer-set rolls. Cylindrical fiberizers and the cyclone machine reduce it still further. The latter is the most effective apparatus yet devised for asbestos separation. It consists of two beaters, of the screw propeller type, driven within a cast iron chamber at a violent speed, reducing the particles of stone almost to a powder. This is then passed over a shaking screen to remove the sand; and in some mills strong electric magnets are used to take up the particles of iron.

The natural qualities of the asbestos ore vary considerably in different localities, and methods of treatment vary accordingly. The general principles, however, are essentially the same. Of the total rock mined in the Canadian areas, from 30 to 60 per cent. is suitable for milling, the percentage of waste having been greatly reduced by the introduction of mechanical dressing; and of the rock sent to the mill from 6 to 10 per cent. is fiber. Each ton of asbestos mined and milled costs about \$17.50; and the market price runs from \$25 for the poorest grades, suitable for paper and mill-board, to \$200 for the best commercial grades.

When the dressed asbestos finally reaches the

itself quite fireproof, it does not retain the writing under a severe fire test.

Asbestos millboard, resembling in character and method of manufacture the ordinary wood-pulp cardboard, is already a commercial success. The fiber mixed with water is thoroughly beaten in large tanks; then ingredients that will bind the fiber together are added, and the pulp in this condition is passed over a wire cylinder, through which the water is drained off. The residue of pulp thus gathering on the wire forms the board, which is then pressed, cut, and dried like ordinary paper board. This asbestos millboard is used for box material, such as for fireproof deed boxes, etc., and more particularly as a joint packing for steam pipes.

Another of the paper forms in which the poorer grades of asbestos fiber are very widely used, is that of roofing material. Some varieties of this are made with a canvas center and asbestos felt or paper on either side, giving a fabric that is not only fireproof but of great durability. A later invention comes from Austria, where the very fine fiber is ground with a mixture of serpentine, then with asphalt and other ingredients. This process is now being introduced in the United States. Asbestos wall plaster is a similar production, also composed of fine fiber mixed with serpen-

ine. It is applicable wherever plastering of any kind is required; and as it supplies its own fibers and rock dust, neither hair nor sand is necessary. It is being used in a large number of the new fire-proof buildings. Indeed, an asbestos building, from cellar to roof, may soon be possible, for recent experiments in fireproof bricks, composed of asbestos lime and sand, have been very successful, the bricks so resisting a 2,000-degree temperature as to be no more than slightly warmed. Floor tilings are a recent novelty now being made in Georgia.

But perhaps the form in which asbestos is best known to the American building and engineering trades is in the several varieties of insulating material. As a covering for steam pipes and boilers, it is in use in nearly every modern office building in the country. In this capacity it serves the threefold purpose of saving fuel, increasing power, and reducing temperature. Ordinary uncovered two-inch pipes, with steam at 75 pounds, will lose one horse-power for every 132 feet of their length; and four-inch pipe, a like loss for every 75 feet. Ten square feet of bare pipe will waste in one year two tons of coal. Asbestos pipe-coverings pre-



MOULDING COVERING FOR STEAM PIPE.

vent this loss; and that is why the specifications of the best modern buildings call for every inch of their pipes to be covered. A fifteen-story building now going up in Toronto will have eight miles of asbestos pipe-covering; the United States battleship Oregon has seven and a-half miles on its boilers and steam pipes; and other buildings and ships of all kinds and types have corresponding quantities. In electrical installations, asbestos preparations are found similarly useful for insulating wires and for preventing overheating in electrical machinery.

This insulation of steam pipes is effected by applying a paste of asbestos fiber and magnesia to the surface of the pipe and binding it with canvas or oilcloth, or by fitting the pipes with sectional coverings, ready-made in various sizes, and bound with iron or brass bands. The latter covering is constructed of layers of plain and corrugated asbestos felt, whose numerous air-cells effectually prevent radiation.

With the better grades of asbestos fiber, still more remarkable results are obtainable. The fiber that we use in our gas grates, furnishing a very pleasant and powerful heat as the burning gas rises through it, is a fair specimen of the better qualities after being milled, but still unmanufactured. The highest excellence of the fiber consists in its fitness for spinning. For this,

only the longest fibers are suitable, and they are best when softest and most elastic.

An important use of asbestos cloth is in the manufacture of theatre curtains. The value of such curtain has been repeatedly proven; and after the Iroquois Theatre disaster in Chicago, the demand for them and similar fireproof material was for a time especially active. Asbestos cloth is also made up into firemen's uniforms, consisting of boots, pants, aprons, gloves, mask, and head-gear. One or two men in each company, thus clad, can effectively do work that would otherwise be impossible. Iron workers and glass moulders wear aprons of asbestos cloth as a protection from the severe heat in which they work.

In America the increasing use of asbestos packing and pipe-coverings, particularly for office buildings and factories, furnishes a demand for the shorter fiber; in Europe, where building conditions are somewhat different, there is a much smaller market for these preparations, and a correspondingly greater demand for the spun and woven wares. In the manufacture of the latter, particularly in the English and French mil's, the fiber from the mines of Italy and Russia is mixed with Canadian fiber, the combined product having for some purposes a superiority over either alone. Much the largest part of the Canadian output, however, is used in the United States and Canada. The mines in the Quebec district are operated by some ten companies, in which United States capital is largely interested. The ore is milled in Canada and shipped in fiberized form to the manufactories in New York, Pennsylvania, and elsewhere, where it is made up into the finished commercial wares. One of the earliest companies to operate in the Canadian areas, and the first to introduce mechanical dressing, was a company of Scotch capitalists; and a considerable portion of the output still goes to Scotland and England. German capital is also interested. The annual production of the Quebec mines alone is about 50,000 tons.

While Quebec has practically a world monopoly of the best grades of asbestos, and in presumably inexhaustible supply, the neighboring Province of Ontario has considerable deposits of the kindred mineral, actinolite, or hornblende asbestos. Actinolite is very similar to the chrysolite asbestos in its chemical characteristics, and is equally effective in heat-resisting, but it is not so good a non-conductor and lacks in strength of fiber. It is used to some extent in roofing material and plaster. The essential difference between the two varieties is that, while chrysolite is a hydrous silicate of magnesia, the hornblende asbestos is an anhydrous silicate of lime and magnesia, and therefore without the softness and oily feel which characterize the better grade.

### ROYAL INSTITUTE OF BRITISH ARCHITECTS.

The headquarters for Canada of the Royal Institute of British Architects of London, England, has been moved from Montreal to Toronto, and Mr. F. S. Baker, F. R. I. B. A., Mail building, has been appointed Honorary Secretary for Canada.

An examination for admission to the Associateship of the Institute will be held in Toronto from the 16th to 23rd of November, 1906, and candidates who are British subjects and not less than 25 years of age will be eligible.



### THE TORONTO BUILDERS' EXCHANGE.

The Toronto Builders' Exchange may be said to have originated from the old General Builders' Society, which was established in 1867; at a later date was formed the Federated Builders' Association. The Federated Association was merged into the Builders' Exchange in 1892, when the Exchange became incorporated.

The first President was Mr. Wm. J. Hill, who subsequently represented the Liberal interest in West York in the Ontario Legislature.

The Exchange at first occupied offices at Victoria street near Adelaide street; later, more suitable premises were taken on Victoria street near King street. The present premises are entirely inadequate for the largely increased membership, and the Board of Directors are negotiating for premises which will give ample accommodation for all branches of the building trade. The new premises will comprise offices for the various sections, together with Board room, Estimating rooms, Committee room and a large general Assembly room.

The management of the Exchange is vested in a Board of Directors which meets monthly. The following committees deal with such matters as come within their province: Finance Committee, Legislation Committee, Labor Committee.

Should any differences arise between members, the same may be referred to an Arbitration Committee for settlement.

The usefulness of the Exchange has been manifested in many instances. The advisability of adopting a uniform contract form has been for some time very apparent, some of the contracts which builders have been called upon to sign having been notoriously unfair.

By mutual agreement between the Architects' Association and the Exchange, the "Revised Contract" was amended in 1904 and this form will be used in all future contracts.

The adjustment of labor difficulties in connection with the building trade has also been a feature of the Exchange work. It has always been recognized that a policy of fairness and conciliation in treating with their employees is the best, and the Exchange has endeavored to carry out this principle, although when the demands of organized labor were unreasonable, the Exchange has always declined to accede to such demands.

The usefulness of the Exchange in every-day affairs becomes daily more apparent.

Apart from other considerations, the daily association of men engaged in similar lines of industry must, naturally, result in better feeling, and broader and more liberal views in business matters. In proportion to the interest taken in Exchange work by the members will its usefulness be extended.

The large amounts of money expended every year in building operations, and so large a percentage of the population being employed thereon, the Builders' Exchange must necessarily be an important factor in the future of Toronto.

The Act of Incorporation states that the purpose of the Exchange shall be to "inculcate just and equitable principles, and to promote good feeling and harmony among those engaged in the building trade, to the end that membership in this Society shall be an assurance to the public of skill, honorable reputation and probity."

These principles, if carried out in practice, must

prove beneficial to all the trade, and fully justify the existence of the Exchange.

Mr. George Duthie, president, was born in Toronto, where he has resided for the greater part of his life. In 1888, on the retirement of his father, he became head of the firm of G. Duthie & Sons, roofers, etc., and for the last seven years he has been manager of the Roofers' Supply Company. Many important contracts in Ontario, Quebec and the Maritime Provinces have been performed by the firm with which Mr. Duthie is connected. He takes an active interest in the welfare of the Builders' Exchange, and co-operates heartily with any schemes whereby its members may be benefitted.

Mr. Thomas Self, of the contracting firm of Self Brothers, is first vice-president. Mr. Self was born in Ireland. He located in Toronto when he was twenty years of age and has resided there ever since. In 1888 he began business on his own account, and has been engaged in many important building contracts, among which were the Manufacturers' Building at the Exhibition Grounds and Massey Hall. Mr. Self has been a member of the Builders' Exchange for fifteen years.

Mr. C. W. Batt, of Toronto Junction, is second vice-president. He is a native of Hampshire, England, and came to this country in 1871. He spent a number of years in Bothwell, Ontario, where he was engaged in the building and lumbering business. In 1888 he moved to Toronto Junction, where he has since resided and has become well known as a contractor.

Mr. J. L. Phillips, secretary, has been connected with the Exchange for some fourteen years, and has held the office of secretary nearly ever since the organization received the charter of incorporation.

Mr. James Crang, treasurer, in 1878, in partnership with Mr. John Harris, took over the mason contracting business of Mr. Wm. Booth, for whom Mr. Crang had previously been foreman. In 1883 this partnership was dissolved and Mr. Crang has since carried on the business himself. The Home for Incurables and St. Lawrence Market are some Toronto buildings with the erection of which he was connected.

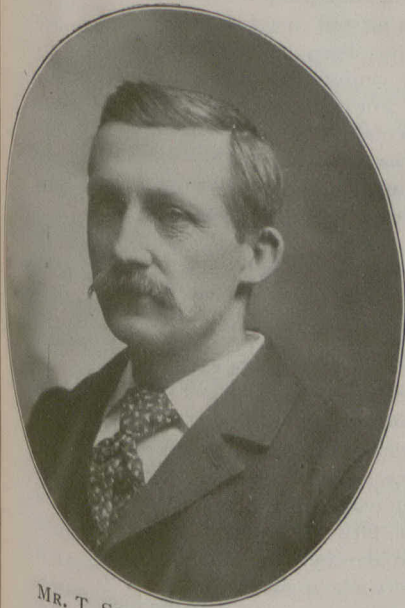
Mr. John M. Gander, president of the Plasterers' section, came from London, England, to Toronto, in 1870, where he has since resided, except for a few years spent in his native land. Mr. Gander has performed some important plastering contracts, a large percentage of the bank buildings in Toronto having been done by him.

Mr. Frederick Holmes, president of the Stone Cutters' section, is a native of Norwich, England. He engaged extensively in contracting in Lancashire, and was at one time vice-president of the Manchester Contractors' Association. In 1882 Mr. Holmes came to Canada and has ever since been connected with the building trade. The Board of Trade Building, Foresters' Temple and Alexandra Palace are some Toronto buildings with whose construction he has been identified.

Mr. Arthur Dennis, of 126 Walmer road, Toronto, is president of the Carpenters' section.

Mr. Frank Saunders, head of the contracting firm of F. Saunders & Son, is president of the Masons' section. Mr. Saunders is a native of England, his home having been near Cambridge. He came to Canada about thirty-five years ago, and for the last twenty-four years has resided in Toronto, where he has been engaged in the masonry and contracting business.

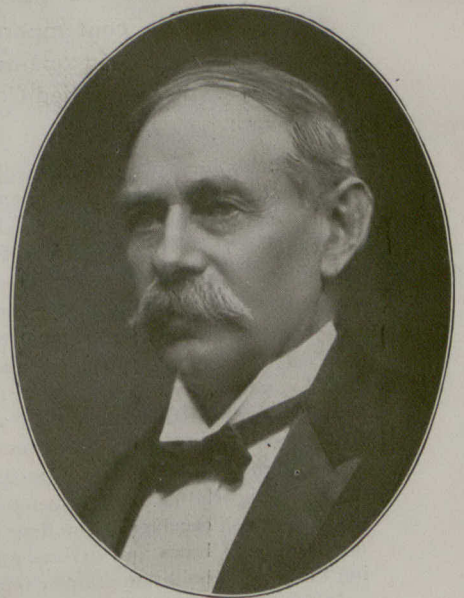
Mr. William Pears, president of the Brick Manufacturers' section, was born in Toronto. For the past twenty-five years he has been engaged in the brick business at Toronto Junction, Ontario; during the last four he has had control of the Ontario Paving Brick Company. Mr. Pears held the position of president of the Exchange for a period of two years.



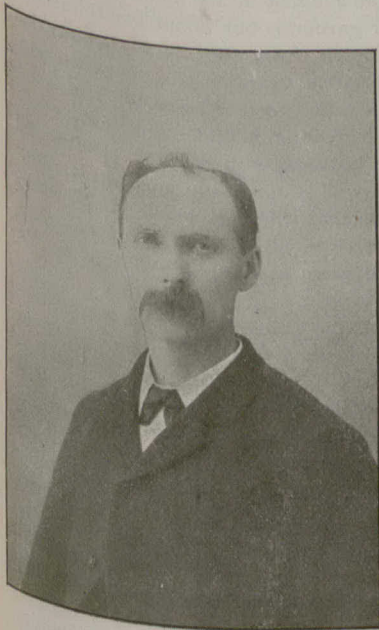
MR. T. SELF, 1st Vice-President.



MR. C. W. BATT, 2nd Vice-President.



MR. JAS. CRANG, Treasurer.



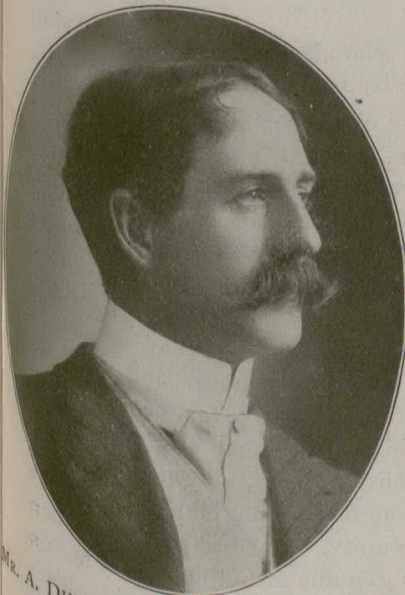
MR. J. L. PHILLIPS, Secretary.



MR. GEORGE DUTHIE, President.



MR. F. HOLMES, Pres. Stone Cutters' Section.



MR. A. DINNIS, Pres. Carpenters' Section.



MR. F. SAUNDERS, Pres. Masons' Section.



MR. J. M. GANDER, Pres. Plasterers' Section.

## THE ART OF MAKE BELIEVE.

Our interesting contemporary the *Architects' and Builders' Journal* has in one number the following pair of extracts. The first called COUNTRY LIFE IN A FLAT is as follows :

A bachelor in upper New York leased an entire floor in an apartment house before it was completed with the understanding that he was to have it finished and furnish it according to his own fancy. He is fond of rural life, but his business does not permit him to live out of town. In order to have his notions he has had his quarters arranged this way :

His reception room is of unfinished timbers resembling hewed logs. The ceiling shows the rafters. The electric bulbs are inclosed in perforated tin resembling the old-fashioned tin lantern.

Beyond is the tepee, utilized as a smoking room. It is separated from the sleeping apartment by cedar poles in the rough, constructed to resemble a rail fence. The tepee is arranged like a tent. A big iron kettle is suspended from a crane in the centre. This is the ash receiver. The floor is covered with animal rugs. A collection of bows and arrows and tomahawks, horns, scalping knives and imitation scalps complete the scheme.

In the room next fowling pieces, guns, rifles, pikes, fish nets and spurs are in evidence. A big, rough board holds flasks of various sizes, glasses, tumblers, and cups. The flasks contain any brand which the thirsty visitor may desire. A coon skin is tacked over the bar and benches take the place of chairs.

A fence divides the "trough" from the next room, which is arranged to represent the back yard of a country home with a dog kennel near the gate and a well box, with a sweep. On one corner stands the bucket, and a dipper and an old gourd hang on the box. The picture is realistic, but the windlass is never turned.

Back of this is the end of a barn. The door is painted red. In an open square near by is the painted head of a horse, looking out as naturally as if it was about to whinny for its oats.

A loose plank walk leads from the barn to the bathroom which is concealed from view by what looks like a high board fence. Its equipments are about the only modern equipments on the entire floor.

The gentleman who occupies this flat we can hardly acquit of the charge of being a man of three letters. One has a certain amount of sympathy with his hunger after rural simplicity, but one has a strong suspicion that it is the literature of rural simplicity that has attracted him rather than the reality. If he had had any actual experience of a tepee, he would hesitate about qualifying the comfort of a New York flat with any suggestion of its squalor. Imitation scalps are not likely to be a favourite form of decoration for those who have had any association with scalping knives in action. Nor are the more peaceful scenes, where benches are used instead of chairs, and loose board walks represent luxury, dependent upon these severities for their charm.

In the literature of the wild and tame life away from the haunts of men the articles in this gentleman's rooms have a prominence which gives them, when translated to New York, the effect of symbols. The whole furnishing of the apartment is symbolical, and the imagination of the proprietor—a derivative and parasitic imagination—lights up, when he sees them, with second hand dreams of a life in the wild or rural districts that are probably as unlike the reality as the furnishing of his flat is unlike the natural and appropriate manner of furnishing a New York apartment.

Now for the second extract entitled ITALIAN GARDEN REPLACES A STONE PILE.

There is probably no more beautiful Italian garden outside of Italy than that on the D. C. Blair estate at Bar Harbor. There are larger gardens in the same architectural style, doubtless others that cost more, but the Blair garden has a charm peculiarly its own. A rough pile of stone and sand was changed

as if by the magic touch of a fairy wand to a garden of beautiful glowing flowers and charming and costly statuary.

This marvelous change has been accomplished not through the work of any twentieth century Cagliostro, but simply by opening the cash drawer. For years the estate of the late Major Wheeler, situated in one of the most sightly portions of Bar Harbor, lacked a purchaser. For neighbors the villa has Mossley Hall, long the most noted of Bar Harbor summer homes; Stanwood, the historic villa of the late James G. Blaine, Maine's most famous son, and Ban-y-Bryn, the beautiful Barney cottage, occupied this season by Jacob Schiff, the New York banker. But until Mr. Blair came on the scene there was none who cared to undertake the task of transforming the rocky cliff and sand bank.

Mr. Blair came, saw and conquered. He explained his wishes and a quarter million, judiciously expended, did the rest. Dynamite used in large quantities reduced the rocky cliff. Trees brought from the neighboring forests gave foliage to the desert. One large spruce that now flaunts proudly beside the Italian gardens was formerly located at Hull's Cove, a couple of miles away. This spruce is some fifty feet high and to move it was a delicate task. It made the journey, however, its transportation costing alone \$1,000. There are a number of these trees; in fact, some two hundred have been moved on to the Blair estate, and the expense of this feature has been in the neighborhood of \$25,000.

The garden measures some 200 feet by 100 and is rectangular in shape, although the inner garden is but about two-thirds the size. The main entrance opens from the chief driveway by means of a flight of steps of native granite. On the east side of the garden is a low wall, while the western boundary is enclosed by a cedar hedge some fifteen feet in height. On this western side are eight piers of brick covered with concrete panel work. In the middle of the western wall is one of the most artistic features of the garden, a marble seat which is upheld by a superbly carved griffin, a very valuable antique which was imported from the land of Sicily. On the piers at each side of the marble bench are elaborate marble urns.

On the south and east sides the garden overlooks a rose garden, which is enclosed by high stone walls on two sides and an arbor vitæ hedge on the others. On the north side of the garden is the main pergola, connected with the tea house. The framework of the pergola consists of some ten stucco pillars, with a framework of hard pine and a floor of tiling of varied design. Heavy vines of Virginia creeper cover the pillars. In the pergola are two broad marble seats. Connected with the pergola on the east is the tea house, which is located in the north-east corner of the garden. This is very charmingly decorated with Egyptian tapestry of varied design and antique coats of arms. The walls of the tea house are of stucco.

The central feature of the garden is, of course, a fountain, and that in Mr. Blair's garden would pay a prince's ransom. It is a Japanese fountain, handmade, with a bronze dragon, which sits in a cement basin. The water comes in a tiny stream from the dragon's tongue.

Here is a gentleman who also wants to play at being something else than he is, or somewhere else than he is.

By dint of spending a quarter of a million—"judiciously" the extract says, but that is the point in question—he is able to have a make-believe Italian garden at Bar Harbour. But when he sits on his valuable marble seat, (duly protected by cushions), what is precisely the nature of his enjoyment of this Italian garden. Assuming the best—that he is above the mere delight of having worked his will with money, that his garden is a tasteful effort in Italian gardening, and that he finds in it the gratification of a love for beauty—how far above the gomeril in the flat must we place him. He deals with an actuality at least, not with symbols; and in that respect, though less imaginative than our other friend, is nearer sanity. But has his production much nearer affinity to genuine art—that which makes an object beautiful. He has blasted out his object with dynamite and by force of dollars has planted in a foreign substitute in which to cultivate the melancholy of a double exile—exile by birth from "It'ly and that

sort of thing", and, by sheer want of culture, an exile in his own country from all the wonderful possibilities in it that are open to a man who can spend a quarter of a million in carrying out an idea.

It is sad to think of anybody looking over the edge of his surroundings for happiness. It is a situation always regarded with some suspicion, as proceeding from either want of will or want of skill to develop happiness within the field of his daily life, where alone it can be real. What are we to say of a man who, "situated in one of the most sightly portions of Bar Harbour" with a "rocky cliff" at his front door, cannot perceive its possibilities; who has missed the joy of creation; that perception and development of character, which leads a man on, step by step, with ever deepening interest, into new fields of appreciation in his surroundings; and has substituted for it the painful labours of imitation, which satisfy little and continue to separate a man from his own life.

What we say is of some importance for ourselves; for, if the pursuit of happiness is to have any place in the life of the worker in art, the study of character in the thing before him, and its expression, is the only source of that happiness.

### JUDICIAL DECISIONS.

Among recent decisions of the higher Courts in Canada, there may be noted as of especial interest.

**ARCHITECT'S FEES.**—Schwab v. Shragge (Manitoba, Court of King's Bench, 27th April) was an action by an architect to receive payment for services in the preparation of plans and specifications and in superintending the construction of buildings. The architect, under instructions from the owner, prepared plans and specifications for a terrace of three houses, and a little later prepared plans and specifications for a brick and stone block, both in the city of Winnipeg. It was not intended that these buildings should be erected at once, but the client wished to have the plans and specifications ready in advance. The client's statement to the Court was that a fixed charge of \$25 for each set of plans and specifications was agreed upon at the time they were ordered, and that, as an inducement to the architect to do the work at this low charge, a promise was made to give him the preference when employing an architect to superintend construction. The architect, on the other hand, said that no charge was agreed upon when he was employed to do the work, but when the client afterwards employed him to superintend the construction of the block, he accepted the employment on the terms of being paid two per cent. on the cost of the buildings for the plans and specifications and three per cent. for inspection. Within a short time after the preparation of each of the sets of plans and specifications the client gave the architect two cheques for \$250 each, one marked "for drawing plans," and the other "for plans and specifications." The architect admitted the receipt of these two sums, but said that they were payments on account only. Upon this conflict of real testimony, the Judge Mathews aided no doubt by the evidence of the cheques, writing being always more trustworthy than recollection, found in favour of the client. Other questions of facts arising in the same action were also decided, but none of them are of special interest.

**MISTAKE IN BUILDING HOUSE.**—It may have been through the mistake of an architect or builder that the house in question in *Ruetsch v. Spry* (Ontario, High Court of Justice, 30th April), projected in two places beyond the parcel of land described in the deed which evidenced the purchase by the plaintiff. There was no doubt that the parties to the sale were dealing with the entire house in question, and intended the one to buy and the other to sell, that house in its entirety, and so much land as was necessary to give the plaintiff a rectangular lot. It was held by Mr. Justice Anglin that the case presented did not warrant the rectification of the deed, but that, upon the time construction of the deed, it should, notwithstanding the definite description by metes and bounds which it contained, be held to include the two triangular pieces of land occupied by those portions of the house which lay respectively to the west of the western boundary and to the north of the northern limit of the lands covered by the particular description.

**TRADE UNION.**—The very latest trade union case is *Metallic Roofing Company, of Canada v. Jose* (Ontario High Court of Justice, 1st May.) The decision is that of a Divisional Court of three Judges affirming a verdict for \$7,500 damages in an action for conspiracy, tried before a special jury. The roofing company refused to sign an agreement confining them to the employment of union labor men, and the acts complained of as constituting a conspiracy were said to have been done by the defendants, v. the members of Local Union No. 30 Amalgamated Sheet Metal Workers, with the object of compelling the company to submit to the terms of the local union. The evidence showed that the company had union and non-union men working together in the cornice department of their business, ten in all, of whom two were non-union. These men were content and satisfied with their situation, with their wages, and hours of work, and no dispute existed because of some being union and others non-union. The union men in the employment of the company were, upon the company's failure to sign the agreement, called out in the middle of the day, and in obedience to the call they left with half a day's work unfinished. "The withdrawal of the men in the midst of their work," says Chancellor Boyd, delivering the opinion of the Court, "by the combined action of the defendants, was oppressive and unfair to the company, not justifiable by any countervailing prospect of pecuniary advantage to the union or the men. But the unfair aspect of this first step is enhanced and becomes affirmatively spiteful when the next move is made, by which communications are sent broadcast over the country informing the customers of the company and others that the company deal in unfair goods, and that these goods will not be handled by organized labour; the meaning of this being that any one who attempts to use the goods manufactured by the company shall have his union workmen called out on strike. This is in effect a boycotting of the company's goods because they will not sign. The loss which resulted to the plaintiffs is not overestimated by the jury at \$7,500, which is the pecuniary measure of the injury inflicted upon the company by continued and concerted action which could bring no gain directly to the defendants, nor any reasonable prospect of it." The two following propositions are laid down by the authority of English Courts: "The law which allows workmen to combine for the purpose of obtaining a lawful benefit to themselves gives no sanction to combinations which have for their immediate purpose the hurt of another." "Intentional infliction of damage upon a man's trade by combined action is wrongful unless just cause or excuse can be found for it."

## MONTREAL NOTES.

The beginning of May as usual set in motion a considerable volume of building operations, the first step in which is in many cases the demolition of old properties. This fate has overtaken an interesting group of little old stone buildings at the corner of Craig street and St. Urban streets, where the Montreal Light, Heat & Power Company are about to build. The appearance of Victoria Square is to be altered by the erection of two ten storey blocks. At the corner of Craig street and the square, Mark Fisher Sons & Company are to have a new fire proof building, with frontage of 83 feet and 77 feet, faced with Grey Canyon stone upon a granite base. In design the building follows the type of the Bank of Ottawa and the Sovereign Bank, in St. James street, and many other tall buildings. That is to say it consists of a series of five plain stories, set upon a pedestal which includes the three lowest floors and surmounted by two more ornate stories, the windows of the lower of which occupy a frieze below the main cornice, whilst those of the upper form an architectural 'attic' above the cornice. In streets of ordinary widths this type has the defect that the component parts of its design can never be seen together. It is more suited, as in this case, to a square where there are points of view from which the eye can take in the whole design at once. A more serious defect in the design of tall buildings generally however is that they are almost always built with only one or two faces even endeavoring to shew any beauty of form. They stand up like towers among the older buildings—towers of a lopsided and maimed description—and cropping up spasmodically as they do, each flaunting this same painful vice, the total effect, as exemplified in New York City, is jerky and untidy. Is it perhaps too much to expect of modern human nature to make the back of a thing decent even when it is as much in evidence as the front.

The other tall building about to be erected in Victoria Square is the Eastern Townships Bank at the corner of St. James street. This also is to be of ten stories. It is proposed to spent about \$500,000 upon it.

The plans of the new building on Drummond street, for the Natural History Society's Museum, have been prepared by Messrs. Taylor, Hogle & Davis. Besides the museum rooms there is provided a lecture hall to accommodate seven hundred people, a smaller lecture hall, and committee rooms and offices. A praiseworthy decision of the society is to employ in the construction only material of local origin. It is a refreshing piece of good sense in these days when there is a sort of craze to ransack the earth in search of something no better than what is to be had at home,—to resolve to make the best of the good things that are at our own doors. When Solomon or whoever is responsible for the proverb spoke of the eyes of a fool being in the ends of the earth he surely wished to inculcate some such homely wisdom as this.

It is understood that the question of the mountain outlook is now on the eve of being definitely settled; if so, credit is due to the action of the P. Q. A. A., whose committee on civic improvements has been using its influence in the matter. It is true that the scheme has not yet passed the stage so often fatal to schemes of the kind, that is to say, the calling of bids for contract. The work has, however, been arranged with extreme simplicity, being simply a semi-circular terrace walk

supported on a rubble retaining wall reinforced at intervals by rusticated piers, whose long and short courses bond into the rubble wall. The parapet is a balustrade, apparently of stone, with dies over the wall piers. There is no roof; but a small covered shelter is provided not far from the northern end of the promenade. The roof has been dispensed with in order that 'carriage people' may not have their view impeded by what could only benefit the inconsiderable pedestrian. Accepting the expediency of this dispensation, it is to be earnestly hoped that existing trees will not be too vigorously cleared away. Their shade would be grateful and they would successfully temper the too rigid formality of a purely architectural arrangement. Messrs. Marchand & Maxwell have collaborated on the design for this outlook.

There seems some prospect of an abatement to the overhead wire nuisance. The Bell Telephone Co. is applying for a large increase of capital, and Mayor Ekers has suggested that the compulsory placing of all wires under ground would be an appropriate accompaniment of an extended scope in their operations. Further, the City has taken action against the Montreal Light, Heat & Power Company for unlawfully placing poles and wire on Cote street. Preliminary objections raised by the company have been overruled, and the Recorder has directed that the city's action be inscribed for proof. In some cases, as for example in Notre Dame street between McGill street and Bonaventure station, the air is fairly darkened by wires. No matter how excellent the architecture may be, streets can hardly look respectable with masses of cobwebs overhead and poles of many sizes and at many angles lining the way.

On the 29th of April there occurred a collapse of a floor in the Librairie Granger, Notre Dame street, the cause assigned being one of a particularly insidious nature. The building is a pretty old one, and several rooms of perhaps 25 feet by 50 feet directly over one



STORE IN PHILLIPS' SQUARE.

another had floors carried on single flooring joists across the shorter dimension. Mr. Granger having the intention to place heavy loads of books on these floors prudently took the precaution to have the floors strengthened by trussings. Yet when the increased load was placed on the topmost floor it collapsed, not apparently by the failure of either joists or trussing but by the failure of the wall on which they rested. The circumstance was then revealed that this, the division wall between two properties, had been built in two

sections, one of which consisted of only 4 inch brick; and on this four inch skin alone the floor joists rested. Having no bond or attachment to the other section it had buckled and peeled off. The floor strongly held together by the recent trussing sank 'en masse' and carried the lower floor with it. In making alterations—even if they be all improvements—upon an old building, one cannot be too careful; inherent faults of the above description do not reveal themselves to the most careful scrutiny.

The illustration in the text represents Messrs. Jenkins' antique furniture store recently erected in Phillips Square; Messrs. Ed. & W. S. Maxwell, architects. The dressings are yellow sandstone, the brickwork of a dull red sand and lime brick, the cornice is of sheet metal. The lintel over the shop window is faced with wrought iron plate.

### THE P. Q. A. A. SKETCHING CLUB.

THE ALEXANDRA HOSPITAL.

On Saturday, 5th May, the members visited the Alexandra Hospital for contagious diseases at Point St. Charles. Mr. W. S. Maxwell kindly conducted the party through the buildings, which were at the time just on the point of completion. The buildings generally are of plastic brick with a few Roman stone dressings. The floors are concrete on steel and all corridors of communication are similarly concrete in floors, walls and roofs. Three blocks, for different diseases, radiate from the central administrative

building in which is placed a main kitchen surrounded by a corridor where attendants have the meals passed out to them for distribution to the various departments. In this way the attendants do not enter the kitchen or come in contact with one another. The wards are reached by cross ventilated inclined passages up and down. The floors of the wards are of cement concrete in slabs. The doors are flush, veneered with varnished gum wood. At the end of each ward is a large glass enclosed verandah. The windows generally are balance weight sashes with hinged fanlight at top. The laundry is in a separate building. Another contains stable, coach house, mortuary and mortuary chapel. The sewage is disinfected with chemicals before being run into the city sewers. The nurse accommodation is on the third floor at that end of the ward buildings which is nearest to the administrative building. The nurses for each disease do not come in contact with those attending on patients suffering from another sickness.

### PRIZES FOR WINTER WORK.

The final announcements in the monthly competitions during the winter 1905-6 were made on the evening of Wednesday, 9th May. Of five monthly competitions held, Mr. H. E. Fortin was placed first in three and Mr. A. J. King first in two. Mr. Fortin therefore receives three monthly prizes of the value of \$6 each, besides the prize of the value of \$25 for the best aggregate. Mr. King receives two monthly prizes of the value of \$6 each.

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**A NEW ARCHITECTS' ASSOCIATION.**

A call is shortly to be made for the formation of an Association of Architects and Structural Engineers in western Canada. It has long been felt necessary that such an association should be formed, and we understand that a large number of names have already been handed in of those desirous of becoming chartered members.

The proposed name of the Association is the Western Canada Architectural Association. It will be composed of honorary members, active members and probationary members. The latter class has been made purposely to allow the draughtsmen to be enrolled as members of the Architectural Association, and should be a great help to them.

Owing to the present busy building season, and at the request of a number of the outside architects, the matter of organizing has been deferred until July, although the preliminary work is now well advanced, and the advent of the Association is absolutely certain.

The Association will likely procure a Dominion Charter and all architects, structural engineers, and draughtsmen from Port Arthur to the Pacific Coast will be eligible to membership. Those wishing to be placed on the charter list should send in their names to the secretary pro-tem: Western Canada Architectural Association, P. O. Box 347, Winnipeg Man., or to P. O. Box 189, Regina, Sask.

The Association will not interfere with or be in opposition to any local or provincial organization, but

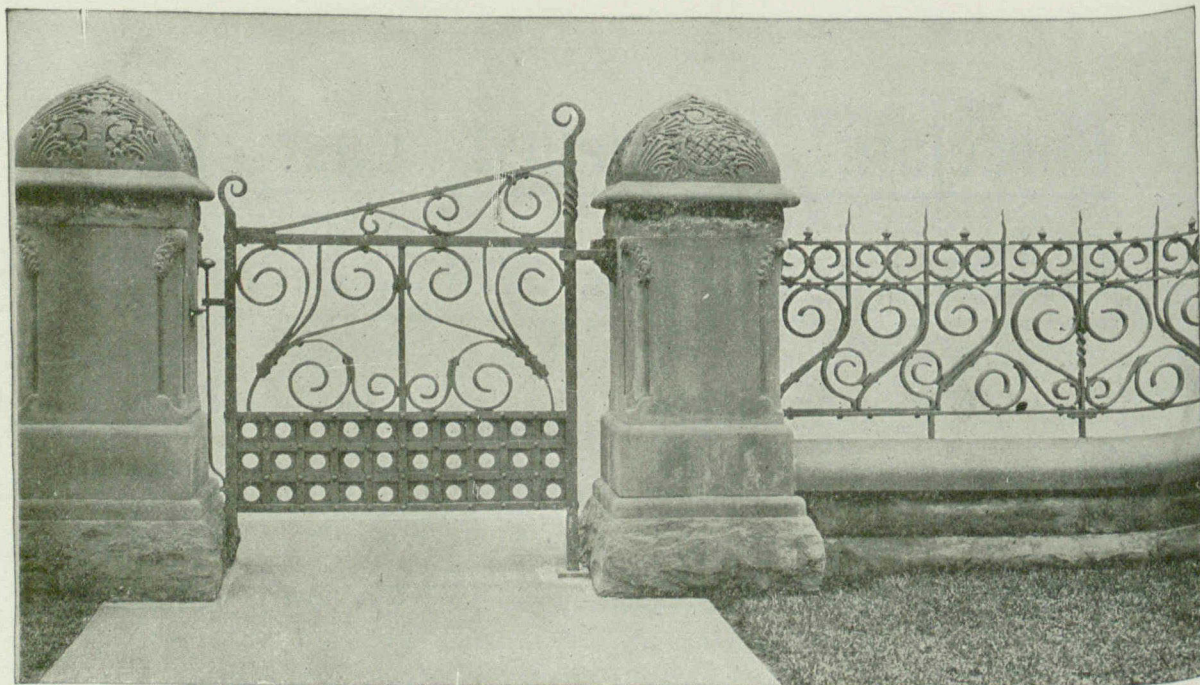
will itself endeavor to form the membership into provincial and town branches.

Building Const action or Structural Engineering as it is usually styled has been developing so rapidly in recent years that "specialists" are devoting their entire time to this work. Two decades ago the railway bridge engineer was called in to design the structural features of steel and masonry buildings. To-day the engineer whether called as consultant or designer must be more than a bridge expert. He must bring to his work a sympathy with the architect's problem and he must also be able to enter into the spirit of the work before he can properly solve the structural problem involved therein. In other words he must have had sufficient experience in the practice of architecture to know the language of architects without the use of a key. Architects will be interested to learn that Mr. William Fry Scott, structural engineer, author of Structural Designers Handbook, graduate of the School of Practical Science, Toronto, member of the American Society for Testing Materials, member of the International Association for Testing Materials, after having gained experience of methods of construction adopted in the leading cities of the United States, has opened an office as a consulting engineer in Toronto. His card appears in another column.



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The Canadian Architect & Builder received a pleasant call recently from Mr. McDonald, publisher of the Western Builder,

Milwaukee. Mr. Walker is a Canadian, and has been spending a few days with friends at his old home at Tilsonburg, Ont.

Contractors who are interested in a short method of making up estimates are referred to the book advertised by the Bradt Publishing Company on page x. of this number. A post card to the company, referring to this advertisement, will bring full particulars.

The strike of painters in St. John has been successful. They have obtained an increase of 25 cents a day. There is talk, among masons, carpenters and other building trades workmen of demanding shorter hours. A nine hour day is the general rule in St. John.

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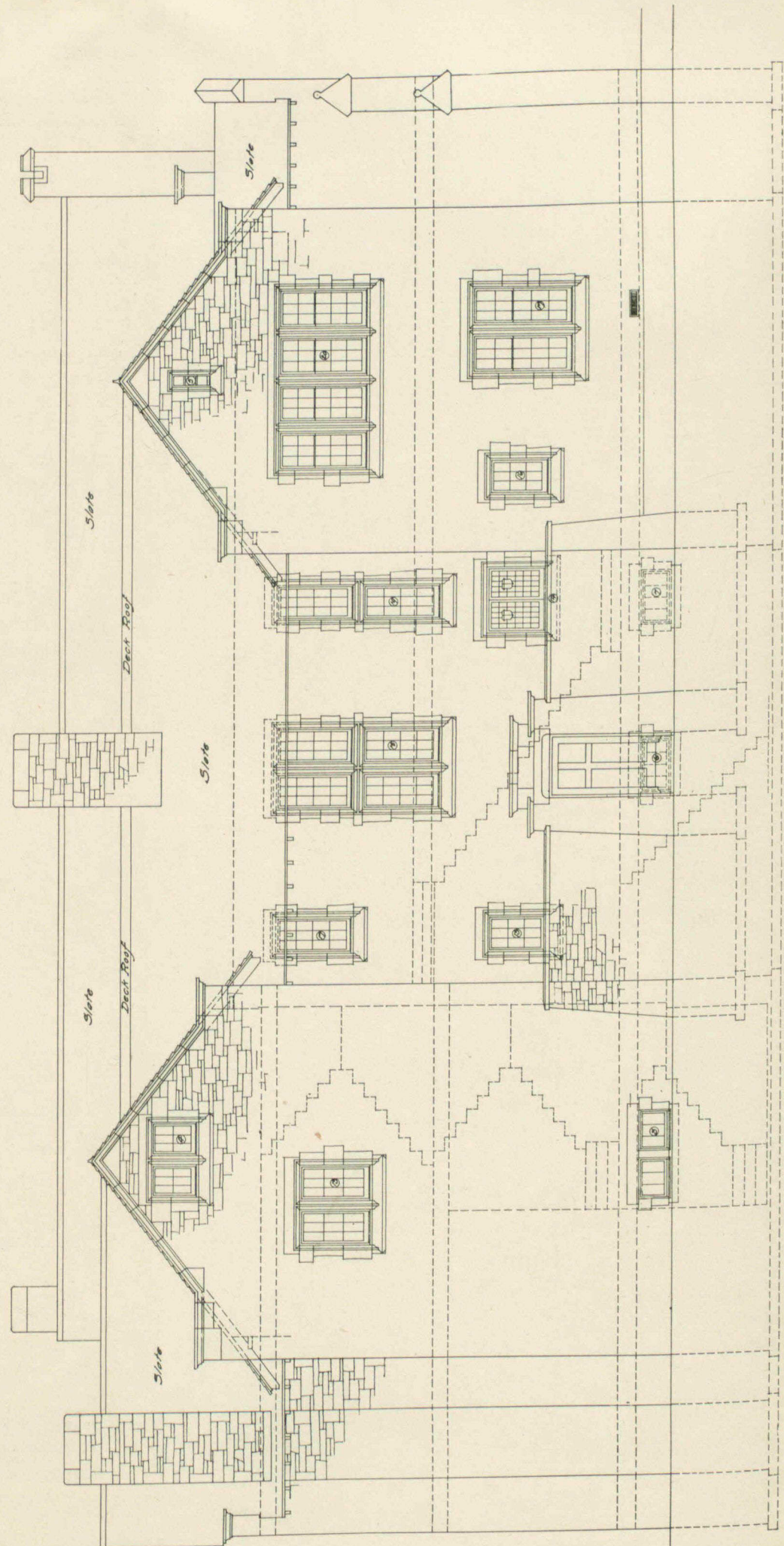
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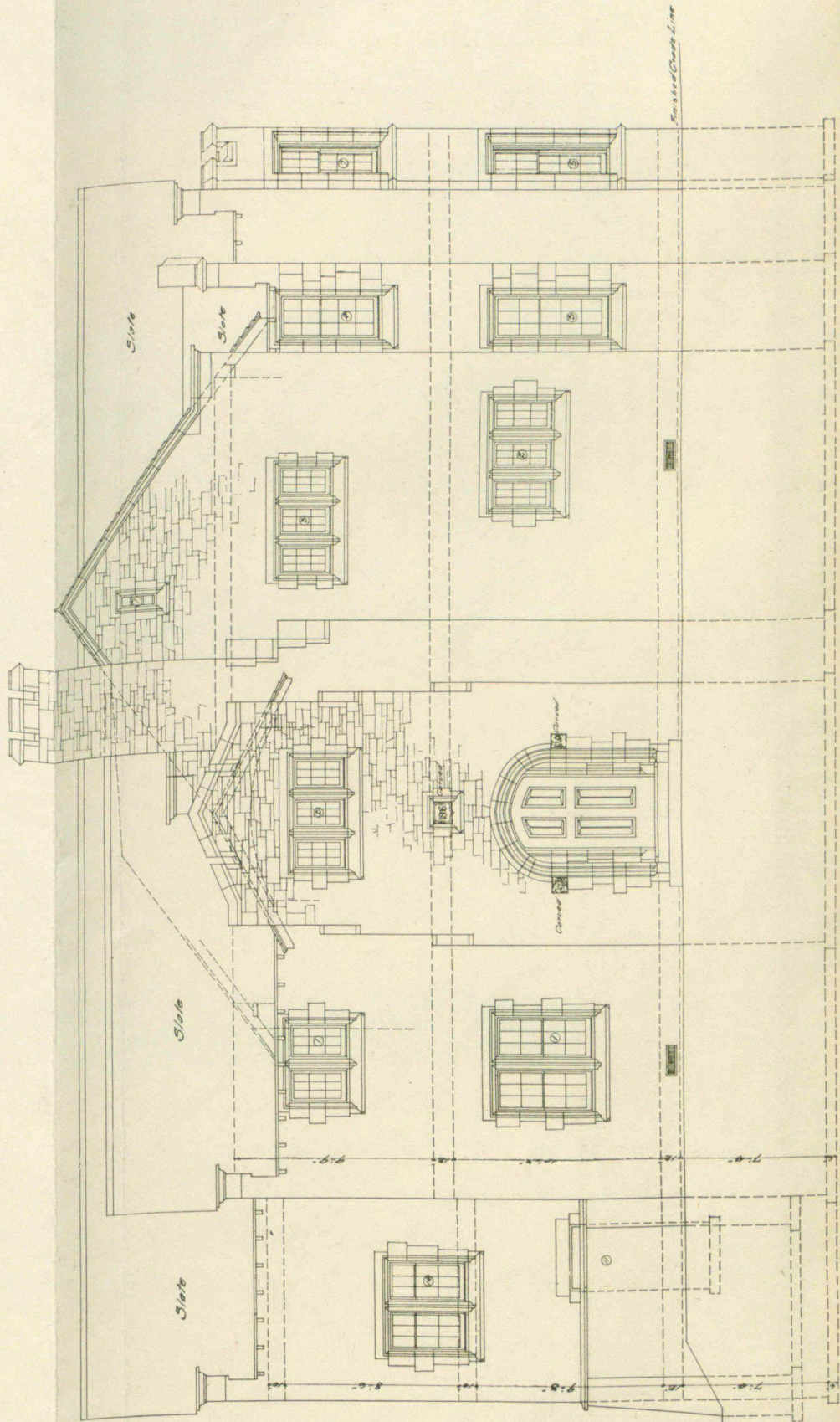
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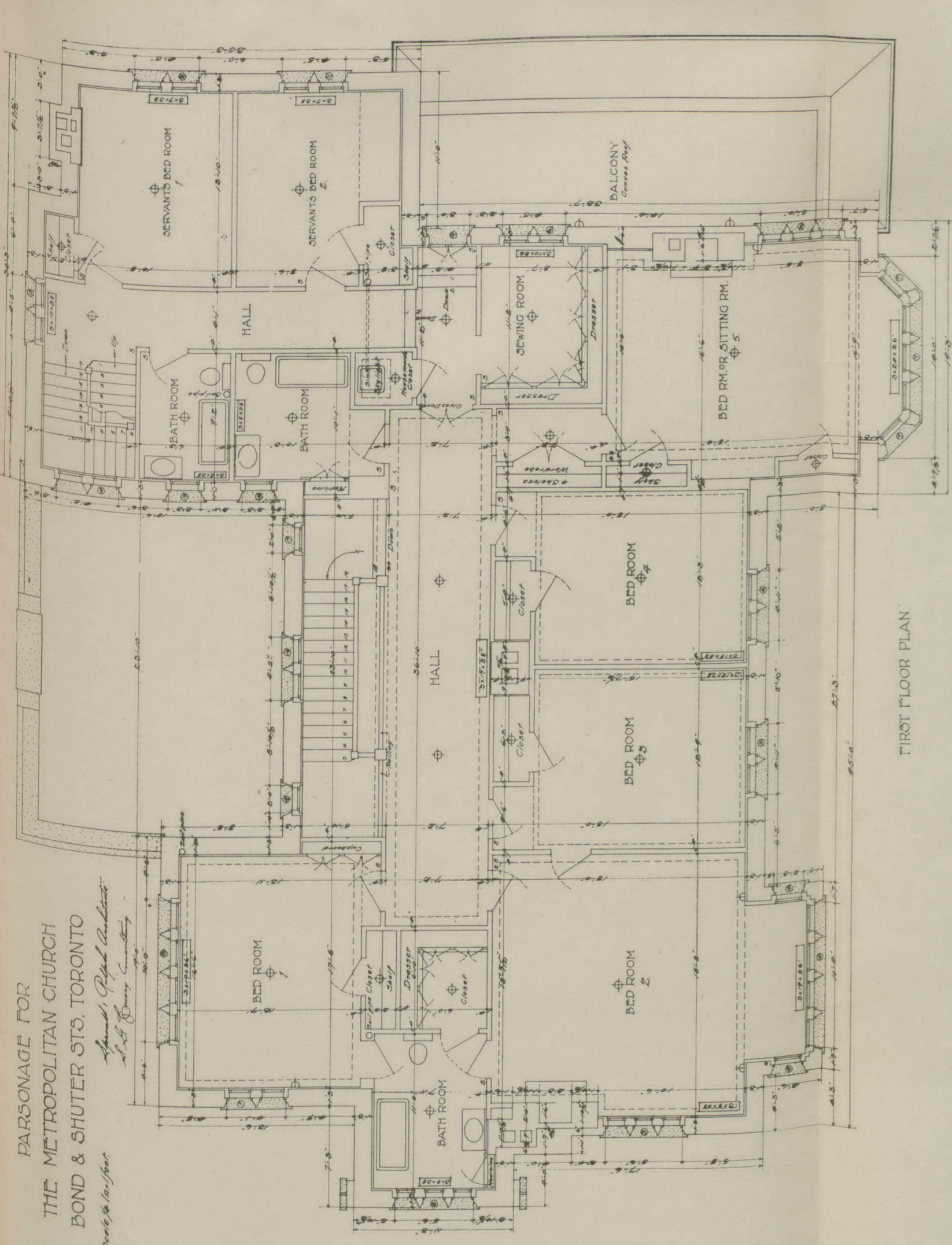
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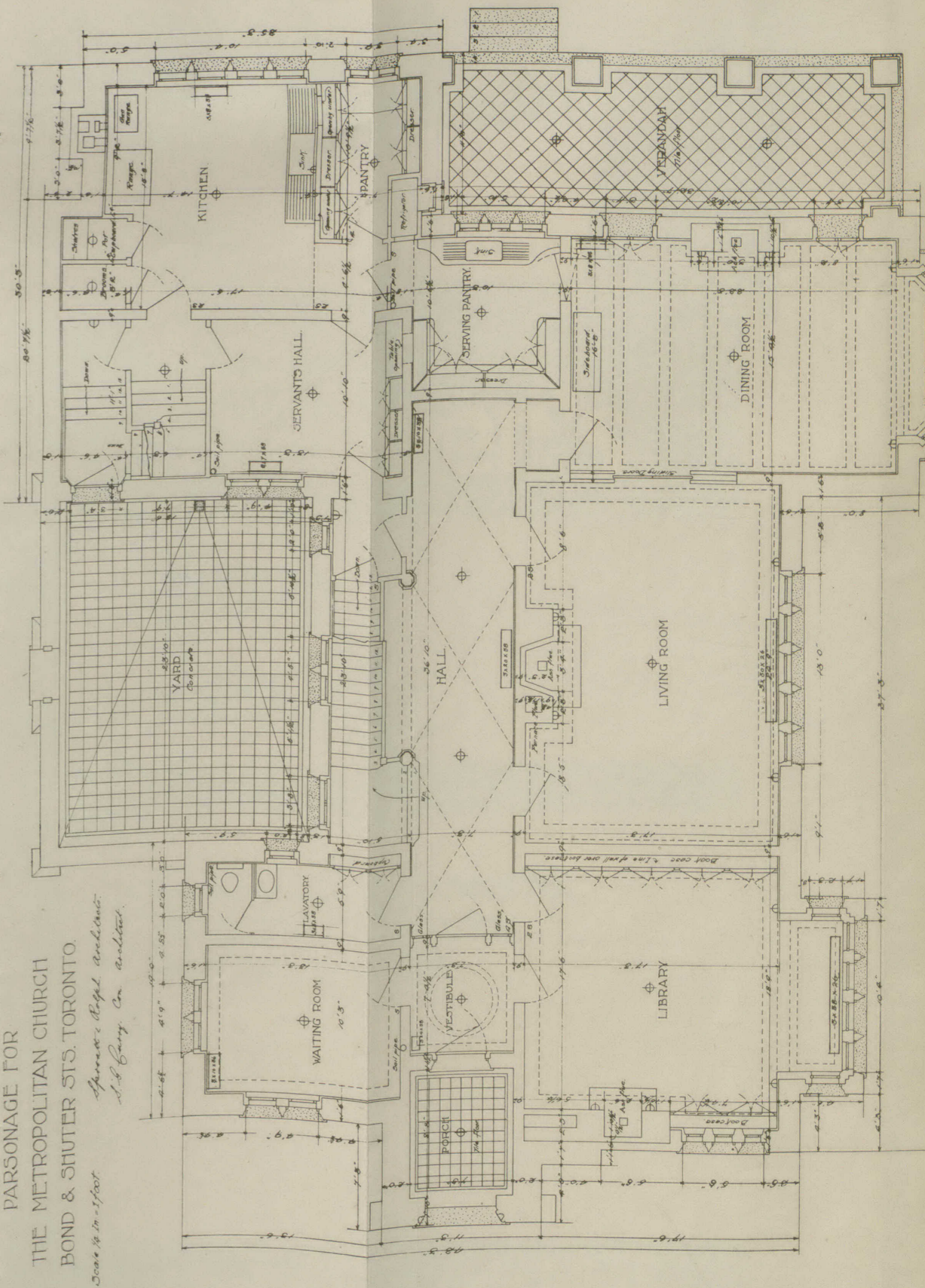


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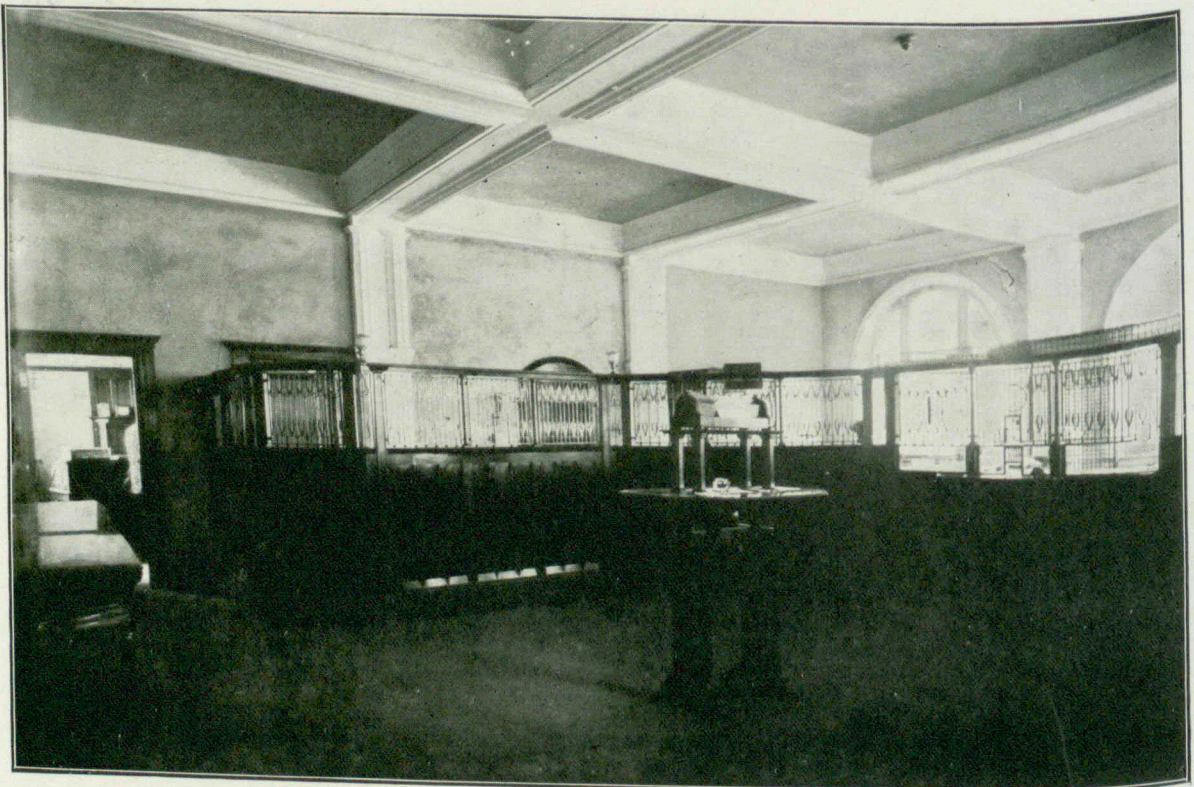
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