

PAGES

MISSING

The Canadian Architect and Builder

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ILLUSTRATIONS ON SHEETS.

The Church of St. Mary, Toronto.—The late Joseph Connolly, R.C.A., Architect.
Apartment Houses belonging to the Washington Sanitary Improvement Company, Washington, D. C.—
Choir Seats by C. A. Voysey.

ADDITIONAL ILLUSTRATIONS IN ARCHITECTS' EDITION.

Hall and Living Room in Residence of Vaux Chadwick.—Messrs. Chadwick & Beckett, Architects, Toronto.

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A Denial.

In our last number, in a note entitled "Combines and the Law," it was stated that the Plasterers were "said to have burned their books." Mr. W. J. Hynes, Secretary of the Plasterers' Section of the Toronto Builders' Exchange, writes to say that this rumour was unfounded, and begs that we will give the same prominence to his denial of it that was given to our acceptance of the rumour. This we are glad to do.

The Years' Work.

The building records for the year show that the phrase "Canada's growing time" has its origin in fact. The approximate value of building in Montreal, Toronto, and Winnipeg amounts to \$30,000,000. The sum is nearly equally divided among the three cities—which makes the record of Winnipeg with its smaller population remarkable. We have the most exact figures for Toronto, but there is no completeness in the estimate until the close of the year; there were 238 building permits added to the list in November alone. The total number of permits during 1905 up to December 1st, was 2933. The evidence that this is a "growing time", exceeding the normal expectation of increase, lies in the comparison with last year, on the same date, when there had been only 1620 permits issued, representing a value of \$5,640,000. The process of growth is plainly evident in Toronto among the factories, and one cannot walk anywhere in the residential districts without seeing new houses in course of erection. In some parts the appearance of things has been like the making of an exhibition; roads, sewers, buildings, all going on at the same time. And a walk through the same district at intervals of a month shows startling changes. If this is so of Toronto, there must have been, this summer, a wonderfu

exhibition of energy in Winnipeg, where the excrement has been greater in proportion to the body and the building season is not so long.

Telephone Poles off the Street.

The way in which our streets are spoiled by telephone poles is pretty generally recognized. It is only despair that keeps us from saying much about it. The constitutional privilege of grumbling finds its exercise chiefly among people of leisure. People like ourselves, who have to work, dislike disturbing themselves by agitation unless there is to be some result. It has been proved in the United States that there is nothing impossible about the proposition to put telephone wires underground, and that is where they will ultimately have to go. There are municipal provisions which will produce that result, in a limited way, before long. But, in the meantime, it is not necessary that we should suffer to the extent we do from the erection of crooked poles and the stringing of glistening wires. The establishment of a good residential street means that a number of people will live there who will use telephones. So up go the poles on both sides of the street, carrying a bunch of thirty or forty wires apiece, with guy-wires and service-wires running out from them at all angles. Exit the perpendicular line from the composition of the street; for it is an extraordinary thing how the eye is thrown out by a slanting pole, so that building lines adjoining it seem to be also out of plumb. Now all this is unnecessary. Without in the least attempting the task of preventing the erection of poles at all, it is a simple matter to have them removed from the streets; to prevent their erection in front of buildings by requiring their erection at the back. In most parts of this country we suffer from the rectangular arrangement of our streets. It is a pity that we should also suffer from an evil which this dull arrange-

ment is peculiarly adapted to remove. As one looks up a long straight street, afforested with poles, and reflects that there is nearly always a long straight lane behind, or, if there is not a lane there is a vacancy in which, where the back-lots meet in a fence, the poles may be run without being in anyone's way, and where nobody is likely to object to their being run, it really seems as if an agitation to have all poles placed at the back instead of in the streets is worth attending to, because there could be some result.*

The Plumbers' Combine.

It is desirable to record exactly the method of procedure of this conspiracy, and it cannot be done

better than in the following extract from a leading article in the *Toronto News*. "The process, as it has been explained in the Police Court, was very simple, and may be put briefly as follows: When tenders were called for, those who wanted to bid met and went over the specifications, figured out the work and wrote the amount of their tenders. All the prices were then averaged, and the one who was nearest to the average of the whole was given the contract at a figure agreed upon among themselves, the others being compelled to tender higher, on pain of being expelled from the association. To the cost of the work there was added five per cent. for distribution among the members of the association, and from fifteen to twenty five per cent. extra profit for bonuses to those who had tendered." An example given in Court, that of a small job, merely a residence, shows that "fourteen men got \$15 each on the plumbing contract, and the same number got \$10 each on the heating contract. This is a total of \$350 which was divided among the tenderers, for which no value was given. Nor does this seem to represent all the overcharge. The association had to get five per cent., and the man who did the work received somewhere in the neighborhood of twenty per cent. more than a fair profit." And the experience of this house owner "was, that of every man who has build a house in Toronto within the past three years." In the case of a dwelling house the ruthlessness of the mode of procedure comes home to us more than where greater sums are involved; but, the figures in large work are striking. In the case of the E. & S. Currie building, where the tender was \$6,000 for plumbing and steamfitting, the subsequent execution of the work by a Philadelphia firm for \$4,200, which included railway expenses and hotel bills for their workmen, convicts the combine of an overcharge of about thirty per cent. There was an American architect employed in this case, and the combine did not get their money; but, in the case of the building for the School of Practical Science, Toronto, where an addition of \$2,000 was made to the tender, for distribution among the plumbers, they got their money and have got it now. It is this cool proceeding of sitting round a table and dividing money exacted from a building owner, over and above the cost of his work and an exorbitant profit, that has appealed so much to the imagination of the public; but the sum extracted from the pockets of the public, merely by the exaction of an excessive profit was really the more serious con-

sideration from a financial point of view. It meant something over half a million. The *News* makes it, on a fair estimate of the amount of work done, about \$664,000. The five per cent. levy on the same work would amount to \$166,000; in all \$830,000 in a year "filched from the pockets of the citizens."

The secret of the power to work these exactions was the unity of the three branches of trade concerned in plumbing and heating—the master plumbers; the supply men, and the workmen. To quote the *News* again: "The three parties concerned in performing a contract for plumbing were organized to rob the fourth party—the customer. . . The supply houses deliberately bound themselves by formal agreement 'not to sell to the general public plumbing goods, hot water or gas fittings. The plumbers' union at the other end, co-operated with the master plumbers by refusing to allow their members to work for an employer who was denounced by the association." The members of the association bound themselves together by an oath to hold to the regulations of the association and to keep them secret. They may not have known that the oath was illegal or that their operations were illegal, but they seem to have been fully aware that their hand was against every man and that every man's hand ought to be against them. That they stepped unthinkingly over the border that separates the legal from the illegal does not say much for the condition of our business world, nor for the state of mind engendered by the exaltation of push and hustle as the truest attributes of manliness. We should not let the extent of their takings blind us to the realization of the truth that the whole proceeding was a wretched piece of boy's work at the bottom; something to make one feel ashamed.

THE LATE MR. J. W. HOPKINS.

Mr. John W. Hopkins, who died at his residence in Westmount, on Dec. 11, in his eighty-first year, was conspicuous among the older generation of Montreal architects, and was the first President of the Province of Quebec Association of Architects. He came from England to Montreal, in 1852, at the age of 27. He was the son of John William Hopkins, an officer in the commissariat; and the grandson of John Hopkins, a naval officer of some celebrity, who was in command of the revenue cutters on the west coast of England and was presented with a silver mounted cutlass, by the customs commissioners under King George III., in recognition of his services.

Mr. Hopkins was the architect of the Montreal Custom House, the Harbour Commissioners' office, and many of the large mercantile buildings in the city. He also built a number of residences, and was the designer of the St. James Club house, and one of the early members of the Club.

Besides his membership of the Province of Quebec Association of Architects, Mr. Hopkins was a Royal Canadian Academician, a life member of the Mechanics' Institute, a charter member of the Montreal Gymnasium, a life member of the Art Gallery, a governor of Verdun Hospital, a member of St. Paul's Masonic Lodge, a captain in the 5th Battalion Light Infantry (now the 5th Royal Scots) and a justice of the peace.

His wife survives him. He leaves six children—five sons and one daughter.

*As we go to press the newspapers give a list of 24 new streets or lengths of street, in Toronto, that are to have poles erected and wires strung on them. This would make a good opening to test the feasibility of putting the poles behind.

EXHIBITION OF THE SOCIETY OF APPLIED ARTS.

The second Exhibition of this Society held in Toronto from Dec. 9th. to the 23rd., is in many respects interesting and in some respects excellent, but it is not on the whole—what it ought to be—inspiring.

What is applied art? It appears, from the pamphlet sent out by the Society in giving notice of this Exhibition, that the application they have been aiming at is not very wide. They give a list of the classes of work to be represented in the Exhibition. These are:—Decorative designs; Mural decoration; Stencilling; Illumination; Stained glass, including glass blowing and glass mosaic; Work in metal, including jewelry; Enamelling on metal; Photography; Pottery, including decorated china; Wood carving; Furniture; Leather; work; Book binding; Needlework; Textiles; Basket work; Inlaid work; Bead work.

Here we recognize a general sketch of the field of what is known as Art. With a few exceptions, the objects that are associated in our minds with these classes of art are objects that are made and set before us chiefly to be looked at as objects of beauty; and the exceptions—furniture, textiles, book binding, basket work—are not exceptions in this exhibition. The furniture is of the ornamental kind; the basket work, (though of a most useful and durable kind), has been made with a dilettante handlelessness that seems to place it outside of the working class; the textiles even—good Canadian homespun—are all woven and worked in the form of portières, lambrequins, etc., about which some restive architects may raise the question whether they are applied art or misapplied art, but which at any rate are mainly intended to be looked at; and the book binding is of that soft glove-leather kind that has no back, and not backbone enough to get up off the drawingroom table.

Here is a programme of work that it is difficult to separate in function from Art—all alone without any qualifying prefix. It looks as if Applied Art is, to the Society, everything that is not Graphic Art, but serves principally the same purpose—to please the eye. Whereas the present writer went to the Exhibition expecting to see objects which, serving some other principal purpose, are, by the application of the principles of art, also made pleasing to the eye. This was what William Morris aimed at doing and did do; and the Society of Applied Art claims William Morris for its father.

It is not going far, indeed not going at all, in the direction William Morris led, to get together a little separatist band who will produce decorative articles made by hand, to enable people to get back, in the decoration of their houses, to another and a better age. There is no better age for us than our own age. That is what we are born to, and our art, if it is to be art at all, must be of our own age. If these ladies and gentlemen want to apply art in the twentieth century as it was applied in the thirteenth, fourteenth, fifteenth or any other century, when it was applied properly, it is of no avail for them to do what the craftsmen did in those centuries; they must do *as* they did, which is quite a different matter. The glory of those days was not the simplicity of their work, as the modern "craftsman" seems to think, but the simplicity of their purpose. They made things that were ugly enough and coarse enough often, but the vulgarity of being one thing and trying to look like another is, as an aim in art, post-

renaissance; and the result of the elevation of the machinist to the post of art producer is that this is his only aim; he cannot design for himself. His work is imitative; it is made to look like something else. In one word his work is not simple.

It is this want of simplicity in purpose in our art, not the means of its production that a society like the society of applied art should work against. To go back to hand production is not the way to do anything. This is an age of machinery, and if they mean to reform our household art they must use the ordinary methods of our day. That is what the craftsman did in the earlier centuries; and we may be quite sure that they despised nothing, in the way of mechanical assistance, to help them along in the mechanical parts of their work. As a matter of fact the most determined modern "craftsman" does not insist upon sawing up his own timber, or sizing it, or even rough-planing it. He does use machinery to prepare his rough material; why not let machinery prepare it a little further? There is nothing particularly noble in digging out a mortise by hand, or in wittling tenons. A machine can do this just as well; then let a machine do it. Then as to shaping his wood: why drive a saw through wood, for a distance that mounts up to miles in a day, when a band saw will run more miles and more smoothly? The mere action of the saw is mechanical and a machine had better do it. It is necessary to direct the course of the saw by directing the line of application of the wood against it. But this only requires a strong hand; and stronger hands than his are ready (and anxious) to work at it. They can do all the mechanical operations as well as he, or better. Where then does the craftsman-designer come in? He does not come in at all; he goes out. The craftsman-designer is extinguished and in his place is the designer pure and simple.

There is plenty of work for the designer to do; and, if he *is* pure and *is* simple, there is no reason why he should not do as good work as ever was done by designers who worked with their own hands at the material execution of their designs. But he must respect the machine, which is indeed quite respectable. Neither in design nor in construction should the defects of modern work be laid to its charge. They are all the work of the designer and of a public whose vulgarity is reflected in the untruth of the articles supplied to them for daily use. Things for use appear to be things for ornament; things for ornament appear to be things for use; hollow things appear to be solid; poor things try to appear rich, (one cannot say they ever appear so); new things imitate the appearance of age; every thing is so shaped in insincerity that the true designer finds little in a house to which his heart really warms except the kitchen table.

It is this feeling that has animated the Arts & Crafts people; only they have made the mistake of assuming, (in practice at any rate), that, because they find rude art true, therefore true art must be rude. And they have separated themselves from the world to wear homespuns and flannel shirts, to hew out their furniture by hand, to leave out nearly everything in a picture and call it decoration, to make built up pottery and set it up for worship; (they ought to eat their food out of it, but they draw the line at that); to live in an atmosphere of what is called art, partly from re-

pugnance to the world and partly from love of it. They would willingly convert the world to a better way of thinking and hope by exalting a true standard of taste and originality in design, (but it is not original), to bring about this consummation.

They have brought something about. We owe to them the wave of sham simplicity that is sweeping over us, and sickening us of things good in themselves because they are thrust upon us as the whole of art and because they too have become shams.

Is not this enough to convince members of the Arts and Crafts bodies, whose artistic conscience is involved in their course, that it is a wrong course? The living present demands from us something more than this hankering after the conditions of a dead past. We have our own problems and our own conditions of production, and the simple life is to be found in tackling these. For artistic simplicity does not consist in crudeness, or rudeness, or in the absence of what is rich. Simplicity is directness, and in directness is the character of true art.

For the application of this principle there are many problems awaiting the Society of Applied Art. There is a simple problem to begin with in the radiator—a small affair, easily mastered. It will not do to evade the difficulty by concealing the monster behind a grille which will retain warmed air round the radiator and prevent it parting with its heat, which it only does in proportion as the air is relatively cool around it. The design of a radiator is a question of the fixture itself that it may stand forth naked but, (like Adam), clad in native worth and honour. People shrink from the radiator because it is cast; but so is an altar-cross, the cynosural ornament of a church. It is the mishandling of cast work that is at the root of its offence, and if the Society of Applied Art would study its proper utilitarian treatment, they would do a real service in Canada; for cast metal is prominent in our contrivances for heating. One would be glad to return to the old cast frame and hanging grate, if we could have the frame made an ornament instead of an eyesore. The modern movable basket under a flue in a cavernous fireplace is not in the same class for giving out heat, which after all is the function of the fireplace. Then there are stoves, a large field of effort and not at all a hard one to hoe; for we are not limited to metal nor is there any limitation in shape. We may have close stoves and open stoves; stoves of metal; stoves of tiles, porcelain, soapstone and doubtless many other materials, alone or in combination with metal. We may have little stoves in the corner; stoves beneath a mantle shelf; large stoves a storey high, with an open fireplace below and chambers for hot air above. And as for decoration—here is a large field for development; with a plastic material, and in the very situation for adornment, since it is the literal focus of the room and all eyes turn towards it in moments of repose.

It would be interesting to go through the whole house in search of objects which lack the proper application of art; but we must leave it for the present. The subject is certainly one that would open up if it received attention.

We recommend it to the care of the Society of Applied Arts, confident that it will take care of them in return; for they are much more likely to grow and be great if they breathe more of our modern air and less of the atmosphere of dead centuries.

BRITISH FIRE PREVENTION COMMITTEE TEST NO. 99.

We have received Red Book No. 99 of the British Fire Prevention Committee, giving an account of a fire test with a $2\frac{1}{2}$ inch partition of porous terra cotta hollow tiles erected by the National Fireproofing Company of Pittsburg, Pa.

The tiles were 12 in. by 12 in. by $2\frac{1}{8}$ in. thick with three vertical perforations, 3 in. by $\frac{1}{2}$ in., in each tile. The tiles were soaked in water and built up with a mortar of 1 cement to 2 sand so as to fit exactly against the floor, walls, and ceiling of the brick testing hut (10 ft. wide and 8 ft. 10 in. high), and divide off a portion for the introduction of fire. The partition was plastered, on the fire side, two coats, with mortar containing a handful of hair and a bushel of asbestic to one yard of clean sand and half a yard of grey lime. By means of gas, introduced into the chamber under regulation, heat was applied for two hours and a half, gradually increasing to 1980° Fahrenheit, at which height the temperature was maintained for 50 minutes. Water was then applied, through an observation hole, from a steam fire-engine, for 2 minutes.

The finishing coat of plaster flaked off during the first five minutes of the test; the first coat remained in position until water was applied, when most of it was washed away. The partition bulged 2 in. towards the fire, and several cracks appeared on the side away from the fire. The face of one tile on the fire side split off. The ceiling of the hut, which was made of joists in contact with one another, with lime mortar in the joints and asbestic plaster on the surface, were destroyed to a depth of $1\frac{1}{2}$ to 2 in., leaving the head of the partition free, so that smoke passed over it; but neither fire, smoke, nor water, passed through the partition itself, which remained in position at the conclusion of the test. Part of the cement mortar in the joints had been washed out by the stream of water.

The official verdict on the test is as follows:—"This test indicates that it is possible to provide partitions $2\frac{1}{2}$ in. thick, ($2\frac{1}{8}$ in. slabs and $\frac{3}{8}$ in. plastering), having a length of 10 ft. and a height of 8 ft. 10 in., that will prevent the passage of flame and smoke from a fire burning for two and a half hours on the plastered side of the partition, raising the temperature to $1,980^{\circ}$ Fahr., and then prevent the passage of water from a steam fire engine jet."

BUILDING FOR THE TORONTO BUILDERS' EXCHANGE.

At a recent meeting of this Exchange the question of erecting a structure of their own was brought up again; and steps were taken which it is stated will bring the project to an issue in the course of the coming year.

THE ARCHITECTURAL ASSOCIATIONS.

The Province of Quebec Association of Architects will hold its Annual Meeting at Quebec on January 25th. The Ontario Association will meet in Toronto on January 16th. The business of the Annual Meeting will take place on the afternoon of the 16th. The following day will be devoted to reading and discussing papers. At 11 a.m. Prof. P. E. Nobbs, of McGill University, will read a paper on the Official Architecture of European Capitals; at 2.45 p.m. Mr. Owen Brainard, C. E., of New York, will give one on Fire-Proof Construction; at 4.40 Mr. W. A. Langton will speak of City Planning, in connection with the presentation of the report of a special committee appointed to procure a plan of improvements to the City of Toronto and an exhibition and description of the plan. The public are invited to all proceedings on the 17th.

OUR ILLUSTRATIONS.

LIVING ROOM AND HALL IN THE RESIDENCE OF MR. VAUX CHADWICK. MESSRS. CHADWICK & BECKETT, ARCHITECTS.

In plan these two apartments are adjacent; the light on the right of the hall marks the living-room door. The decorative harmony of the hall is much helped by the incidental vase of flowers and its reflection in the mirror, but there is a sort of flowery elegance about the whole work that makes a happy mean between the florid and the severely chaste. Much is due to the carved panels worked by Messrs. McCormick, Toronto, on the drawer and cupboard doors of the old cottage sideboard which, (in consequence of the utility of its cupboards), is applied to the purposes of the hall table; and to the elegance of the mirror frame, designed for its place by Messrs. Roberts & Co., Toronto.

In the living-room there is more adaptation of old articles. The mantel piece came from the old Crawford residence on Simcoe street, Toronto, and is presumably of the date of that house—about 1832. The brass frame within it was part of the mantel in its original position, except that, as originally designed to carry a hanging grate, the repoussé portions of the frame were in contact with one another and the space thus left on each side, between the brass frame and the woodwork, was filled in by a sheet of brass. The spacing out has now been inserted in the frame. The panel above the mantel was painted by Miss Florence E. Segsworth.

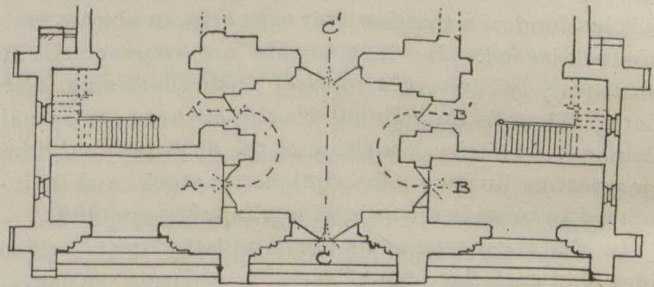
CHOIR STALLS DESIGNED BY C. A. VOYSEY.

There is no denying the vitality of this work and also its beauty, as it appears when studied carefully with a magnifying glass, but that the beauty should be only recognizable on such a close view points to the defect. The work is amorphous. With the exception of the admirable desk-end with the fishes at top, the ends are vaguely shaped and the carving is a mere surface encrustation, with no particular place to begin and no particular place to end. The whole thing is the product of a spirit of protest against the architecturalized woodwork which has been a heritage from the middle ages; a heritage of doubtful value in spite of the principle of harmony with the structure which is at the bottom of it, and in spite of many beautiful old examples of tabernacled choir stalls. But Mr. Voysey's protest goes too far, almost back to savagery. Shaped boards are an abomination. Mr. Voysey's planks have indeed some relative merit in not being much shaped, or shaped in reminiscence of any form which is properly solid. But the thinness, limited width and tendency to shrink of boards, as well as the awkward difference in the character of the end-wood, all point to framing as the proper architectural form of woodwork. Then there is of necessity, a shape, parts, and varying functions—all the elements of true architectural or true craftsmanlike motives for design.

CHURCH OF ST. MARY, TORONTO. THE LATE JOSEPH CONNOLLY, R. C. A. ARCHITECT.

The addition of the spire to this church in the present year completes the exterior except for the insertion of statues under the canopies. In the spire this is necessary for a proper effect of solidity on the angles. The empty canopies are too light. A notable feature of this church, is the vestibule planning which

gives gabled projections on each side of the tower to stop the aisle roofs and avoid the weak and unsatisfactory appearance given to the west end* when the tower is flanked by these sloping lines.



By the kindness of Mr. A. W. Holmes, who has lent us Mr. Connolly's plan, we are able to give a sketch of the vestibule arrangement which gives rise to this exterior result. The ordinary entrance and exit for individuals is by way of A-A' or B-B', cutting off draughts. The nave entrance under the tower, (C-C') is for state occasions only, or to let out a congregation *en masse*. This, in some form, is a standard motive in church plans but one cannot recall any case in which it has been made an occasion for external composition in exactly this way.

The management of the smaller entrances is interesting. By carrying up their setting so as to finish with a gabled top which rises above the eaves, the entrances are relieved of the appearance of being mere doorways under a sloping roof, (and are also relieved of snow slides). These entrances are in reality a two-storey composition. The circular windows over them belong to a gallery for the choir which, as is usual in large Roman Catholic churches, is placed at the west (or here the east) end. The stairs which appear in the inner vestibule are the means of access to this gallery.

There is another feature about this church worth noticing and imitating, that is the chapel at the side. The Rev. H. J. Heuser says, writing in a recent number of *The Brickbuilder* to give the Roman Catholic point of view of church building, "The basement chapel should never be made a permanent feature of the church where regular services are held. Basements lack the essential circumstances which inspires devotion."

The chapel is entered from the street, as shown in the general view of the church given in our illustrations, but it is also entered from the church by a door connecting it with the ambulatory of the sanctuary. It may thus serve also as a sacristy.

HOUSES FOR WAGE EARNERS IN WASHINGTON.

By the kindness of the American Consul in Toronto we are able to give an illustration of houses for wage earners that are being built in the District of Columbia by the Washington Sanitary Improvement Company. Although a private company, its operations are found to be of sufficient importance to justify the insertion of a report on the subject, as an appendix to the Health Officer's division of the Report of the Commissioners of the District of Columbia to the House of Representatives.

The company is a business organization, philanthropic in motive and in the fact that the officers of the

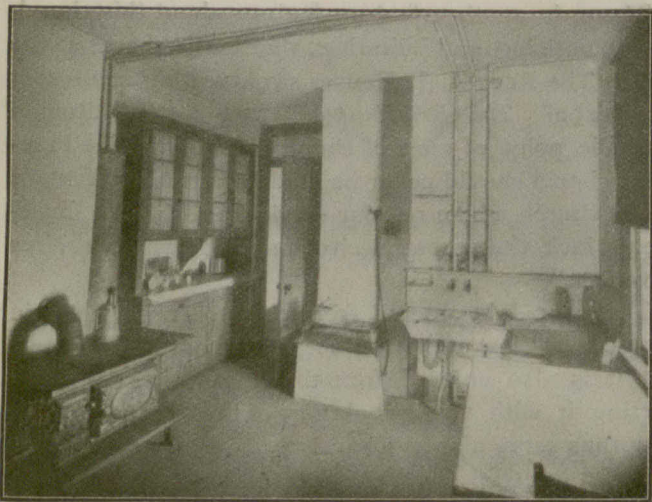
*This church has reversed the traditional relation to the East. The entrance is at the East.

company do not receive compensation for their services, but otherwise aiming at providing a first-class 5 per cent. investment. It has, in the course of seven years of existence, paid a dividend of 5 per cent. per annum on all stock subscribed from the beginning, and has a surplus fund of a fraction over 1 per cent. on the amount of stock issued. Its investments are represented at present by twenty-eight houses, each containing two flats. There is no building done in advance of actual demand. This is a condition of the directors' original prospectus, inviting subscriptions for stock, and is intended to provide for the elimination of speculation.

In plan these tenements agree with the latest English idea that each flat should have a separate entrance, private all the way from the street. With a common stair for several apartments, it has been found that the tenant of the lowest character in a house gives character to the whole house. To avoid this—to give to each flat the proper separation of a home—it is necessary, in small dwellings, to keep down to two storeys, because of the multiplication of street doors and of staircases which accompanies the multiplication of flats.

The English plan, given in illustration of *Notes of Travel* in our number of November, 1903, has the merit of a full front or back look out from every window, for which, however, a 30 ft. frontage is necessary instead of the 17½ feet which each house occupies in the Washington plan. And the Washington plan is more exactly adapted to our needs in other respects; noticeably in the bathroom, in the inside staircases to outside doors, and in the cellar accommodation.

The rents for these houses are \$12 or \$12.50 per month for a four-roomed flat, and \$9.50 or \$10 for a three-room flat, with a rebate of one month's rent every year to tenants whose apartments have not required any repairs. In other words, the company allows one month's rent in each year for interior



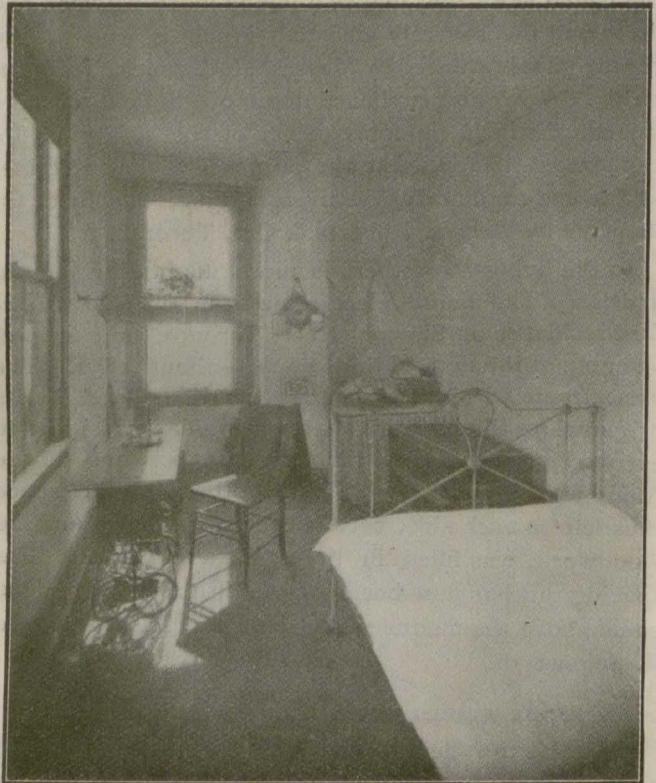
A KITCHEN IN ONE OF THE APARTMENT HOUSES BELONGING TO THE WASHINGTON SANITARY IMPROVEMENT COMPANY.

repairs, and, if no repairs are needed, or to the extent to which it is not necessary to spend the whole allowance, the tenant receives the benefit of it. This feature in the lease is said to have been educative and to have promoted taking care of the property on the principle of a stitch in time saves nine.

Another peculiar feature of this scheme is that though the original intention of the company was to provide homes for residents in the alleys, that form the slums of Washington, and thereby remove the slums, it was considered best to begin this movement by

providing improved dwellings for the better class of wage-earners, in the belief that houses vacated by them would be rented by the next grade, and so on until the bottom of the ladder was reached. They assert the belief that in work of this character it is best to begin at the top, having apparently convinced themselves that to act otherwise would result in failure.

Statistics of the tenancy are interesting. Fifty-five families now occupy the flats; 78 adults and 106



A BEDROOM IN AN APARTMENT HOUSE BELONGING TO THE WASHINGTON SANITARY IMPROVEMENT COMPANY.

children. Average number of persons to each flat 3.35. According to occupation: Baker, 1; book-keeper, 1; carpenters, 2; clerks, 12; conductors street railroad, 3; engineers, 2; labourers, 3; messenger, 1; motorman street railroad, 1; nurse, 1; paper hanger, 1; photographer, 1; plumber, 1; printers, 19; salesmen, 2; stenographers, 2; superintendent of stables, 1; teamster, 1.

It should be added that, although the officers of the company are not paid for their work, the renting of apartments and collection of rents is done by a professional agent of experience who resides in one of the flats and is thus brought into intimate contact with the tenants and their wants. The agent receives for his services a 5 per cent. commission on all rent collections.

STUDENTS' COMPETITION.

Will the author of the design signed "Ha-Ha" submitted in our Students' Competition reported on in our February Number, please send immediately his name and address to this office, or call for his drawings.

The comfort of ease without toil is an illusion, and in all faithful work there is a happiness which is seldom distinctly recognized as such. The consciousness of increasing skill, of gradual improvement, of doing something well, is a joy in itself. Accuracy and good execution are always satisfactory; the very discipline, if not prolonged beyond bounds, is pleasurable.

CORRESPONDENCE

MONTREAL, November 30, 1905.

To the Editor CANADIAN ARCHITECT AND BUILDER.

SIR:—In the October number of the "CANADIAN ARCHITECT AND BUILDER" and under the subject of "Montreal Notes" I find your correspondent refers to the question of the competition recently held by the City Authorities for the new mountain "look-out". He deplors the want of understanding between the City Council and the P.Q.A.A., pointing out the benefits that would accrue to all from a closer connection between the bodies referred to in matters pertaining to architecture.

Permit me to point out to your contributor and readers that the Council of the P.Q.A.A. are fully alive to their duties and responsibilities.

On receiving information that such a competition had been decided upon, a sub-committee called upon the Chairman of the Park Committee of the City Council, and pointed out to him the utter futility of expecting the best efforts of the profession under such conditions as was laid down in the "Look-out" conditions of competition. The whole subject was thrashed out with him, and at his request, we sent a copy of the P.Q.A.A. Code to his committee for their consideration. Nothing further was heard from that quarter. Later, we addressed ourselves to the whole Council on the general subject of competitions asking that, in the future, all competitions be governed by the Code adopted by the P.Q.A.A. Several prominent aldermen were also interviewed and an endeavor made to enlist their assistance. So far, the only reply received is to the effect that our communication has been "laid on the table". We have again returned to the charge, and do not intend to let the matter drop until some decision has been arrived at. Considering the number of times we have approached the august body of our City Council, there is no danger of their being "blissfully unmindful" of our existence, at the same time I must acknowledge they have a "Nelsonian" faculty of directing their mental telescopes from their blind eye

Respectfully yours,

JOHN S. ARCHIBALD,

President Province of Quebec Assoc. of Architects.

MONTREAL, December 2, 1905.

To the Editor CANADIAN ARCHITECT AND BUILDER.

SIR:—On taking up your November issue, I again find your Montreal contributor showing his extreme love(?) for the P.Q.A.A. by going out of his way to publish serious mis-statements in regard to its work—or want of work. I protest, in the name of our Association, against this tirade.

I presume, judging by his usual contributions, that our critic, behind the mask, is an architect, if so, I may further presume that he is a member of the P.Q.A.A.; permit me therefore to draw his attention to Article No. 5 in the Code of Ethics adopted by our profession in this Province where it states that criticisms of professional work or conduct should only be indulged in "over his own name".

I do not wish to indulge in any controversy with your contributor as to what the P.Q.A.A. has, or has not, done, but if "Concordia Salus" will communicate with the Council of Association, they will be more than pleased to inform him of their movements, with the hope that your readers will thereby be entertained with facts—great or small, as the case may be—and not with a garbled account unworthy of the author.

I remain

Yours very truly,

JOHN S. ARCHIBALD,

President Province of Quebec Architects' Association.

Our Montreal correspondents' reply to these letters is contained in the MONTREAL NOTES of this number.—Ed.

TORONTO, December 1st, 1905.

To the Editor of THE CANADIAN ARCHITECT AND BUILDER.

(Copy of letter sent Secretaries of Architectural 18 Club, and Ontario Association of Architects.)

DEAR SIR,—The recent advance in the price of wood lath, affects our price-list in items numbered 6, 7, 8, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, and 23, causing an advance of one and one half (1 1/2) cents per yard. Also in items No. 44 and No. 45, making price of lath \$5.50 per thousand instead of \$4.50 and 60 cents per hundred instead of 50 cents, as quoted in June last when our price-list was issued.

Would call your attention to the clause in our price-list stating that prices were based on existing cost of materials and labor at date of issue.

We have a committee in charge of this matter and should you wish any further explanation or discussion re same, we will be pleased to confer with you.

We have sent copies of our price-list annually to each practicing architect, but on this occasion we are only notifying the secretary of each association, which we trust will be satisfactory.

Yours truly,

(Signed) WM. J. HYNES,

Sec'y Master Plasterers' Association.

THE R.I.B.A. PRESIDENT'S ADDRESS.

Mr. John Belcher in his presidential address at the opening meeting of the new session of the Royal Institute of British Architects, after speaking of Institute affairs and some London affairs, touched upon a topic (the Architectural Education of the Public) which is, one would think, a more necessary matter in this country than in England. There, some portion, at any rate, of the public has a knowledge of architecture and cultivated taste—the natural consequence of a leisure class of educated men and a country stocked with examples of good architecture. Here we have neither inherited wealth nor a heritage of architecture. But we are beginning to take an interest in architecture because of the interest people take in their houses and in the cities in which they live. These are wholesome roots from which to grow architectural ideas, but cultivation is necessary.

The Education of the Public as a work for an architectural society has been spoken of, and indeed acted upon, to some extent, by the Ontario Association of Architects. Their method of procedure has been to invite the public to hear lectures at their annual meetings. Apparently the R.I.B.A. is engaged in something of the nature of a popular treatise which it would be well to keep track of, to see whether it could not be made useful in this country also. We reprint Mr. Belcher's address from this point.

The International Congress, of which he speaks, to be held in London in the latter end of next July is noticed in another column. A new contact of this kind for the profession in England, with the architectural world, may have noticeable results, for it is by this means, the contact of many minds at once with new ideas, that new ideas are speedily found to be "in the air", making their appearance in different parts of the country under impulses apparently, in each case, original. The occasion is pretty sure to chime with approaching development in some direction, for, so far as one can judge of what is of leading importance in one's own time, the subjects for discussion at the approaching conference seem to have been admirably chosen to cover all the ground that is of interest or in debate in the profession at present. One of these subjects of interest, the improvement of cities, is the theme of the rest of Mr. Belcher's address until he concludes, unexpectedly but with undoubted truth, by commenting (à propos no doubt of the movement to good cottage building) upon the advantage of beginning design with small problems which can be grasped so that the mind can work itself out in them.

The education of the public in the elementary principles of architecture claims our attention at the present time. I know that this idea is regarded by some as Utopian; but at any rate there is abundant evidence that people generally take

more interest in the subject than they used to. A recently-published handbook by Martin Buckmaster, though too archæological in character, is yet evidence of a demand for information and instruction of a popular rather than technical character. A committee was appointed last session to consider whether anything could be done in this direction and they came to the conclusion that certain proposals laid before them were not only practicable but capable of an extensive application. A "standard work" issued by the Institute, and directed not so much to the training of the professional student as to furnish information which might with advantage form a part of every educated person's intellectual equipment, would prove of use, not only to the public generally, but also to school teachers and others interested in education. This question, "The Education of the the Public," together with that of a diploma for architects; and the best methods to be adopted in the laying-out of cities, will engage the attention of the International Congress which is to meet in London in the third week of July in next year. This will be the seventh such congress, and the first held in London. On previous occasions, for the most part, the Congress has been aided by a State subvention, for foreign governments are alive to the importance of such events from the point of view of the national interest. Our system of government not allowing of such support, we are thrown back, for the success of the Congress almost entirely on our own enterprise and *esprit de corps*. An earnest appeal is therefore made to all members of the profession in this country to lend a generous aid in this matter, not so much by special donations, though the executive committee are by no means too proud to accept them, as by enrolling themselves members of the Congress, whether they see their way to taking part in it personally or not. If the profession generally give the committee their support, the committee will see to it that the Congress is not merely a success, but not in anywise inferior in dignity and interest to any that have preceded it. Other countries have heartily welcomed and hospitably entertained the delegates sent to them, and we must be no less generous in the reception of our foreign *confreres*, the delegates and others who are to honour us with their presence. The Institute is contributing £500; the balance—a pretty heavy one—must be supplied by subscription. A series of visits and entertainments is being arranged, and the committee are drawing up what they hope will prove a very attractive programme. When the time comes helpers will be welcomed. In particular the committee are anxious to enlist the services of any members of the Institute who may be conversant with one or more foreign languages. Three or four gentlemen have already promised their services. We are looking forward to this Congress as an opportunity of ventilating many interesting questions, and of learning something of the principles and practice adopted in other lands. We must, however, in comparing foreign methods with our own, take into account the patronage that the State in so many cases extends to the arts, and to architecture especially, abroad. Hitherto foreigners have taken but little account of our native architecture. It is only of late years with increasing facilities of travel and I may add, the improved relations with other countries which our gracious King and patron has done so much to foster, that discovery is being made of the many magnificent buildings scattered over the British Isles, many of them possessing a distinction and character not found elsewhere. In the sphere of domestic architecture particularly we can boast of much that excels anything else of the sort in Europe. From the mansion of the wealthy landowner situated in its own park to the homely cottage of the village labourer or artisan standing in a well-kept garden, often hidden behind the trim hedge of some picturesque lane, our rural landscape possesses a beauty and interest that cannot be surpassed. The atmosphere of peaceful repose in which our country towns and villages so often seem to be

bathed—the effect of that reticence and love of seclusion which mark our countrymen—is a surprise, indeed, a revelation, to those who have only seen life under other conditions, and possesses irresistible charms and attractions for many who visit us from other lands. We ourselves have not shown due appreciation of these beauties of our native land. Not only are we, as a nation, fond of travel, but we are wont to extol everything foreign and depreciate everything that is our own. Foreigners, naturally enough, have taken us at our own valuation. It has been so in every department of art. Not until a man's work has been approved and commended by other nations is he recognized here as worthy of any honour. I anticipate that the International Congress will go far to open the eyes of the public to much in their own land that they have not hitherto valued at its true worth. Let us make every effort to welcome our colleagues heartily and to do them all the honor we can, and thus contribute to draw closer the bonds of international esteem and friendship which draws us to them.

I make no apology for bringing before you once again the question of our street architecture in its hygienic aspect. The appearance of our public thoroughfares is commonly regarded as a mere matter of taste, and is not believed to have any bearing upon the health or morals of the people. Last year I laid before you reasons for thinking otherwise, and I again press the matter upon your attention, because the proposals laid before Parliament by the Traffic Commission will, if adopted, afford a splendid opportunity for the application of better principles than have hitherto prevailed in this respect. The formation of new main avenues and the widening of important thoroughfares to provide greater facilities for locomotion and transport imply new building frontages. Let the facades which are thus to be in the public eye, as it were, for many long years to come, be under proper control from the very first. The owners of land bordering on a public thoroughfare ought not to be at liberty to indulge an ill-regulated fancy for what is bad and false in architecture or vulgar and showy in appearance. Let there be a control set upon private caprice that our street architecture may be marked by that restraint, that unobtrusive simplicity, the result of serious and dignified thought, which may tend to produce like thought in the minds of those who look upon it. The formation and widening of main arteries in great cities has another aspect. The work no doubt is primarily undertaken to provide for the ever-increasing demands of the traffic; but incidentally it assists materially in bringing a proper air-supply to the crowded centre. The extension of the tramway system is driving from the suburbs many of the wealthier class who in the past have resided in suburban houses standing in many acres of land. These grounds are now being acquired by the speculating builder, who is busy running up small houses crowded together into the minimum space permitted by the Building Act. Thus the supply of air to the central parts is being blocked in every direction by a zone of over-built suburbs, and the danger in case of an epidemic of a malignant character is increased most seriously. In some countries—for instance, Germany and the United States—State interference has been invoked to regulate the "extension of cities," and I am glad to note that the authorities are seriously considering the advisability of similar legislation in respect of the suburbs of London. The attention of the public has been somewhat diverted from this larger subject to what is relatively a minor detail—viz., the character of the small villa residences referred to; but the interest taken in the so-called "garden cities" is evidence of an awakening to the importance of a graduated increase of air-space in proportion as the buildings recede from the centre of the city. As Sir James Crichton-Browne said at the Sanitary Congress, "it is desirable that we should obtain control of the builder, and prevent the indefinite and unguided growth of the suburbs. We should then construct great leafy avenues, fine broad tho-

roughfares, stretching away into the immense ocean of beautiful air in the country."

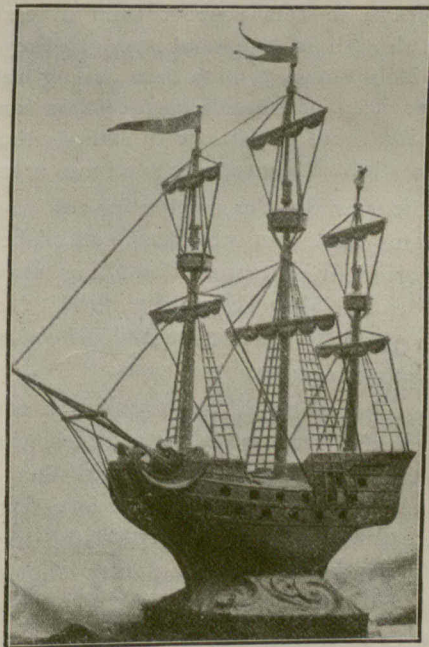
The laying out of such avenues and thoroughfares is not entirely and solely a matter for the engineer and borough surveyor. The architect, and in certain cases the painter and sculptor, might with great public advantage be called in to collaborate with them. It is not the best way in such a matter to take an Ordnance map and rule a straight line from one point to another. Yet such is, in essence, the course frequently adopted; and should any important building or object of interest come in the way, the engineer's motto is too often like George Stephenson's in respect of the cow that somebody suggested might trespass on his new railway. There is a great deal more to be determined in connection with a new thoroughfare than the most direct route, the necessary gradients, the sanitary and hygienic requirements, &c.; there are artistic possibilities to be taken into the public service, such as the opening up of suitable vistas, the bringing into prominence of the screening of existing buildings, the slight turning from the straight line to heighten the effect, or provide places for carriages to stand out of the line of traffic. These and other expedients which have been adopted in some foreign cities with admirable results—as pointed out recently by Mr. John W. Simpson in his interesting paper on "The Laying-out of Cities"—all fall within the proper function of the architect. So, also, do the methods to be adopted in crossing squares and open spaces, and devices for lessening the points of collision from cross-traffic, to which he referred. With reference to divergence from the straight line, I may point out that though the method of straight lines and uniform buildings possess many merits, and should be rigorously insisted on wherever a dignified approach is demanded, or stately and official requirements render it obviously advisable, yet, to be effective, this style of treatment must be limited and kept within due proportion to the purpose; otherwise it ceases to be impressive. Mere repetition spells monotony, and a long straight street is appalling to the pedestrian, so that a break in the line of axis, such as a square or open space, is welcomed as a relief. It is often possible to introduce such features into a scheme with admirable effect and without breaking the line of route. These are some of the special considerations which would naturally be referred to the architect when associated with the engineer in the laying-out of new streets. The authorities need to be awakened to the fact that these matters have a commercial aspect which appeals to the practical mind. Art pays when properly handled. Not anything and everything that is labelled art; not the art which vaunts itself, but rather that which is concealed, the art which influences, controls, and satisfies by its sense of fitness; the art which, for instance, concentrates effects or subordinates parts in their relation to the whole; which seizes opportunities, or even difficulties, and turns them to effective account. In such wise can art bring enhanced value to schemes which would otherwise be merely utilitarian, and blank utilitarianism is apt to be disfigured by a brutal directness which is repulsive, or a bare and naked plight which is vulgar. In the absence of a minister of fine art with duly qualified advisers, an art commission similar to that which has been established in New York has been suggested. The commission referred to has jurisdiction over all designs of municipal buildings, bridges, approaches, gates, fences, lamps, the lines, grades, and plotting of public ways and grounds, arches, structures and approaches, and other similar matters. It must be admitted that such powers as are here indicated can only safely be placed in the best and most capable hands; for, alas! what frauds, if not crimes, are perpetrated in the name of art! False art has made many mistrust all art, and caused them to shut their eyes to the real value and influence of that which is genuine. I believe, however, there is a better time coming. It is noteworthy as one passes through the country what an increasingly large proportion of the smaller classes of houses have evidently been designed by architects.

The builder is discovering that an architect's design is not an expensive and unnecessary luxury, but that the initial outlay is more than repaid if not in the actual building of the house—and this often happens—at any rate in the improved letting which results.

I cannot help remarking too, upon the advantage which accrues to the architect himself in the process of studying and designing small houses. It certainly is not very remunerative work, but it has its compensating rewards. Any real advance must no doubt begin in small things before there can be a true appreciation of greater work. As the true qualities of architecture should be equally seen in small as in large buildings, they may perhaps be more easily grasped and understood by way of less complicated problems. Increasing knowledge will add to the number of those who appreciate and desire good work, and their sensitiveness in matters of taste will incite the producers to higher efforts, so that by action and reaction our native art will approach a higher level. Let us seek not merely to fan the growing interest in our art, but also to awaken a clear perception of its true qualities. It will not be long, I venture to prophesy, before public opinion will declare itself definitely and decidedly, insisting upon grace and refinement both in our public buildings and our important thoroughfares. Given such an opportunity, we may feel confident that our national architecture will not fail under the test, but will reflect the highest and noblest qualities of our race.

A FINIAL BY SIR ROWAND ANDERSON.

The finial illustrated below has been designed by Sir Rowand Anderson for the principal gables of the Sir William Pearce Institute at Govan. It was executed by Mr. Charles Henshaw, decorative metal-worker, of Edinburgh. As appropriate to Govan, renowned for its shipbuilding yards, the design takes the form of a ship, though an ancient example of Armada days has



been thought more suitable than a modern ship. It is fixed on a pedestal of stone and measures fully 6 ft. overall, with a width of 4 ft. 6 ins. At first the intention was to make the ship of cast bronze, but this idea was given up on account of the weight. Sheet copper was therefore chosen, which necessitated greater care and skill in construction. The framework is of wrought-iron, and every precaution has been taken to secure sufficient strength to withstand wind-pressure.—*Builders Journal and Architectural Record.*

Seattle has accomplished the widening of a street without moving all the buildings which encroach upon the portion desired for street use—at least in theory. It is proposed to take nine feet from the property for street use, but the buildings now erected on each side of the street shall remain undisturbed so far as their upper stories are concerned, and the owners may make arcades over the nine feet of sidewalk, which must be taken from the lower stories.—*Improvement Bulletin.*

RE-ENFORCED CONCRETE CONSTRUCTION

A paper on the above subject was read by Mr. André Loignon before the Province of Quebec Association of Architects and was followed by a general discussion. Mr. Loignon said that the system of construction in re-enforced concrete had been extensively used in Europe during the last 25 years and had been coming into vogue on this side of the Atlantic. The advantages claimed for the system were its fire-proof quality, its monolithic quality, absence of vibration, power of resisting shocks, reduction of dead weight and the convenience of direct plastering. In the great fire of Baltimore re-enforced concrete proved its excellence under fire.

In the complete acceptance of the system the ordinary I beams are replaced by re-enforced concrete beams usually of a bar stirrup construction, and in designing such beams it must be remembered that the elasticity of the steel is ten times that of the concrete, and these qualities of the two materials should be so proportioned as to break at the same tension; and this consideration must more especially be taken into account if high tension steel is to be made use of with advantage. In addition to the ordinary problems of tensional and compressional stresses, the tendency of the bars to slip or slide in the concrete is a circumstance to be provided for. Plain round bars are of course the cheapest and most easily obtainable, but special twisted and corrugated bars are on the market. The tendency to slip may be averted by properly anchoring them at the ends and it should be borne in mind that a number of smaller bars will often be of more advantage in this respect than a few bars of larger size, though in tensional strength they may be the same. Thus seven $\frac{3}{4}$ inch bars having about one-third greater area of outside surface than four 1 inch bars will offer more resistance to sliding, though the latter have a slight advantage in sectional area.

Precise theories for the calculation of re-enforced concrete beams have not yet been established. The French Government is at present making experiments with a view to arriving at precise data. Meanwhile the formulæ given by Christophe and others are sufficiently accurate for general purposes.

Correct proportioning of the constituents of the concrete and careful workmanship are essential. The best cement should always be used in this class of work and machine mixing is of the greatest advantage. The concrete should be kept damp for 3 or 4 days after being laid and the centering should be allowed to stand for three weeks. Cinder concrete varies greatly in strength but is in general much inferior to that made with stone aggregate. Re-enforced concrete should not be made in frosty weather.

In the discussion which followed Mr. Amos, Mr. Beullac, Prof. Nobbs, Mr. Archibald and others took part. In answer to questions, Mr. Loignon expressed the opinion that the fact of bars being a little rusty was no objection to their use. Further oxidisation was effectively checked when the rods were embedded in concrete—except indeed in the case of cinder concrete—and a slight rustiness aided the adhesion of the cement and tended to prevent slipping. As to the possible span of re-enforced concrete beams he knew of one case in which such a beam carried a music-hall

gallery over a span of 60 feet, and a roof beam had been made 102 feet long. In these cases provision had of course to be made for expansion and contraction. The monolithic nature of expanded metal necessitated special rigidity of foundation; but this was the less difficult of accomplishment when the comparative lightness of re-enforced concrete walling is remembered. The lecturer cited a case at Keewatin in which masonry walls 8 feet thick had been replaced by re-enforced concrete only 22 inches thick. Such work could moreover be made practically waterproof.

A NEW CONSTRUCTION PROCESS.

When, on January 12th last, Prince Albert of Belgium visited the Liege Exposition, technical experts from all climes, and most of them not so easily enthused as the general public, could not help being astonished at the display. Congratulations were extended to the representative and administrator, delegate of the "Societe de Fondation par Compression Niccanque de Sol," Mr. Maurice Ducastel, for the promptness with which the foundations of the "Palais des Beaux Arts" had been laid. This very important work which could not have been performed under the old system within less than eight months, had been well executed in six short weeks and at a cost not exceeding one third of the estimated expense, thanks to the new process by the mechanical compression of the soil.

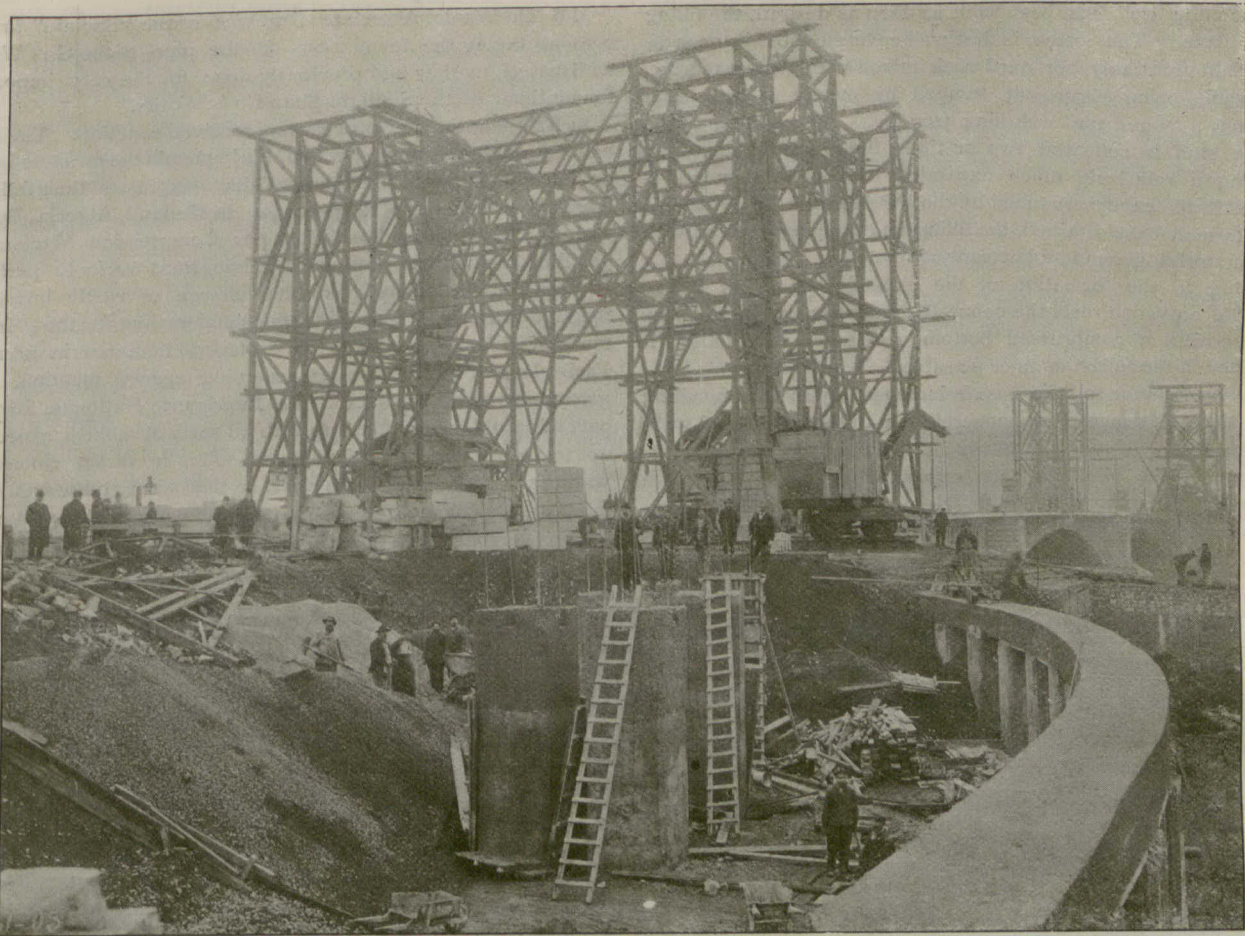
The process used to so rapidly lay the foundations of the "Palais des Beaux Arts" deserves more than a summary description, the more so in view of the extension the new system has been given in all quarters of the globe, by the "Societe de Fondations par Compression Niccanque de Sol." On the very grounds of the Liege Fair, the works erected by the "Societe de Fondations" can be seen and in great variety, in which is forcibly demonstrated the excellence of its new process, under whatever conditions it may be resorted to. The rock-like basis of the Commemorative Monument erected at Fatrime Cape in honor of Gramme is an example. These foundations were laid in the ancient bed of the Maise river, in made up grounds and of dredgings undertaken for the straightening of the river. (Cut No. 1.)

Further on we come across an arched bridge, span of 170 feet and two semi-arched abutments. The foundations for the piers had to be dug, of course, in the middle of the river. At a little distance are the Cockerill and Solway works, the By-Products Buildings of which rest on foundations laid by the "Societe" on grounds made up from fine slate excavations refuse promiscuously spread in pools of stagnant water and left emerge to this day, for the simple reason that no method had yet been found by means of which a solid basis for building could be found in such grounds. (Cut No. 2.)

Again a little farther on the Liege Tramways' shed of the "Aux Ecorces" Island are met with. The "Societe de Fondations" was called upon to supply the foundation piles capped by beams and anchorages in reinforced concrete laid in submerged grounds for the support of the vast car sheds of the Tramway Company. The same process has been applied in various ways to these works.

The process of construction consists simply in causing a compression of the soil on all sides: laterally, vertically of course, as well as horizontally, at any desired depth. In whatever kind of soil the new method be applied is thus formed a series of solid points or poles resting on an expanded base covering a good, dense natural bed, after layers have been traversed. The preparation of the new method of piling is made by means of a conical driving hammer, called the "perforater" and weighing 2,300 kilos or 5,600 lbs.

In certain situations the depth of the preparation well has been as much as 64 or 65 feet. By the lateral compression of the soil the well walls are thus given firmness to resist external strains. When the piling has to be made in aquiferous grounds, the new process provides for the perfect imperviousness requisite in the following manner: The well is filled with clay or soil up to a point a little above the water vein and the "perforater" is set in motion in such a way that after repeated strokes thereof more of the same soil is let in so that after a little while a genuine plastic tube well has been formed in the ground



No. 1.

against the unstable material traversed which is forever absolutely inaccessible to water (Cut No. 3.) Landslips from water infiltration are in no way to be feared with this treatment.

To recapitulate the advantages of the process, it must be truly said that owing to its operation, excavations, sheet piling and water pumping are entirely done away with. Any one acquainted with the cost of these tedious works cannot but admit that

their suppression alone should secure a prompt success to the Societi des Fondations par Compression Niccanque de Sol."

One of the very encouraging aspects of the method lies in the fact that the workmen are never in the least exposed to any danger during the operation of the process; no necessity is ever experienced of course to descend to the well bottom, or, for that matter, to any point of its depth.



No. 2.

When the well has been sunk as deep as desired, the filling takes place. The bottom is first well covered with very coarse material, preferably big hard rock mixed with cement mortar, the whole being vigorously tamped by means of an ogival hammer, a "Bourreur" weighing 4400 lbs. An addition of the coarse stuff is repeated two or three times and thanks to the tamping a relatively much expanded heap of solid ground is formed in the cavity produced by the "Perforator." With this well formed base attained, the filling and tamping goes on with finer material, ground and cement concrete.

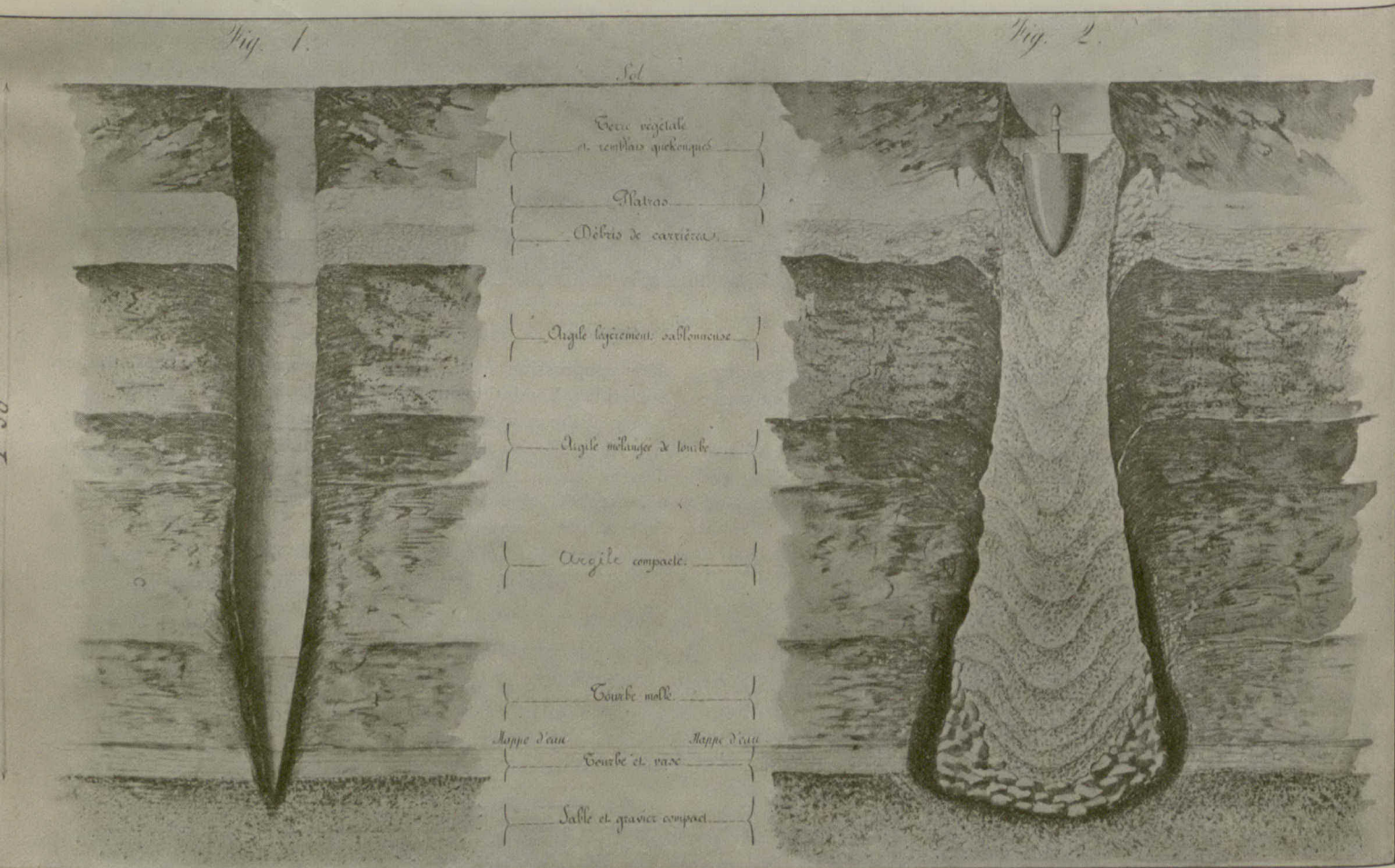
Owing to the formation of the expanded mass of heavy material on which rests the concrete foundations while the base itself covers a compressed bottom, resistance to sinking is obtained in the fullest manner possible.

This resistance of the base is increased by the one resulting from the adherence of the concrete pile to the compressed walls of the well. Under the blows of the tamping hammer, the contour of the pile has been expanded so as to encircle a diameter of 1.10 to 1.50 meters (40 to 55 in.) and more if necessary.

Besides, by virtue of lateral compression effected by the

MM. De Waele, Associate Grantees of the "Societe" are at present laying the foundations for the piers of the Gas Works at Brussels, as they had previously done for the very important foundations of the Sunlight Soap Co.'s Works.

In Belgium, the new process has received sanction. The most eminent engineers among whom, McJaquemin the far famed chief engineer "des Ponts & Chaussees" have expressed their full confidence in the merits of the process. In Holland, Algeria, Egypt, etc., the "Societe des Fondations par Compression Maconnique des Sol" has had and presently has important works to perform. In France the "Societe" has taken charge of vastly important foundation works. The foundations undertaken for the "Imprimerie Nationale" to cover grounds several hectares in area, in Paris close by the Seine river, deserving special mention. The ground presently occupied by the Imprimerie Nationale forms a part of an old quarry filled up with all sorts of rubbish, especially apt to absorb water. This made up soil is in direct connection with the waters of the Seine river, so that when these run with more or less volume, the riparian grounds are water-soaked to within less than three meters (10 ft.) below the general surface of the soil. To reach the solid bottom, about 41 ft. of the incon-



No. 3.

conical hammer used in the first stage of the well preparation, the soil has been powerfully compressed between the adjoining pile and the well preparation and the resistance thus added not only tells against the sinking tendency but also against the over-turning strains.

Last, but not least, the pile being wrinkled in a high degree on its periphery has penetrated the earth in a way to be absolutely imbedded therein, as the hand in a glove, and securely held in its folds.

One machine can dig per day two pile wells 9 meters (30 to 40 ft.) in depth.

Modifications of the process are easily found to meet any emergency. As an instance, for the bridge necessitated by the straightening of the Ourthe river, the foundation had to be laid in the bottom of same. A light cofferdam was built, its inner face was duly embanked and the perforation went on. In spite of the surrounding water and owing to the robe-like envelope formed in the clayey soil by the perforator, the filling up of the wells was done without any of the filling material getting wet.

gruous filling have to be gone through. The pile wells of course had to be dug and then tamped in made up soil having a superficial density on top but entirely deficient in tenacity and semi-liquid down to the solid ground. This work has been executed by the Societe des Fondations with an unprecedented promptness, and if not with ease, at least, methodically, and with perfect success. Thus far about 1,200 of these unalterable stands of support have been laid down, some of which actually carry loads of 600 to 700 tons.

BUILDING IN MONTREAL.

The report of the Building Inspector of Montreal for October as to building operations, shows that one hundred and thirty-one permits for new buildings were issued, at a cost of \$559,049. Permits for alterations numbered 29, and the amount involved was \$80,374. This made a total amount invested in building operations last month of \$675,423. The increase over the corresponding month of last year was \$399,393.

MONTREAL NOTES.

About two years ago Mr. Carnegie offered Montreal the sum of \$150,000 towards establishing a public library. After a lengthened and spasmodic discussion of the question the City Council decided, on the 27th of Nov. last, that the offer should not be accepted, on the ground apparently that the annual expense involved would be too great and might be applied in better ways. It was Carlyle we believe who pointed out that we seem to be able to afford jails for all our great cities, why not have public libraries instead; the suggestion being that in reality we had here two alternatives to make choice between, and that in a progressing civilization the public library would do away with the necessity for the jail. The golden age is not yet it seems.

In an address to the Art Association of Montreal Prof. Nobbs of McGill University made an appeal for the establishment of a Museum of Industrial Art with a view to improving the standard of Canadian productions and, in order no doubt to commend such a scheme to a city which will not accept of public libraries, he points out that there is money in it. The idea is one which all interested in good or artistic workmanship would willingly see realized. Meanwhile however we make a little step forward in equipment for industrial arts, for, on the 2nd of Decr., Lord Grey laid the foundation stone of the new Commercial & Technical High School, which is to be built on the north side of Sherbrooke Street between St. Famille and St. Urban Streets. The purpose of this school, as expressed in the address to His Excellency on the occasion, is to "send forth its alumni year by year endowed with breadth of idea and skill of hand to take their places with credit in the great world of commerce, design or construction."

At a City Council meeting, on the 20th of November, a by-law was passed to the effect that "every new building erected on the lots fronting on either side of Ontario Street shall not have less than three stories." This must be characterised as a careless piece of legislation, for a natural result of its strict enforcement would be that an owner, having the intention to build two stories of substantial character, would be compelled to build three stories; and, if in doing so he lowered his standard of building to the minimum required by law, one could hardly blame him. Such unsatisfactory by-laws might very readily be avoided by the establishment of a definite connection between the City Council and the Province of Quebec Association of Architects, the want of which has time and again been deplored in these notes. Some remarks of more than usual and perhaps regrettable bitterness on this point have called forth a couple of letters from the President of the Association, published on another page, to which we are glad to draw attention. These letters demonstrate that, whilst little or no information about it has been leaking through to the general public, the Council of the P.Q.A.A. has been actively if vainly endeavouring to achieve something in this matter; and they effectively shift much of the blame on to the shoulders of the City Council which has the nonchalance to say in reply to important communications that they have been 'laid on the table'. Now the general position in this matter of the writer of these notes has been to point out not that the Coun-

cil of the P.Q.A.A. do not do their work, but that the P.Q.A.A. itself does not carry weight in public matters; and the general line of argument has been that it fails to do so by not appearing as a body to interest itself sufficiently in the public's affairs. The blame for such a state of things by no means rests with the Council but primarily and essentially with those members who when the Association holds its meetings do not turn out to them and so give weight and value to its proceedings. When lately a paper on a most interesting subject, that of reinforced concrete, was read before the Association by Mons. André Loignon, the meeting was not as large as it ought to have been, and it is this sort of thing that keeps the Association in its present disintegrated state. The want of loyalty which keeps members at home on these occasions is the fatal weakness. It will generally be found that the busiest men are those who find time to be present. Unfortunately, when one grows indignant at such a state of things, the only persons likely to take such indignation seriously to heart are those who are clear of all blame, as in this case the President and Council of the P.Q.A.A. Let the meetings of the Association be heartily supported and we shall soon hear of its receiving more respectable consideration. Mr. Archibald hits very hard but I hope to live long enough to see him write of my 'love' for the P.Q.A.A. without any (?) after it.

The following extract from a witness' interviews with the City Building Inspector throws a certain side light on the relation between the Association and the City. "Mr. Chaussé referred to the request of the Province of Quebec Association of Architects that whenever permits for buildings are granted blue prints of the plans should be lodged with the Building Inspector. The City Council refused to do this a month ago remarked Mr. Chaussé, yet it ought to be done, and is done in every other city We have a vault here which was specially built for filing such permits but up to date there is only one plan in it. That plan was made by a firm of United States architects, who thought the law here was the same as over there and consequently lodged a plan when they put in their application for a permit."

A large scheme is announced as being in preparation by Alderman Lavallée, chairman of the Annexation Committee. This is no less than a project to have an avenue laid out 300 ft. wide and 35 miles long, extending from Bout de l'isle to St. Ann's and traversing the axis of Montreal Island with building lots 300 feet deep on each side. The success of the scheme to depend on the sale of these lots. The scheme is a magnificent one but the present fashion when any one wants a lot in the country is to have one by the lake or riverside, and there does exist at present all around the island not indeed a 300 feet avenue but at any rate the best made and most delightful road in these parts. Three hundred feet wide is splendid but is it a really handy width?

Another scheme, which seems more likely to take practicable shape within measurable time, is that of the establishment of another amusement park by the Dominion Park Co. at Longue Pointe, which it is hoped to open by the 24th of May next.

It is now announced that the work of demolishing the Windsor Hall will be commenced about the middle of March next. This is to make way for the great ex-

tensions to the Windsor Hotel. For this Messrs. H. J. Hardenbergh & Bradford L. Gilbert, of New York, are named as architects.

The new armory for the Royal Scots is now well under way and the work is being pushed forward with great activity. Messrs. Finlay & Spence are the architects.

CONCORDIA SALUS.

THE SKETCH CLUB P. Q. A. A.

An exhibition of measured drawings was held, in connection with the above club, on the 15th of November. The drawings were made in competition for a prize of \$40 offered to the member who could produce the best evidences of study of the old architectural work in the Province of Quebec or the Eastern Provinces. About fifty drawings were exhibited by six members of the Club. Prof. Nobbs who had offered the prize criticised the work done and announced the award. The prize he said had been well earned by Mr. D. Hardie, who with twenty-three drawings had given evidence of praiseworthy zeal, and whose drawings themselves testified that their author had in the course of the work made a distinct advance in draughtsmanship. Other students submitted smaller quantity of work but in several cases which he called attention to had produced drawings of a superior draughtsmanship. He would like he said to present a second prize, but had not been able to make up his mind to which of the competitors it should be awarded. He would therefore ask the meeting to make a selection by ballot. This was done with the result that the second prize was awarded to Mr. J. Roxburgh Smith for his exceedingly well drawn set of six drawings. Amongst the buildings illustrated by the exhibition were the Arts Building of McGill University, the Seminary of St. Sulpice, the Churches of Notre Dame de Pitié and Notre Dame des Anges, besides a number of the old houses of Montreal and the vicinity.

On Wednesday, 22nd November the weekly meeting of the Club was occupied with a sketch design competition under Prof. Nobbs' direction. The subject set was "A Wall-Fountain in a city, the cost to be \$100 dollars" the time limit for the competition was 1½ hrs. At the meeting of 13th December the first place was adjudged to Mr. A. J. King. At the meeting of November 29th, a letter was read from the secretary of the P.Q.A.A. announcing that the Association offered \$25 towards a prize in the monthly competitions. Votes of thanks were accorded to the P. Q. A. A. for their generosity, and to Prof. Nobbs for the prizes he had given and the work he had done in connection with the measured drawings competition. The designs in the first monthly competition, six in number, were then exhibited and criticised in detail by Mr. W. S. Maxwell, the subject was an "Architect's Club". The first three competitors were placed as follows: 1st A. J. King, 2nd G. D. Ritchie, 3rd Louis Labelle.

The lecturer of the evening, Mr. William Haldane, then proceeded to give a review of the work by J. A. Gotch on the "Early Renaissance in England." The work was analyzed chapter by chapter, and a number of lantern slides further illustrated the subject.

On the 6th of December the Club listened to a charming discourse by Mr. Jos. Venne on the "Gothic Art of France." Mr. Venne said he had proposed as his subject the title announced in the notices sent out

by the Club, "An Excursion in the Library," with the intention of following out an idea that had occurred to him some time ago when, in looking over the volumes in the library, he had in imagination renewed so many delightful acquaintances, heard again the still youthful voices of men whose names had now stood long among the standard authorities. In the actual preparation of this paper, however, he had been fascinated by one volume in particular, which, with its stores of information and delightful illustrations lying in its quiet corner of the library, reminded him of a cobweb covered bottle of champagne. This book was L'Art Gothique by Louis Gonze, and the lecturer proceeded to give a detailed appreciation of the work, dwelling at length and with enthusiasm on special points such as the Abbé Suger's share in the erection of the Cathedral of St. Denis which though not, as had at one time been claimed for it, the starting point of Gothic Architecture was at any rate a capital document in the history of its early development. The analytical method of Jean Lefevre Pontalis for determining the chronological sequence of buildings in circumscribed districts was explained. It was shown how the advance in sculpture kept pace with the advance of gothic construction, how great and lasting was the achievement of the great cathedral builders of the end of the 12th century.

In conclusion Mr. Venne described the album of Villard de Honnecourt, a traveller of extensive accomplishments, who traversed France from north to west in the years 1243-45 and whose sketch-book is preserved in Paris at the present day. This with the treatise on the crafts of his day by Theophilus, a monk of the twelfth century, form the most important records we have of mediaeval technical processes.

MONTREAL BUILDERS' EXCHANGE ANNUAL BANQUET.

The Exchange and their guests, numbering altogether 160, met in the banqueting-room of the Place Viger Hotel on Dec. 7, and carried out a dinner according to the following specification.

SPECIFICATIONS of Materials to be supplied and labor to be furnished at the Annual Banquet of the Builders' Exchange,
Held at Place Viger Hotel, Thursday Evening,
December 7th, 1905.

FOUNDATIONS—Oysters, malpeques on the half-shell. To be bedded on an undisturbed stomach.

GROUTING—Soup. Consommé à la Princesse. To be well mixed in proper proportion, and ladled into position.

COURSING—Fish. British Columbia Salmon, Pommes Rachel. To be of a rich portage entry color.

BOND TIMBERS—Cutlets of Sweetbreads à la Victoria.

JOISTING—Bread and Butter Rolls. To be laid on bond timbers and properly bridged, and to be covered diagonally with Butter (nut), knots less than 1½" allowed. Hair joints will not be required in this flooring.

JOINTS—Roast Young Turkey. Properly trussed and braced and strapped at angles with ½" × 3" Cranberry Sauce straps.

Ribs of Beef au jus. To be laid up and neatly pointed with Horse-radish, with not more than six joints in 12".

Note—Carving to be executed by experienced workmen, and to detail.

PLASTERING—Mashed Potatoes. Best 3-coat work, corners to be neatly rounded.

Brussels Sprouts au Beurre. French Green Peas.

ROOFING—Material to be Haunch of Venison, made secure with good roofing composition of Red Currant Jelly. Water Cress. To be rendered weatherproof by a thorough application of best mastic(ation).

French Lettuce Salad, French Dressing.

DESSERT.

TRIM—Unless where otherwise specified, to be clear pine, spoon cleaned, and principal rooms to be for enamel finish a nice cream. (Harlequin Ice cream).

HEARTHES—To be of assorted Cakes and Wafers with a border Bon-Bons and Chocolates.

HARDWARE—Except bolts (Nuts and Raisins) to be supplied by proprietor, but put in place by contractor.

DECORATIONS—The dining room to be frescoed with Apples, Oranges and Bananas.

GLAZING—To be best cut glass lemon(ade) color. Any glass of other than this color brought on the job will be entirely at contractors' risk.

TILING—To be best brown glazed Spanish (T and Coffee) make of tiles, finishing at ridge with tooth pick ridge-roll to special detail.

EXTRAS—Are to be paid for when ordered. G. H. Mumm & Co., Extra Dry.

Note—This work must be strictly carried out according to details, which will be supplied by architect, after the completion of work.

This however was not the whole business of the evening. A toast list followed and speeches by Mr. N. T. Gagnon, the President, Mr. E. M. Roberts, the Vice-President, by Messrs. J. W. Hughes, W. E. Doran, Ex-Ald. Charpentier, C. H. Catelli, Vice-President of the Chambre de Commerce, James Simpson, G. H. Hood, John S. Archibald, President of the the Province of Quebec Association of Architects, Professor Percy S. Nobbs of McGill University, Messrs. Joseph, J. H. Lauer Secretary of the Exchange, George Hadrill on behalf of the Board of Trade, J. W. Arcand, Secretary of the Painter's Association, J. Thibault, President of the Plumbers' Association, J. Lefebvre, President of the Plasterers' Association, John Duthie, for the Granite and Marble Employers, and W. B. Shaw, for the Electrical Association.

Between the toasts there was music; Songs by Messrs. F. H. Cowen, D. McGill and J. Penman; Concertina selections by Mr. Gray, and violin solos by Owen Page.

SYNOPSIS OF ADDRESS BY J. S. ARCHIBALD IN REPLY TO TOAST OF "PROVINCE OF QUEBEC ASSOCIATION OF ARCHITECTS."

After thanking Builders' Exchange for heartiness displayed in the drinking of the toast, which spoke well for the happy relationship existing between the two bodies, Mr. Archibald pointed out the duty which all incorporated bodies and associations owed to the public and public interests, such duty to the public interests must be kept more strongly in view than the individual benefit to be derived by the units composing such Associations. The speaker questioned very much whether we were all recognizing that duty and living up to its dictates. Whilst something has been done, much more remains to be done.

"One question calling for immediate attention is the technical education of a mechanic. Very little is being done in this respect. He is being allowed to pick up a knowledge of his trade, under cramping influences. I recognize with pleasure the work being done by the Provincial Government in this respect, but this should only be an impetus to urge us on to better things. It is necessary for the healthy development of the young man that he receive a training independent of that which he receives under an employer."

"Workshop influences do not conduce to the highest development of man; there being industrial as well as economic reasons which make it impossible to expect the employer to give his best attention to the progress of the apprentice."

Mr. Archibald considered it was the duty of the Government to assist the movement in a stronger manner. "It is the duty of the state to foster and develop all interests which make towards progress and prosperity. The government has already recognized that duty in the elementary and secondary education of the young. The speaker called for the combined action of the government, the city and all corporations who would benefit from a better condition of affairs, so that each and all might take their share of the work to be done in order to place at the disposal of our young men, means whereby they may attain to high position in the vocations they select."

The speaker next touched on the question of fire insurance and the high rates being charged in an city, and spoke as follows:—

"Discussion is ripe in these days respecting the necessity for larger water mains, increased water

pressure, and additional fire-fighting appliance. The Underwriters are fighting with the city and vice versa. It is the duty of those of us whose daily occupation it is to erect those structures which are at the bottom of the whole trouble, to agitate for an improvement in these conditions which at present lend themselves as a cloak to the Insurance Co's."

"What is the use of crying for such improvements in our water and fire fighting services when a man can erect any old fire trap he likes in a city; when a man can erect on Notre Dame Street, right in the heart of our city, a building three stories high the front of which is constructed entirely of wood and covered with galvanized iron. In that building we have a standing monument to the inadequacy of our building bye-laws. These building bye-laws are at the root of the whole question. Such buildings should be made impossible. The building inspector was appealed to in this matter but he quotes the bye-laws which permit the erection of such a building 'covered with uncombustible material.' These bye-laws must be completely overhauled and remodelled. The P.Q.A.A. have been appealing to the City Council for such a remodelling but with very little success so far. We also claim that any amendments to the building bye-laws should be submitted to the Association before placing them before Council. We have succeeded in having this principle adopted, in part, by the Fire and Light Committee only 'last week.' These bye-laws must be improved along fire retarding lines and all our influences must be brought to bear at the proper quarter, to gain this much desired end.

"So far so good as regards the City's duty in the matter, now as regards the Underwriters. Improved conditions in the building bye-laws are all very good, but that is not sufficient, something must be done on the other side.

"At present the Insurance Companies do not encourage the erection of good fire resisting buildings in a city. For them to plead building bye-laws is beside the question, they should be in the van, encouraging by means of adequate reduction in rates, the erection of buildings according to fire resisting methods.

"This is a matter of fact world and with little room for sentiment and tradition. Architecture is a nice word for the university, but in everyday life it means the materialistic investment of filthy lucre. Utility, economy and profit are the watchwords.

"The first duty an architect is called upon to fulfil is to prove to his hesitating client that the money he intends to invest in a building will assure him a good profit. Anything that does not lend itself to this must be eradicated. If we suggest improved methods of building we must show adequate financial compensation. About the only financial compensation we might enlarge upon is that of reduced insurance rates; but we receive very little encouragement from the Insurance Co's on that score. They (the underwriters) will tell you they have, what they dignify by the term 'specific rating.' The underwriters of Montreal don't know what 'specific rating' is, or if they do, they fail to apply their knowledge in a way to be beneficial to the community.

"They have a few general phrases which seem to them to fully particularize the component parts of a building, but they are applied in such a manner as to be useless. The fact of the matter is that specific rating in Montreal consists of the amount of influence you can bring to bear at the proper quarter in order to obtain a reduction in the prevailing rates. We must combine to compel the Insurance Companies to get into line on this matter, and this along with improved building regulations will aid considerably towards that much desired goal of lower Insurance rates and reduced fire-losses.

"Both tasks are large but for that very reason should be inviting. Let us all take up our responsibilities and duties as members of associations and citizens of a city which is only now in the making. What it will be in the future, depends upon our present actions. Let no spirit of selfish aggrandisement blind our eyes to the possibilities and opportunities of the moment."

—THE—

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At the regular meeting on Nov. 22nd. the following officers were elected: President, Mr. W. J. Bolus; 1st vice-president, Mr. Jas. Phinnemore; 2nd vice-president, Mr. J. W. Mogan; sec'y-treas., Mr. Stewart N. Hughes. Executive committee, Messrs. Jas. Casey, R. Wood, Albert Philips, J. B. Thompson, H. W. Johnston and the past presidents. Auditors, Messrs. J. W. Knott, and F. H. McCausland. Trustees, Messrs. J. W. Knott, W. J. Bolus, Stewart N. Hughes, J. M. Faircloth, and H. F. McCausland.

PERSONAL.

Mr. W. N. O'Neil, of the firm of W. N. O'Neil & Co., Vancouver, B.C., is at present on a visit to Eastern Canada.

Mr. Edward Copping since his retirement from his position in the Toronto municipal department of building recently has been presented, by his friends in the municipal service, with a leather-covered arm chair and a gold headed cane. Mr. McCallum, the city architect, in making the presentation on behalf of the department, wished Mr. Copping a long enjoyment of the ease which the gift symbolized.

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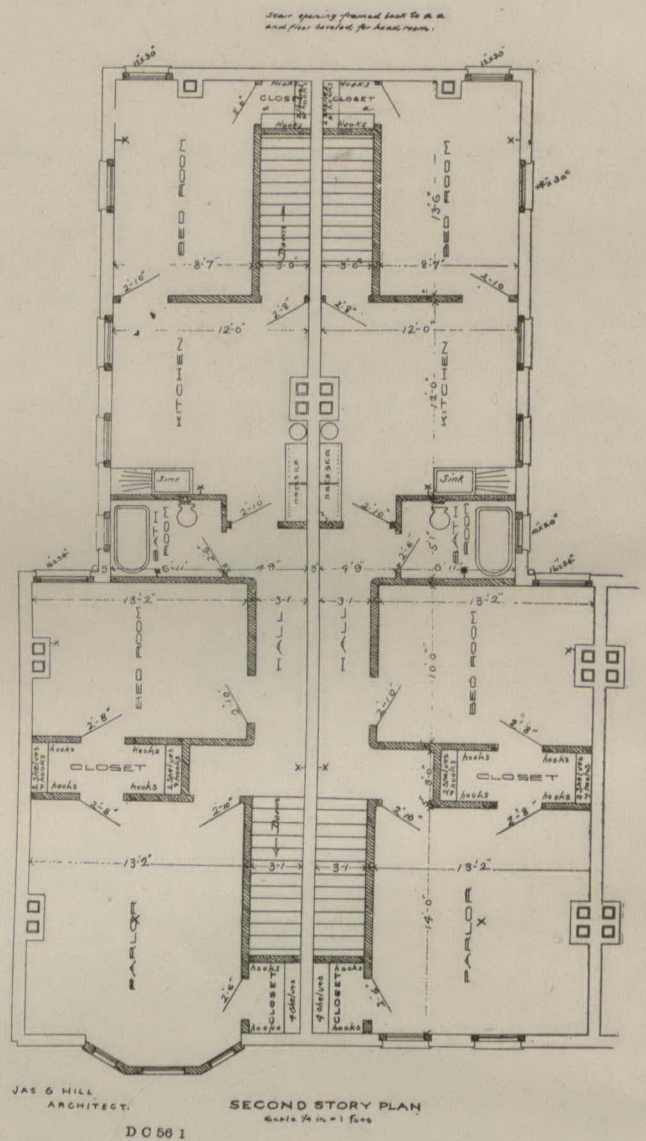
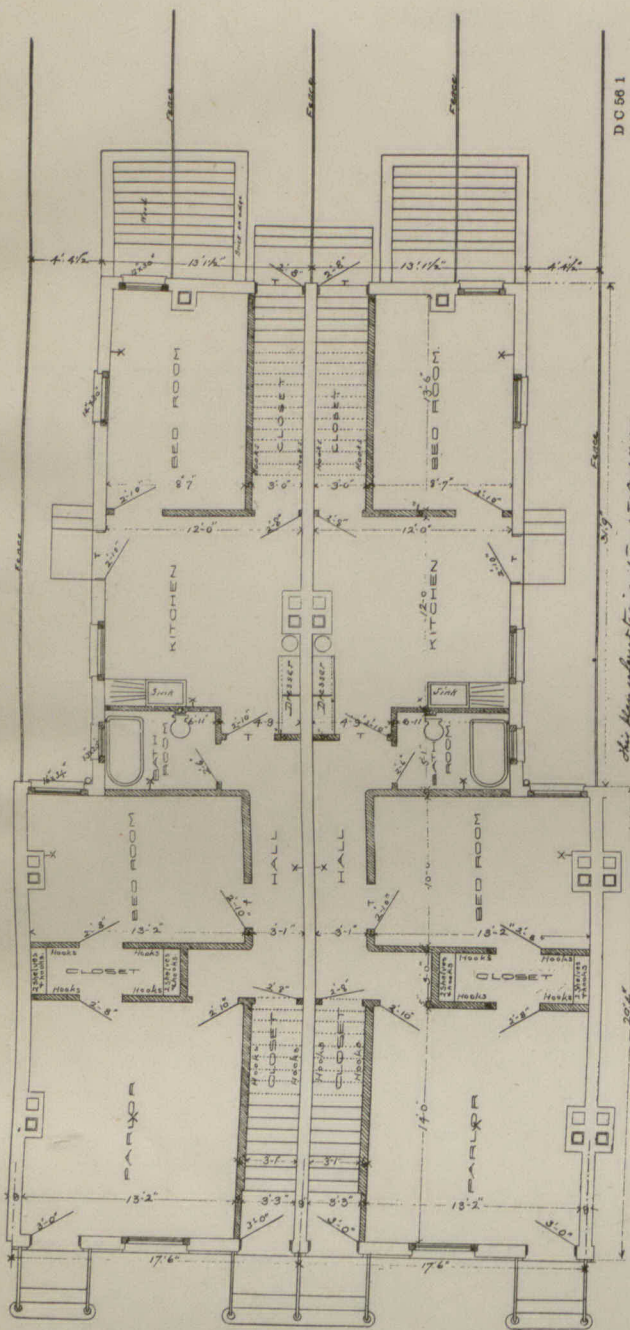
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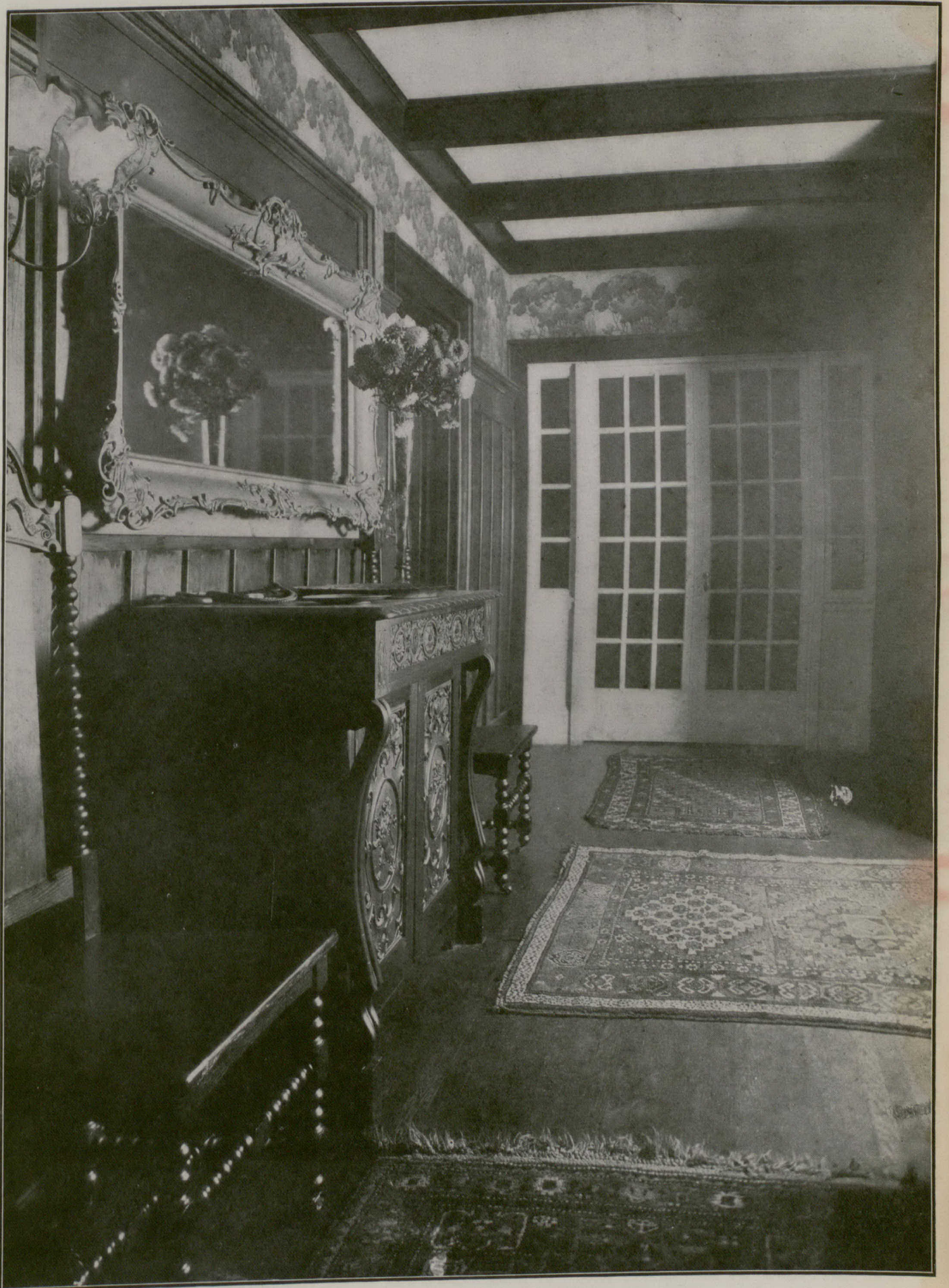
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