

PAGES

MISSING

The Canadian Architect and Builder

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ILLUSTRATIONS ON SHEETS.

No. 17 Elm Avenue, Toronto—Messrs. Chadwick & Beckett, Architects.
 View of Front.
 View of Ingle.
 Ground Floor Plan.
 First Floor Plan.
 Church of St. Peter and St. Paul, Fall River, Mass.—Messrs. Cram, Geodhue & Ferguson, Architects.
 Concrete House of Mr. Charles A. Matcham, Allentown, Pa.

ADDITIONAL ILLUSTRATIONS IN ARCHITECTS' EDITION.

Mr. Kivas Tully, I. S. O., Late Architect to the Province of Ontario.
 Side Door of Verona Cathedral.

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OUR VANCOUVER OFFICE.

The publishers of this Journal have recently established an office in Vancouver for the purpose of looking after more carefully the interests of subscribers and advertisers in British Columbia. This office is located at 536 Hastings Street, Suite 3, opposite Molson's Bank, and is in charge of Mr. G. A. Gall, who will be pleased to meet any of the friends of this Journal, and to serve their interests in any possible way.

Atelier at Columbia University

The School of Architecture at Columbia University is adopting the French method of instruction, as an addition to its course. Two architects of distinction—Mr. C. F. McKim and Mr. Thomas Hastings—have been appointed as professors to conduct an atelier for the study of architectural problems.

Statuary Marble in Hastings Co.

The Princess of Wales, when she visited Canada in 1901, was given some specimens of stones which had been got and polished by the Dominion geologist. It occurred to her, after returning to England, that a Canadian industry ought to arise where there were such stones. Eventually—it is hard to pick out the facts from the gush of an interview—a Scotch geologist, who was struck by a specimen of white marble, appears to have come out and found a hill of statuary marble. There is also sodolite (a decorative blue stone) and green and white building marbles. The ground is all bought with English money, and the purchasers promise to establish quarries for the building market. Their idea is to com-

pete with the Belgian market, for which purpose, since labor is cheap in Belgium, they must expect to produce cheaply, and perhaps Ontario will find an opportunity for beautification at small cost with her own material.

The Reduction of Niagara

The *Times*, in a special article by William C. Unwin, F.R.S., on the subject of the Niagara

water power, makes calculations which indicate that this generation is likely to see the water going over the Falls reduced to little more than half what it might be. The total utilization of power now projected amounts to 650,000 h.p. The *Times* correspondent says, "The whole of the machinery for this development may not be erected for some time, but that great confidence is felt that it will be required may be inferred from the fact that very costly head works, wheel pits and tail races are being constructed for the full projected amount of power." In view of this prospect Mr. Unwin makes the following calculations: "The mean flow of the Niagara river is about 222,000 cubic feet per second. Suppose, what is about true, that 150,000 h.p. are now daily utilized, that the mean available fall is 160 ft., and that the efficiency of the turbines is 0.75. Then the daily demand for water is 11,017 cubic feet per second, which is 5 per cent. of the mean flow, or 6¾ per cent. of the *minimum* flow. But if 650,000 h.p. are utilized the demand for water will be 47,740 cubic feet per second, or 21½ per cent. of the mean flow and 30 per cent. of the minimum flow. Obviously, if no alteration of the falls is at present perceptible,

the alteration is likely in the future to be very considerable, especially as the depth of water over the American fall is very small." But this is not all. As is pointed out in an article on the "Destruction of Niagara Falls," by Mr. A. D. Adams, in *Cassier's Magazine* for March (quoted by the *Times* correspondent), the canals are also a source of deprivation for Niagara Falls. The Chicago drainage canal and the Welland canal drain away a large quantity of water that would otherwise go over the Falls. And other canals are projected. Mr. Adams expects the total diversion of water to reach before long 67,400 cubic feet per second, and that will be 41 per cent. of the *minimum* flow of the Niagara river.

Site for the Convocation Hall, University of Toronto

Whatever one may feel about the loss of beauty at Niagara by the abstraction of water for

power purposes, there is a substantial advantage gained to the country, and, in view of the absence of smoke implied, it may even be said that beauty is served on the whole. But in the case of the ground in front of the University building the loss, if it is curtailed, will be all loss. It is not a good site for the Convocation Hall, which would be much better situated on either of the residential lots belonging to the University, which lie on College street on each side of the new building for the School of Practical Science. There the street cars would be in close connection and the building, which is not particularly in harmony with the University, would be an ornament to the street. The objection to this course, or indeed to almost any other site than that proposed, is want of money. So much money has been collected, so much is given by the Government and more is wanted merely to complete the building. A site that costs money is therefore out of the question as far as the trustees are concerned, and that is the end of the matter with them. But is it necessarily the end of the matter: There is always money for what is considered to be worth money. If the Government, if the public, cared much about the matter, the money would be forthcoming. It has always been understood that there would be no residence buildings for the University because the Government had declared that no public money would go for this purpose. But opinion grows in the direction of residences. Four are declared necessary. A private benefactor gives enough for one. A committee is formed to collect the rest, and inside of a week there is \$200,000 available. It is never money that is wanting so much as a conviction that it should be spent. The question, as regards the cost of a site for the Convocation Hall, is really this: Is the University lawn worth preserving in its present extent? We have there without doubt one of the finest buildings in America and one of the finest sites. Is it worth while to preserve it as it is, or will it be just as good reduced? It must be admitted that, as the plan of the grounds in the architect's office shows the situation, it is not absolutely fatal. A line drawn about twenty feet to the north of the Medical Building (which will be the north line of the proposed Convocation Hall) still leaves the greater part of the space, and the main building has still a noble site. But what guarantee is there that the encroachment will stop there—if, in-

deed, we can trust the Convocation Hall to keep within this limit in execution. There is already talk of making it larger, and, when the road in front of the new building is cut from the green of the lawn, the apparent area of the space will be reduced more than it is easy to imagine at present. There ought certainly to be some limit fixed now, beyond which there will be no further reduction. If the decision is clear that the Convocation Hall should not be placed there, the money to place it elsewhere ought not to be impossible. This is a matter of public concern. The trustees of the University funds, whose only duty is to make both ends meet, are not in a position of wide enough responsibility to have the continued existence of this gift from a previous generation left to their decisions from time to time. It would be fair for the Alumni Association if it raises the money to settle the immediate question to appeal to the Government to settle the question for the future.

Ownership of Architectural Drawings

An American architectural journal wants to know why an architect should insist on his ownership of the drawings. "If," it says, "he keeps them for future use, to pick shreds and bits from them for use elsewhere, he is doing himself an injury. If he succeeds in that, all spontaneity is gone from his practice; he becomes a copyist and, worst of all, of himself." A man must base his design upon something in architecture. What he ought to base it upon is the total result of experience in his own mind. To look only on good types, excluding the ignorant imitator and supposing our architect to have truly a trained mind, there are still two types of mind—what has been called by a writer in the *Saturday Review* the "scrap-book mind," which keeps its information as it got it and can produce it again the same; and the "crucible mind," into which whatever enters undergoes a change, disappearing and often forgotten as a fact and coming out as part of a product. To the first class is most likely to belong the accomplished designer, who has the styles at his fingers' ends and can work correctly and even acceptably in all. Old drawings are of less use to him no doubt than to the other type. He draws upon his well-stocked mind for every fresh effort and always finds his material there because he always uses the same material. This is readiness, but it cannot be called spontaneity. The truly spontaneous designer is the man with a crucible mind. Everything he receives undergoes a change and becomes to that extent an original product. Even his own results are submitted again to the crucible process. His mind is always working new ideas out of old; always revising and extending them in his mind; and, when it comes to drawing a new design, old drawings are the natural starting point. It is this spirit rather than the superficial facility of the accomplished designer, that leaves its mark upon the architecture of its time, either as leading or as assisting in its development. It is this that makes the work that future generations will look upon as having character and marking a period. Its designer is the true architect; the very man in fact to whom drawings are not an end but an instrument of service, and, if they are useful to him, he ought to have them.

CENTRAL HEATING.

If a general inclination towards an improvement is an indication of its near approach, central heating is not far away. Not far away, that is, for ordinary application. In special cases of grouped buildings and for parts of towns there are already numerous plants in the United States extending from a mile or so of pipe to over fifteen miles and the supply of some 500 houses.

The advantages of central heating in the way of doing away with discomforts are obvious. There will be no coal to be brought in, no ashes to be taken out, no dangerous boiler, no man to mishandle it, no dirt, no noise, no filling up the cellar with stuff that makes the parts that are free unfit for their uses. But the advantages are not only negative. Connection with a well ordered system implies heat in the doubtful days of early winter and early spring, without consideration of the policy of "starting the furnace" or "letting the furnace out." It means full heat at any hour of the day or night. It means also, if steam is the means of heating, that water for baths and household purposes may be heated from the central station. And a due humidity of air by the emission of steam could be (perhaps has been) regulated by an automatic contrivance.

As to cost—there is in the first place a saving for the consumer in boiler installation, attendance, costly coal, and perhaps fire insurance, all of which is to be reckoned as an offset to the cost of heating from a centre. And, on the side of cost, there is but one item—a great one, the street mains—which is not an actual economy for the community in the way of reduced waste of natural resources; and this economy must find its bearing upon the consumer in the end. With operations on a large scale, the cheapest kind of fuel is used, and the cost of handling it is likely to be kept down by placing the station with regard to easy supply. There is a saving in the cost of attendance, for, when the boilers needed for a district are combined in one plant, few hands comparatively are needed to operate them. And the skilful operation of coupled boilers can make savings which cannot be got out of single boilers, which have to be adapted to the coldest weather and half the time are not working economically. There must also be a saving to the community in the reduction which central heating stations would make in the aggregate cost of boiler insurance.

The great economy, however, which is to be effected by the introduction of central heating is the utilization of exhaust steam. The use of steam for the production of power means the generation of nearly ten times as many heat units as can be converted to mechanical energy. That is to say, nearly 90 per cent. of the steam generated is discharged from the exhaust pipe. Railway and lighting companies throw away in this manner heat which, if it were applied, would soon pay for the first cost of laying street mains by means of which to use it and make it profitable.

It follows that the economical application of central heating is in combination with the production of light and power. Whatever may be the doubt about the safety as an investment of a central heat-

ing plant which stands alone, there seems to be no doubt whatever that as a by-product, utilizing steam heat that would otherwise be wasted, it is a safe "proposition."

The more comprehensive the combination the better. Power and heat or lighting and heat are each better than power alone or lighting alone; but the combination of power and lighting and heat in one station is better still. All concentration for one thing, reduces personal attendance, and it increases the opportunity of using economizers and superheaters which are more applicable to large and steady running plants than to small plants which run unevenly. But there is another and a large field of economy opened up by the manner in which the separate functions of a combination play into each other's hands. There will often, for instance, be a coincidence in the periods of high requirements of power or lighting (and therefore of much generation of steam) and the periods when heat is especially wanted. Thus the season of maximum light requirement is also the season for heat supply; and the heavy morning demands for heat correspond with the "peak-load" periods of an electric railway.

The question as to the form of heating seemed to be rather in favor of steam before the issue recently by Mr. Bernard Green, superintendent of the Library of Congress, assisted by Prof. S. Homer Woodbridge, of a report upon a central station for power and heating for the thirteen existing and projected Government buildings on the Mall and in the vicinity of the White House. This report charges heavily in favour of hot water.

The choice of system depends rather upon the preponderance of advantage than the absence of disadvantage in either system. Both have objections which must be met, and the American District Steam Company, of Lockport, N.Y., who have put in a large number of plants, claim (in a pamphlet printed four years ago) to have met some of the principal objections to steam which are stated in the report of Messrs. Green and Woodbridge. These objections are in the way of difficult maintenance due to expansion strains, corrosive, condensation, etc. These it is possible for ingenuity to meet. The objection to hot water is the water itself, and it is difficult to get over the pressure of water raised to a height, the force of its expansion when freezing, and its determination to leak if it can and to find its way downstairs without making any noise about it. These objections are of less importance in public buildings which are in the charge of skilled attendants night and day. And for residences heated by an individual plant these are objections of less importance than the difficulty of managing steam without a skilled attendant, and the danger of mismanagement. But when the boiler is not in the householder's hands the balance of advantage to him seems to be in favour of steam.

Apart, however, from the care of having a destructive agent like water continually racing through the house within confining walls from which a pin-hole would constitute a means of escape, the case for hot water, in the report of Messrs. Green and Woodbridge, is very strong.

They propose to drive water through the pipes

with centrifugal pumps at such a speed that the water, which will be sent out at a temperature of 150 degrees will only lose 30 degrees in the course of its circuit. With a temperature thus varying little and a pressure nearly constant, there will be little strain in the pipes; and, if the system is reasonably tight and the same body of water is continuously used, there should be no corrosion. The system should last and the heating promises to be equable.

MR. KIVAS TULLY.

Mr. Kivas Tully, late architect to the Government of the Province of Ontario, died on April 24th last in the 86th year of his age. Mr. Tully was an Irishman, the son of an officer in the Royal Navy, Commander John P. Tully. He was born in 1820 in Queen's county, and studied his professions (he was architect, surveyor and engineer) in Limerick. He was at first engaged in Limerick under Wilkinson, in the erection of public buildings, but in 1844, at the age of 24, came to Toronto and opened an office. He continued to reside in Toronto for the remainder of his life, but his work, in the days of his private practice, extended to the other towns of the province. He built the Town Hall of St. Catharines, the Anglican Church at Thorold, Victoria Hall and S. Peter's Church at Cobourg, besides houses in these and other places. In Toronto the old Custom House, the old Bank of Montreal, and the old Western Assurance Building, were his work, and, while still in private practice, he built for the Government the wings of the Lunatic Asylum. His most conspicuous piece of work, however, was Trinity College, Toronto. The front, with a short residential wing, was all that was completed of the original design, which is shown in a perspective drawing which still exists, as extending to about the same length on the west side as on the front, and equally ornate. The intention was to ultimately enclose a quadrangle. The requisite amount of building has in fact been accomplished in the course of time, but the different efforts have not been connected, and the building is now in the form of an E. The perspective drawing shows a chapel with a spire, situated apart, to the south-east of the building, but clear of the facade. There is also shown a stone retaining wall for the terrace, the absence of which in execution was always a source of regret to Mr. Tully. Its cost at the time of building would have been only £500.

When the Government of the Province of Ontario was constructed, just before Confederation, Mr. Tully was appointed architect and engineer. The offices were afterwards separated and Mr. Tully became architect, which position he filled until 1896, his 76th year. He then retired, but remained in the service of the Province, as consulting architect, until his death.

Some of the principal provincial buildings carried out under his direction were: The Central Prison, Toronto; Asylums in London, Hamilton, Brockville and Mimico; Institutes for the Deaf and Dumb at Brantford and Belleville; the Mercer Institute, Toronto.

Mr. Tully's work was not limited by his duties as Provincial architect. He was also, from the year 1852 until his death, engineer to the Board of Har-

bour Commissioners, and all works done in Toronto harbour by the commissioners were done under his direction.

He was frequently consulted on other matters. He was associated with Mr. McAlpine in 1887 in a report on the drainage of the City of Toronto; with Captain Eades in a report on the preservation of Toronto harbour; with Captain Eades again in a report on the proposed Toronto and Georgian Bay Ship Railway. He had previously made the requisite surveys for a proposed Georgian Bay Ship Canal, and an interesting model, made by him, of the portion of the Province through which the canal would have passed, has been exhibited in the Toronto Public Library.

Mr. Tully held high rank as a Freemason, and at his funeral, which was of a public character, the Masonic order took charge of the service at St. James' Cemetery.

He was one of the charter members of the Canadian Institute. In his earlier days he took part in municipal affairs in Toronto as School Trustee, Councilman and Alderman. In 1894 he was a delegate to the Deep Waterways Commission.

In recognition of public services Mr. Tully, in 1903, received the Imperial Service Order from the King.

Mrs. Tully, who was a daughter of Lt.-Col. Strickland, of Lakefield, died in 1883. There are two surviving daughters, Miss Louise Beresford Tully and Miss Sidney Strickland Tully.

HUMIDITY IN HEATED HOUSES.

Humidity in heated houses has been the subject of observations during the past year by Prof. R. C. Carpenter, of Cornell University, Ithaca, N. Y. The observations were made in his residence, which is heated by direct steam radiation, according to the Engineering News. He found that the humidity of the air in the house during the first half of the present winter ranged from 18 per cent. to 35 per cent., averaging, perhaps, close to 25 per cent. The humidity of the outside air during the same period ranged from 60 to 80 per cent., averaging about 70 per cent. As Prof. Carpenter says, the observations show that the air in his house is extremely dry, probably drier than that in most deserts. These results are identical with results of similar observations made by Dr. H. M. Smith, of New York City, some years ago and reported in a paper read before the Brooklyn Medical Society. Dr. Smith found that in an ordinary heated house the humidity through the winter of 1902 to 1903 was 24 to 30 per cent., while in the same period the average humidity of the outside air was about 73 per cent. He also made an experiment by keeping two adjoining rooms in a different moisture condition, one being at the normal heated house humidity, while the other by artificial moistening had its humidity maintained at about 60 per cent., which Dr. Smith calls "proper degree of humidity." The room with greater moisture was moreover, maintained at a slightly lower temperature, 65 to 68 degrees Fahrenheit, than the dry room, which was kept heated to 72 degrees Fahrenheit, its humidity being about 30 per cent. By getting opinions on the relative temperatures or degrees of comfort of the two rooms from various visitors who were told nothing of the experiment, Dr. Smith found that the room with greater moisture was estimated to be at least 2 degrees warmer than the dry room. He concluded from his experiments that with a proper degree of moisture, say 60 per cent., a room temperature of 65 degrees Fahrenheit is comfortable, 68 degrees is warm and 70 degrees is rather too warm. With rooms as dry as heated houses ordinarily are in winter a temperature of 72 to 73 degrees Fahrenheit is none too warm, and even this always leaves the impression of drafts of air.

OUR ILLUSTRATIONS.

PORTRAIT OF THE LATE MR. KIVAS TULLY, ARCHITECT
TO THE PROVINCE OF ONTARIO.

NO. 17 ELM AVENUE, TORONTO—MESSRS. CHADWICK &
BECKETT, ARCHITECTS.

This house faces north and has its rooms, which seek the sun, and the conservatory and verandah on the inner side of the lot. The front towards the north and the street is, on the other hand, not expansive but decidedly reserved. Although there is a good deal of light the windows are so grouped that there is a considerable breadth of wall. The projection of the oriel from the brick wall, with its solid support of brick, its invisible roof, and the neighbourhood of the plain chimney, is a study in the preservation of breadth. The interpenetration of wall and window surfaces, where the chimney crosses the mullioned windows of the attic, is interesting also. It has a refining effect, analogous to the landscape painter's device of letting a white rabbit run into his mass of shadow, followed by a dog in the sunshine, thus weaving the two masses together and keeping breadth from becoming crudeness.

CONCRETE HOUSE FOR MR. CHARLES A. MATCHAM.

Mr. Matcham, manager of the Lehigh Portland Cement Co., has built for himself a concrete house which has outside dimensions of 58 ft. by 55 ft., including the porch and verandahs. The walls are 15 in. thick for the first foot and 13 in. from that point to the roof. The composition of the concrete was one part cement, four parts sand and seven parts stone. The windows and door frames were set as the concrete work progressed. The hall floors, 16 x 35 and 8 x 15 ft. are of concrete and expanded metal; the floor is 5 in. thick laid on 12 in. by 17 ft. beams, set 8 ft. apart. These concrete floors were finished off with cement and tile bordering. Both roofs and floors of the porches and verandahs are of concrete and expanded metal. The roofs have a span of 12 ft.

The expanded metal was of 2-in. mesh, $\frac{1}{8}$ -in. thick. It was laid on the boards set to hold the concrete. To the expanded metal were fastened some small channels 1 in. deep and 2 ft. apart. The concrete was tamped into the meshes and around the channels and made 4 in. thick.

The walls and arches are reinforced with iron rods, the walls having $\frac{1}{4}$ -in. rods set vertically and horizontally about 18 in. apart; and over the windows and porch openings $\frac{1}{2}$ -in. rods are laid in the concrete.

The columns and urns were cast in concrete in a wood mould and finished off with the house.

The finishing process consisted in giving the rough concrete, as it was left when the framing was removed, a coat for the sake of smoothness and colour. Mr. Matcham, as a result of his experience, recommends a coat composed of one part cement, one part lime, and five or six parts of white or yellow sand. When a reasonably wet concrete is used, Mr. Matcham thinks such a house might be plastered on the solid wall. A dry concrete would be less trustworthy.

As to the cost of construction the following ac-

count is given: "There were 400 cu. yd. of concrete in the walls and floors of the house, and taking into consideration the carpenter work, setting up framing, setting doors and window frames, and joists as the work progressed, the common labor, cement, sand and stone, totaled up to \$2,600, which would make the concrete cost \$6.50 per yard. Ordinary brick houses, with pressed brick face, cost from \$10 to \$12 per cubic yard.

In considering the cubic yards of concrete in this house, the hall and porch floors and roofs are figured in. If these had been figured separately, the main walls of the house would cost less per cubic yard, and, of course, the floors and roofs more, and it must further be taken into consideration no further carpentering was needed for roofing or flooring or slaters or painters, as would be necessary for a brick building. The cost of repairs to such a house are also brought down to a minimum.

The following material was used to a cubic yard of concrete: 320 lb. of cement, 950 lb. of sand, 2,560 lb. of crushed stone, 290 lb. of water; total, 4,120 lb. The proportions were about one part cement, three parts sand and eight parts stone."

SIDE DOOR, VERONA CATHEDRAL.

The thing which at once attracts the eye in this entrance is the combination of brick and marble. Verona marble is slightly red and takes the edge off the contrast with red bricks. Time, however, does this for other marbles. In Italy the combination of brick and marble is usually irregular and seldom complete. It stops suddenly at half height without apparent reason, or it occurs only partially in a building. Here there is intentional irregularity evident in the courses on the right, where the brickwork alternates three and four courses. Sometimes there is a regular number of courses of brick between marble courses of varying height; as if pieces of marble of equal height had been assembled to make a course. Marble can be banded throughout a building without there being too much of it, as is evidenced by the cathedral of Siena, which is finished in the interior throughout with bands of ivory white and dark green marble, and is one of the most impressive interiors in Italy. But the indeterminateness of the colour banding on the exteriors—rather like the uncertain definition of the markings of animals—is always a source of interest. The most striking point, however, in this illustration is the way in which the doorway has been made a feature in scale with the building by the application of a portal by means of which a 9-ft. doorway becomes a 30-ft. entrance.

CHURCH OF ST. PETER AND ST. PAUL, FALL RIVER, MASS.
MESSRS. CRAM, GOODHUE & FERGUSON, ARCHITECTS.

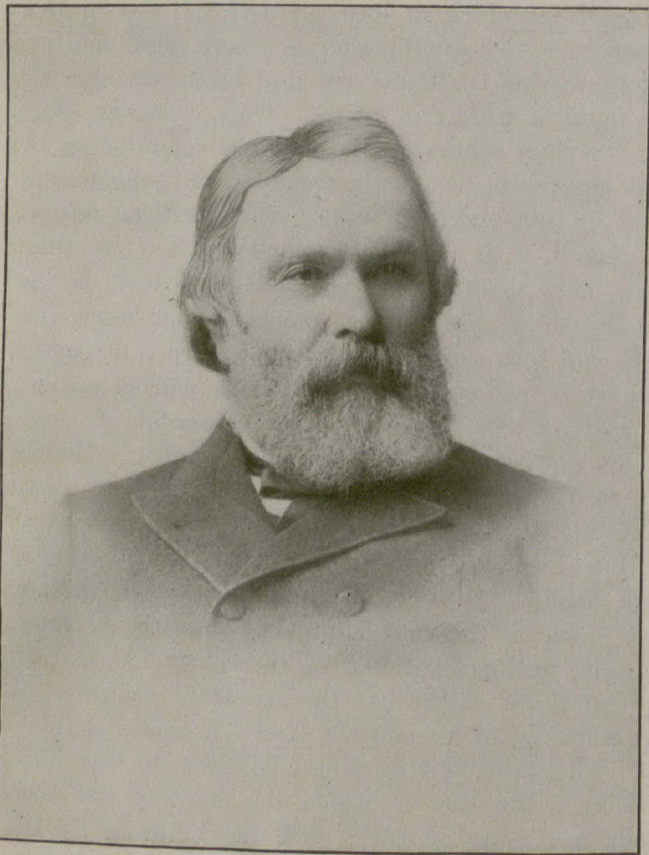
This is an interesting piece of Renaissance detail from a firm usually understood to be devoted to Gothic for church work. The style, founded on that of the spacious times of Queen Elizabeth, is much more congruous with American life than either a mediæval style or a rigid following of the Roman orders. It is a wonder that the architects of the United States have not been attracted by the freedom of the English Renaissance which, in the hands of the present generation of architects, has more

vitality and freedom than before the Gothic revival, and in its application to new problems, is used with better taste than the French Renaissance is used in France.

MR. JOSEPH McCausland.

Mr. Joseph McCausland—who was born on February 10th, 1828 and died on May 3rd, 1905—was a north of Ireland man by birth, but came to Toronto as a child, 7 years old, and lived in Toronto for 70 years. At 18 years, nearly 60 years ago, he had founded the business which still bears his name, and for 55 years or more was actively engaged in carrying it on. The other side of his life, which was apparent to other people, was of the same steady character. He was for 60 years a member of the same Methodist congregation and prominent in its works.

The capacity to carry on business successfully is too often associated in our minds with rapacious qualities, which sometimes excite admiration by their energy but of which we cannot at the bottom of our minds approve. It is satisfactory therefore to be able to record that Mr. McCausland's distinguishing characteristics, in the ripe age to which he had attained when the



THE LATE MR. JOSEPH McCAUSLAND.

present generation of architects were accustomed to meet him, were uprightness and simplicity of mind.

The house-painting and decorating business, founded by Mr. McCausland is continued by his second son, Mr. Frank McCausland. The eldest son, Mr. Robert McCausland, was specially trained to conduct the stained glass department, and has established a separate business of this kind under his own name.

Mr. McCausland left four other children, all resident in Toronto: the Rev. Harold McCausland, who is a clergyman of the Church of England, and three daughters, Mrs. Boyce Thompson, Mrs. Charles Parsons and Mrs. J. Albert Sutcliffe.

MAJOR HENRY A. GRAY.

Major Gray's death in his 62nd year was due to over-exposure while on a recent visit of inspection of the Dominion Government power concessions at Fort Frances. Pneumonia developed, and he died about two weeks afterwards, on May 23rd, at his residence in Toronto.



THE LATE MAJOR HENRY A. GRAY.

Although distinctively an engineer and, for the last twenty seven years, occupying a conspicuous position in that profession, as engineer in charge of the public works of Canada, Major Gray has also contributed some important works to the architecture of the country. His principal work of this kind was in Nova Scotia—a college at Memramcook and a large Gothic church at Truro. He was a Roman Catholic and was consulted in the erection of several convents and churches.

REVIEW.

PROPERTIES OF STEEL SECTIONS. By John C. Sample, New York, McGraw Publishing Company. Price \$3.00, net. The purpose of this book is to supply for built structural steel members the same kind of information that is given by the hand books and tables of the rolling mills companies for simple members. The tables were originally designed by the author for his own use as designer for a structural steel plant. Finding them useful he extended them to cover the ordinary members used by engineers and architects. It has not been considered to be within the scope of the work to treat the subjects involved from a theoretical standpoint. Only sufficient text is presented to explain the application of the tables. The author says, in the preface; "All values have been calculated and checked independently, and may be relied upon as correct." The book fills a space in technical literature hitherto vacant.

BUILDING TRADES DEMANDS IN OTTAWA.

Building operations in Ottawa may suffer a severe setback this spring unless the differences between the building trades unions and their employers, the contractors, are speedily settled. The Bricklayers' Union have made demand on the secretary of the Contractors' Association for an increase of ten cents per hour from 42 to 52 cents. To this demand the contractors will offer an increase of three cents, or 45 cents per hour. The stonemasons have also demanded higher wages.

SOME NOTES ON A FLYING TRIP TO WASHINGTON, BALTIMORE AND PHILADELPHIA.

BY EDMUND BURKE.

WASHINGTON.

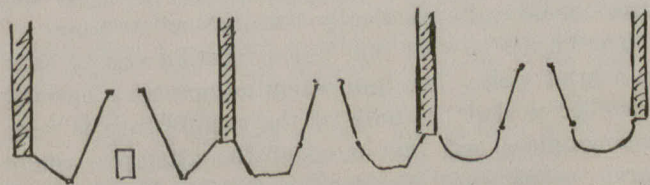
From the prosaic narrow streets of Toronto to the broad avenues of Washington, with their interesting perspectives and vistas is as great a change, artistically speaking, as was the change from a wintry spring to the mildness of early summer with blossoming trees and shrubs, and flower-decked gardens and squares.

Going, fresh from the study of Toronto's plan, with which the O. A. A. Committee is now wrestling, I was doubly interested in the much-lauded plan of Washington.

I was, first of all, struck by the great scale on which the avenues and squares are laid out, the area devoted to each being greater in proportion than that of any other city in the world.

The Capitol, of course, dominates the city and the principal avenues radiate fan-shape from it as a centre. Most of the streets are laid out at right angles with the Capitol, the result being numerous acute angled intersections with the avenues—possibly too many—but as most of the buildings are kept well back from the street line, but few narrow, wedge-shaped structures are seen.

The very wide sidewalks in the business sections, with an apparent reservation on which only bay windows, shop fronts and steps are permitted to encroach, has resulted in a curious competition in the show windows of the stores, resulting in the greatest imaginable hodge-podge, which is not altogether architectural in effect. Here are some of the treatments.



The business and house architecture of the city is with a few exceptions commonplace and uninteresting. The "H. H. Richardson" house will always be interesting, and there are a few of the newer houses, old colonial in feeling, which are decidedly good, so good that one wants to go back or pass that way whenever possible, as they seem to "grow" on one.

The numerous circles at the intersections of the avenues give fine opportunity for monuments, and the opportunity has been seized with good effect in many instances, thus breaking the long vistas. If our city fathers could be transported to Washington for a week, under proper tutelage, we would find the project of improving Toronto streets much more popular than at present.

They could also get pointers and precedent for a logical and simple method of naming and numbering our streets.

The Library of Congress is one of the most important and interesting structures in the city. Money has been lavished on it—something over \$6,000,000—and while there is so much that is good one cannot

help regretting that much that is not good has been permitted to creep into the design. While the mosaic work in the lower corridors is excellent in design and quiet in tone, the decoration of the ceiling of the main hall strikes one as crude and raw in the extreme. Many of the fresco paintings are charming in motive and execution, while on the other hand much of the modelling of the architectural ornament is commonplace and monotonous. It seems almost incredible that the enormous marble columns and pilasters in the reading room, over a score in number, should be crowned by Corinthian caps of identical design, cast in plaster apparently from the same mould, and commonplace in character. Moreover, these pilasters have so many re-entering angles, each with a compressed attempt at a cap, that the result is quite a jumble of partly hidden volutes.



It seems to me that here was a magnificent opportunity for the very highest type and invention in modelling, an opportunity which was taken advantage of in the Capitol. The same evidence of hurry and lack of thought and invention are visible in other portions of the building. In some places pilasters are cut in two or jammed into return walls for the sake of uniformity of spacing, resulting in deformed capitals and a general jumble of features which betokens either ignorance or lack of study.

The mistakes are all the more inexcusable from the fact that examples of a better way are to be seen in much of the work in the Capitol on the adjoining square.

While the interior of the Capitol looks somewhat dull and quaker-like after the brilliant newness of the Library, there is a character about its detail which is satisfying and pleasing to the eye of the architect.

The older buildings, such as the Capitol, the Treasury and the Patent Office, with their great single orders seem much grander and more dignified than the newer buildings with their superimposed orders. The State, War and Navy Building, with its four superimposed orders in the central features and three on the corner pavilions, is the least satisfactory of all, unless one includes the red brick Pension Building. The story is told in Washington that the designer of the latter building was showing it to General Sherman who bluntly exclaimed that it would do for a barn. The architect then went on to explain that it was fire-proof, whereupon the outspoken soldier exclaimed, "What a pity."

Most of the other Government buildings, such as the Bureau of Engraving and Printing are devoid of architectural character.

The Corcoran Gallery of Art occupies a noble and well-designed building—by Ernest Flagg—and houses many notable pieces of sculpture, bronzes and paintings.

The Carnegie Library is also a well-designed building and well worthy a visit.

The Washington Monument impresses one on near approach chiefly by its size and simplicity, but as one journeys about the city and suburbs constantly catching glimpses of it, now through vistas of trees, now through haze or rain cloud, or again in brilliant sunshine silhouetted against a dark background, it grows in interest and impressiveness and becomes a thing of grace and elegance.

One of the most interesting studies for one who is archaeologically inclined is contained in a peculiar structure on New York avenue, designed and erected by Mr. Franklin Webster Smith. The front of the building is a reproduction of an Egyptian temple, while the interior contains what the author describes as "Ten Halls of the Ancients," consisting of full-size models of Egyptian halls, a Pompeian house a Roman taberna (or shop) a Moorish hall, a Saracenic hall, the Assyrian throne room of Sennacherib, and other halls and apartments. These halls are claimed to be faithful transcriptions of their ancient prototypes, both as to form, detail and color.

The author has a much more ambitious scheme, of which he exhibits a large model, being no less than a National Gallery for Washington which shall cover a very large site. The buildings are to be reconstructions of all the ancient styles of architecture chronologically arranged, with paintings illustrating the history and the arts of the nations, while other buildings for a Hall of Fame and galleries for American history and portraiture, presumably of modern design, would be incorporated in the group, all constituting a most complete and remarkable educational ensemble.

Mr. Smith is now an aged man, but most youthful in his ideas and feelings. He proposes to execute this gigantic scheme entirely in concrete, claiming great economy over the use of marble, stone and brick.

Mr. Smith claims to be the pioneer in the introduction of concrete in modern work, having instituted its use in the construction of the great hotels at St. Augustine, Florida, and was himself the architect of the Hotel Casa Monica and the Villa Zorayda in that city, which are built of that material.

BALTIMORE.

A hurried drive through the burnt district and a few of the residential streets, and a quick run through one of the new office and newspaper buildings left no time for a very close examination of the new structures replacing those destroyed by fire. Outside of a few high fireproof buildings, a majority of the new structures appeared to be ordinary four and five-story buildings, very commonplace in design and of ordinary joist construction, a few having the so-called mill floors. A large number have exposed steel girders and columns, and are apparently no better prepared to resist a conflagration than their predecessors. The streets in the business sections are narrower even than those in Toronto—in fact several important streets appeared to be no wider than Colborne street, a single street car line leaving barely room for one vehicle on each side, with sidewalks not more than six or seven feet in width. I understand that an appropriation of \$2,000,000 has been made for new streets in the burned district and widening others, an

opportunity which Toronto should have seized after last year's fire. An appropriation of \$1,000,000 has also been made for parks and park extensions.

PHILADELPHIA.

A more complete contrast to the generous avenues and streets of Washington than the Quaker City can scarcely be imagined.

The streets are almost entirely laid out on the prosaic "gridiron" plan, practically only one artery, Ridge avenue, running in a diagonal direction. In consequence, if one wishes to reach a distant point in this vast city, lying in a diagonal direction from his starting point, he has to travel, probably, one-third farther to reach his destination than he would have to in Washington. The journey will moreover be further complicated by the fact that owing to the narrowness of the streets but one street car track is permitted on each street, travel being limited to one direction with the return line one or perhaps two blocks away. Philadelphia thus stands even more in need of diagonal arteries than Toronto, while the problem of transportation is analagous to our own. Philadelphia is moving in the matter, and among other improvements expropriations are being made for a broad diagonal avenue beginning at the City Hall square, and extending to Fairmount Park via Logan square, one of the four squares planned and located by Penn when laying out the city.

Broad (or 14th) street is the one really wide street, and is unincumbered by tracks, and therefore a pleasant street to travel upon, being free from the din and danger of the nerve-racking trolley, though invaded by an almost continuous procession of automobiles, cabs and carriages. The City Hall sits squarely across it at the intersection of Market street and thereby robs it of some of its value as a grand avenue, its bulk being so great as to separate and disjoint the street, making it practically two distinct avenues.

The city is so vast that but a fraction can be seen in a brief visit. The impression gained by a hurried traveller is that the bulk of the architecture is very commonplace and that most of the attempts, where large means were available, have been hideous failures. One has to hunt up and down street, back and forward, to find an occasional piece of good work. This work, by a thoughtful school of architects, is thoroughly good and characteristic.

Suburban work, if Pelham may be taken as a good example, is not equal to our own Rosedale.

"Sky scrapers" are more scattered than in New York and the streets are therefore not so canyon-like.

The number of steam railways crossing and recrossing the city, passing under, across and above streets and alleys, is very noticeable.

Enormous expense has been entailed in the construction of viaducts and tunnels to enable the great trunk lines to reach the heart of the city, and immense sums have been spent in the erection of terminal stations.

Like Washington, Philadelphia is a good example of a sensible method of street numbering, but as the streets running east and west are named after trees, men and places, more time is required in familiarizing oneself with its peculiarities and geography.

MEASUREMENTS AND PRICES: THEIR RELATION TO THE MASTER PAINTER.*

It is our proper conception of, and strict adherence to, the principles which govern our system of measurements and regulation of prices, which determine our fate in the business world, and mark us either for success or for failure.

"Measurements and Prices" is the business end of the painting trade. The method by which we sell the commodities we have to market—and let the master painter be ever so good a mechanic, and be able himself to display his genius through the work of his hands, or let him be so genial and affable with his customers that it is a perfect delight to do business with him, yet if he fails to see that his measurements are correct and his prices right, his business must surely terminate in failure.

Let us take up this subject then and discuss it in the order in which it appears in the opening of the paper, and deal first with the question of measurements.

That very many there are among so-called master painters who have a very hazy conception of how to measure a job there can be no doubt, for the results of their ignorance is evidenced in the jobs which they take at prices which are only one-half their value. Many there are who never draw a rule or a tape-line over a job, or have any other well ordered system of measuring—they guess that it will take so much time and so much material to perform the contract sought and base their price on that assumption. Others there are who know how to measure, but who, if hurried, get careless, and rather than take the time to measure correctly risk a price on a hasty guess, like a worthy member of our Association did once in figuring against me. When I called his attention to the glaring discrepancy between his price and mine, in painting the outside of a pair of large houses, he admitted to me that he measured them as he rode by on his bicycle and never thought it worth his while to get off. That sparing of fifteen minutes at that time cost him forty dollars.

The master painter should be as careful of his measurements as any other business man. There are two kinds of dishonest people in the business world. First, the man who starts out to rob his customer by charging him for value not given. Such a man is soon found out by his customer and his services are not required again. The second is the man who robs himself, his family and his creditors, by giving his customer more than he is paid for because of improper measurements. This man will soon be in the hands of the assignee and be a reproach to his family and friends.

What would you think of a dry goods merchant who, when asked and paid for one yard of cloth, would cut off one and one-half yards and give it at the price of one yard? Or what would you think of the grocer who, when asked and paid for a pound of goods, gave a pound and a-half for the same money? Such a procedure, if habitual, would bring disaster to the merchant. Will it not be equally disastrous to the master painter, if he is paid for covering one yard of work, and who through ignorance or mistake covers one yard and a-half or two yards for the price of one? Let us learn to be more careful and exact in our measurements, and the results will soon be seen in increased profits and better business.

I have thought that it might well come within the scope of this paper to suggest for your discussion a few rules, even though they are old ones, that might be helpful to us in measuring our jobs.

FIRST, OUTSIDE MEASUREMENTS.—Halls: Brick or wood, measure solid, adding in openings if not too large, and cornices if plain. Where ladder or scaffold must be used, measure one yard per foot, or triple measurement.

Cornices, if dentilled, bracketed or panelled: Multiply the length by three or four times the girth, according to the judgment of the master painter.

Frames: Measure the height of the frame by from one and a half to three times the width of frame, according to the size of the glass in the windows.

Doors: If panelled, multiply the height by from one and a half to three times its girth, according to mouldings and panels.

Lattice fences: Double measurement, both sides.
Picket fences: One and one-half times measurement, each side.

Balustrades: Double measurement, each side.
Dipping shingles: Multiply by four each square to be covered.

Allow additional measurement, if the work to be done is unusually high or hazardous, or difficult to perform.

INSIDE MEASUREMENTS.—Frames and doors: Same as outside measurement.

Base boards, plain and below 1 foot, to be measured as 1 foot; if more than 1 foot, and less than 2 feet, measured as 2 feet, etc.

Picture mouldings, etc., measure as 1 foot wide.
Dado: Where panelled, multiply by two or three times, according to panels and mouldings.

Walls, painted or tinted, measure solid, not allowing for openings (unless openings be extra large when allow one-half for them).

Cornices (containing three or four mouldings, and cove-treated in different colors): Measure each separate moulding or cove as 1 foot girth; if only one color is used, measure twice its girth.

Cornices (dentilled or ornamental): Four or five times its girth.

Add extra always for stripping, preparing and sizing.

PAPERING.—It is not safe in cheaper grades of paper to figure more than seven yards to a single roll. On this basis measure thus:

Ceilings: Multiply the length by the width, and divide by 30.

Walls: Take girth the room, multiply by the height, and divide by 30; allow for openings.

For ingrain, or 30-inch papers, measure same as above, but divide by 60.

All stripping, sizing, etc., to be charged extra.

For night-work up to 12 o'clock, charge 1½ times regular price. For all night, twice regular price.

Now, this brings to me the second consideration of this paper, viz.:

PRICES.—Now, after the contractor has satisfied himself that he has before him the correct quantities and measurements of the work to be done, his next important business is to be able to set a price to these measurements, which will not merely furnish the contract, but which will realize for him a reasonable profit, above all his expenses, commensurate with the size and quality of the job.

I think an examination of the following prices will make an interesting discussion for us. Of course, in this paper I can only deal with a few of these lines.

For making the comparisons which follow, I have before me three price lists.

The first is a tariff of prices adopted by the Master Painters' Association of Toronto in 1882 (23 years ago), when current rate of wages was 18½ cents per hour.

The second is a tariff of prices adopted by the Montreal Association of Master Painters in 1903, when the current rate of wages was 20 cents per hour.

The third is a tariff of prices adopted by the Toronto Association of Master Painters in 1902, when the current rate of wages was 30 cents per hour.

Remembering the difference in the rate of wages paid, and the added cost of conducting our business as compared with 1882, note the difference in the prices which now obtain. I will give you only a few examples:

	Toronto, 1882,		Montreal, 1903,		Toronto, 1902,	
	Tariff.		Tariff.		Tariff.	
1 coat, 10c. per yard...	15c.	per yard	10c.	per yard	10c.	per yard
2 coats, 17c. per yard...	25c.	per yard	18c.	per yard	18c.	per yard
3 coats, 23c. per yard...	30c.	per yard	25c.	per yard	25c.	per yard
4 coats, 28c. per yard...	40c.	per yard	30c.	per yard	30c.	per yard

<i>Brick Work</i> —						
1 coat, 10c. per yard...	15c.	per yard	12c.	per yard	12c.	per yard
2 coats, 17c. per yard...	25c.	per yard	18c.	per yard	18c.	per yard
3 coats, 23c. per yard...	35c.	per yard	25c.	per yard	25c.	per yard

<i>Blinds</i> —						
1 coat, \$1.00 per pair..	18c.	per ft. high	75c.	per pair	75c.	per pair
2 coats, 1.50 per pair..	30c.	per ft. high	\$1.25	per pair	\$1.25	per pair
3 coats, 1.75 per pair..	40c.	per ft. high	1.50	per pair	1.50	per pair

<i>Graining and Imitations</i> (oak grain and 1 coat varnish)—						
Toronto, 1882,	Tariff.		Toronto, 1903,	Tariff.		Toronto, 1902,
30c. per yard...	70c.	per yard	35c.	per yard	35c.	per yard

<i>Other woods, add</i> —						
10c. per yard...	25c.	per yard	10c.	per yard	10c.	per yard

<i>Hardwood Finishing</i> —						
Toronto, 1882,	Tariff.		Toronto, 1903,	Tariff.		Toronto, 1902,
Not mentioned...	1.00	per yard	\$1.00	per yard	\$1.00	per yard

<i>Calcmining</i> (plain surface)—						
Toronto, 1882,	Tariff.		Toronto, 1903,	Tariff.		Toronto, 1902,
12½c. per yard	13c.	per yard	12½c.	per yard	12½c.	per yard

<i>Paperhanging</i> (common 1-edge trim)—						
Toronto, 1882,	Tariff.		Toronto, 1903,	Tariff.		Toronto, 1902,
17c. per roll...	20c.	per roll	17c.	per roll	17c.	per roll

<i>Common 2-edge trim</i> —						
20c. to 25c. per roll...	25c.	per roll	20c.	per roll	20c.	per roll

Now, sir, I could go on multiplying these examples, but I think enough has been said to convince us all that either our predecessors in Toronto or our brethren in Montreal have been, and are now, very rich, or we at present in business are not able to make a decent living, and simply manage to dodge our creditors.

What shall we do about it?

I think that we should at once take steps to advance our prices at least 25 per cent., in order that we may obtain that which properly belongs to us.

*Paper read before the Toronto Painters' and Decorators' Association on April 6th, by Mr. G. W. Knott. From *The Canadian Painter and Decorator*.

ON THE VALUE OF THE STUDY OF OLD WORK.

ADDRESS BY PROF. PERCY E. NOBBS, OF MCGILL UNIVERSITY TO THE SKETCHING CLUB OF THE PROVINCE OF QUEBEC ASSOCIATION OF ARCHITECTS.

I sometimes regret that the word "style," which is so often on our lips was ever invented. It has come to have so many meanings that much misunderstanding has arisen as to the main idea it conveys. Once upon a time people in general understood what style meant, and in those days the word had no use. As the grosser material elements of civilization developed, men ceased to regard art as an essential part of life, and soon lost the power of using art as a means of expression. Then they began to pay us architects to know what style is for them, and we are very largely responsible for the superstition that architectural character is a thing independent of men, materials and climates, of constructive principles and tradesmen's methods—in a word that architectural character is a thing imitative, irrational, deceptive—that style means fake.

Just the other day a Montreal journalist waxed eloquent on the fittings of the new turbine boat. Journalists do not make public opinion, they reflect it, and this is a fair example. I have not seen the inside of the liner in question. Certainly it contains much that is rich and rare. Possibly it is a work of art. That is not the point, however. What I wish to draw attention to is the journalist's views. He describes the splendors of smoke-room, saloon and lounge, and marvels greatly, emphasizing throughout the fact that he did not feel as if he was on a ship at all. His peroration contained this highest meed of praise—the smoke-room was like the hall of some ancient castle!

Alas, the old gods are dead. Neptune had never allowed a ship like that to sail on his blue seas. If the ship is really like an old castle inside (or more probably a new hotel) so much the worse.

And the inside of a ship may be so very beautiful with its shearing lines, curving decks and all the quaint appurtenances and neat joinery that make for naval architectural character and style.

To the man in the street style is a matter of mimicry. "Let us pretend," say the children, and the "higher gifts of imagination" at once convert the nursery chairs into a hurrying train or the dining-room table into an impregnable castle. "Let us pretend!" say their elders, and a house is covered over with Rococco detail or Francois I. dormers are reared aloft and then they go and say "So-and-so built my house in such and such a style," when such style as the house has is in reality a thing very slightly affected by the source whence the details and features are borrowed.

Still this superstition on the style question carries with it a ray of hope. It is a popular protest against the vernacular architecture of the day which is so bad. Look at any business street in any business city, say Craig street or the district round the G. T. R. station. Compare it with some old business street and note how all semblance of decency in designing

ordinary things has been thrown to the winds of fate. The positive ugliness of the great majority of city streets and country cottages is almost, nay quite criminal. There is absolutely no reason why utilitarian things should be made specially ugly—the provoking thing is that the ugliness is often put on at considerable expense. It is because our vernacular architecture, our common way of doing things is so bad that wherever some sense of elegance is desired a fake of some old style is resorted to so cheerily and with so little comprehension. This fake architecture carries with it a multitude of mean deceptions—modern antique tiles, imitation of materials, and a hundred cheap contrivances of the jerry-building fitting-mongers who call themselves "art designers" and offer "sketches and specifications free."

This brings us to our main subject of discussion to-day—the main theme of our lives as architects—vernacular architecture.

Last century saw construction revolutionized and the whole scheme of trade and craftsmanship changed. It will surely not be long before things shake down into a semblance of accepted methods which will enable building traditions again be formed. Our lack at present is not so much a want of good traditions as of any at all, and this is not likely to be remedied by the training of architects in colleges in place of the old apprenticeship system. The practice of drifting through offices for a few years without any articles of obligation between chiefs and assistants cannot be called architectural training at all. Some young fellows may get on in the world as a result of this practice, but vernacular architecture will not improve.

Vernacular architecture then is about as bad here in Canada as it is possible to imagine, and the very high achievement of some individual efforts only makes the contrast the more painful. Under present day conditions good men are sure to be found for special jobs and it is not to help these to find themselves that such organizations as the P. Q. A. A., the School of Architecture of this university or the P. Q. A. A. Sketching Club exist. It is to the improvement of the common, everyday work on back streets and suburban lanes, in the heart of the city or in the country that such corporate effort as these institutions can display must be directed.

To this end we must study old work in general, and the local old work in particular, for happily there were buildings put up in this province and down the river in the days when men yet cared about doing things decently and in order.

Let us briefly numerate the benefits derivable from the study of old work.

Firstly, it brings the student face to face with work, be it grand or simple, which is conceived in the right spirit—self-respecting work—work which does not forever play at being something other than it is—work which even at its roughest scorns to emulate what it is not, which at its finest is wondrously potent to express purpose and intention and work which at all times is a true reflection of the life to which it ministered.

Secondly, the measuring of old work (there is only one way to study it—to measure it) teaches us what

nothing else can and that which is the most important element in an architect's training—the sense of scale. Detail may be learned from a patient master or in a school of architecture, but the sense of scale can only be apprehended by scrambling about buildings with tapelines and measuring rods.

When there were no architects apart from builders the sense of scale was learnt without effort from the nature of a man's training—on the job all the time. Since paper architecture came in no designer of any note has been able to dispense with the study of old work. Brunneleschi and Rafael and all the great Italians measured the Roman remains for the sake of the detail—to attain to a technic; but of far more value to them was the ever evinced sense of scale and fine proportion which characterize their achievements and which they absorbed unawares in pursuit of scholarly detail. From this time till our own there has been but one road to the attainment of the greater architectural qualities—to measure, to measure, to measure. Three further direct advantages accrue to the draughtsman who measures:

(1) He gets practice in measuring up for alteration purposes without leaving out some important height or check measurement and learns rapid and methodical methods which are of great service to himself and his employer.

(2) He draws for the love of his subject, and so attains to sympathetic ways of rendering. A measured drawing of an old building should be more than a diagram or record. It should bare the same expression of countenance as the original. Some buildings smile, others laugh and others look tired, while pride, serenity or power are as distinctly characteristic of buildings as they are of men or women's faces and poses.

(3) The possession of a decent set of drawings is an immense aid when the time comes to go up higher. A man with a good roll of drawings under his arm need never be out of work for long.

So much for old work in general and the benefits derivable from its study. What of the local old work. The beautiful words of William Morris in appreciating the vernacular art of England are as appropriate to the work we find here around us, and I feel sure if he were familiar with the charm and quaintness of the old Quebec farms and seignories he would have written something very similar about it.

“For as was the land, such was the art of it, while folk yet troubled themselves about such things; it strove little to impress people either by pomp or ingenuity; not seldom it fell into commonplace, rarely it rose into majesty. Yet was it never oppressive, never a slave's nightmare or an insolent boast; and at its best it had an inventiveness, an individuality that grander styles have never overpassed. Its best, too, and that was in its very heart, was given as freely to the yeoman's house as to the village church; never coarse, though often rude enough, sweet, natural and unaffected, an art of peasants rather than of merchant princes or courtiers, it must be a hard heart I think that does not love it, whether a man has been born among it like ourselves, or has come wonderingly on its simplicity from all the grandeur over seas.”

(a) You will find in the local work of the seventeenth and eighteenth centuries a wholesome antidote to that eclecticism in which we are trained to-day. In an age of cheap illustration we see all the work of all peoples and all times, and as each tradition has its charms we are very apt to be led away by our admiration into the sincerer forms of flattery.

(b) When you have good local traditions always use them. They are founded on sense and experience and national temperament;—a touch of local tradition will go a long way towards giving character to a piece of simple work.

In illustration of this local character I recommend to your study the methods of such men as Lorimer and Lutyens, whose country houses always look as if they had grown and not been planted amid their surroundings. This is too large a theme to say much about here, but a glance at some old Scotch vernacular work and at some of Lorimer's new houses and at some Kent and Surrey cottages and then at some of Mr. Lutyens' work will show how local tradition should be applied to modern work wherever there is any to apply. Do not study old ways with a view to imitative faking or artificial reproduction of ancient mannerisms and effects, but to get understanding of the sweet simplicity of natural expression, which is so very much more edifying as an adjunct of life than the affectations and poses and deceptions or sheer ugliness for its own sake so characteristic of vernacular architecture to-day.

And lastly (and of all reasons this is perhaps the most cogent) let us study the old work around us because it is ours, the natural product of this bit of earth on which we live. I assure you there are the germs in the local style of a manner, which if rightly developed with loving care, would go far to make a national style possible. To that end it is necessary that a number of designers shall look at things from one standpoint and logically work on parallel lines. Individualization has gone too far and it is high time we joined forces again like the makers of the great styles and work from a common point of view. Let the old local traditions furnish us with the bond for similarly directed effort and then it may be that this little society of study may become a great force for good. Let us then cherish our traditions as sacred, hold to them with loyalty, and the result will surely be the improvement of vernacular art, the making of streets into pleasant places and the evolution of something with more character than the average architecture of the schools to-day.

IT PAYS TO EMPLOY A REPUTABLE ARCHITECT.

The Court of Civil Appeals of Texas, in the case of *White vs. Green*, 82 S. W. 329.

The defendant had employed an architect to draw plans for a building which the defendant followed in constructing the building. The plans proved defective, and the building fell, injuring the house of the plaintiff and adjoining owner. The court held that as the defendant had exercised reasonable care in employing a reputable architect, he was not liable for damages growing out of a defect in the architect's plans.

The (Baltimore) Builders' News, from which we extract the above note, suggests the probability of a sequel to this decision, which will test whether the architect's finances are equal to his reputation.

BUILDING AT WINNIPEG.

This year so far 730 building permits, covering 980 buildings, have been issued at \$3,010,800. compared with 520, aggregating \$2,403,350, last year.

THE PLANNING OF CITIES AND PUBLIC SPACES.*

Mr. John W. Simpson, in his opening remarks expressed his indebtedness to the works of Herr Stübgen, of Cologne, and Herr Camillo Sitte, of Vienna, and remarked that the artistic side of city planning had been almost entirely neglected in England; our authorities did not even realize its existence. The laying out of new streets and roads is nowadays looked upon as purely technical engineering. It was not thus that the cities were created which are still the wonder and delight of the civilized world. The Greeks in the Acropolis, the Romans in the Forum, have given us a model for all time of the way to concentrate the forces at our disposal for the beautifying of a city. Contrast the effect of such spaces, inclosed by splendid edifices and adorned with countless masterpieces of plastic and architectural art, with the forlorn bronze figure stranded on its pedestal amid a tearing stream of traffic which represents the modern idea of a public monument. The "place" of mediæval and Renaissance times, the direct descendant of the antique Forum, has been entirely ignored in our modern city plans. Granted that modern conditions render the "place" no longer necessary as a common centre of exchange and commerce, yet we may do well to examine our fathers' work and save of the artistic heritage what may be adapted to our circumstances. Exhibiting on the screen plans of various ancient "places" in Italian, German and Flemish cities, the author brought out that, despite their apparently aimless irregularity, they were in reality constructed upon definite principles. With a city we must husband our resources if we are to obtain an artistic whole. If we scatter indiscriminately the material which makes for beauty (and for our purpose this material is represented by the public buildings and monuments) it will be swallowed up in the general mass, and fail of its full effect. In the ancient "places" the statues, fountains and other monuments were placed, not in the centre of the space, but at the sides. Fountains naturally should be placed beside the beaten trackway. As Donatello's statue of Gattemala and the little column stand at the side of the entrance of the church of St. Anthony of Padua, so the obelisks and statues of the Pharaohs rose beside the doors of the temples. The ancient churches in Italy were most often engaged on one or more sides with other buildings, and the author gave several illustrations to show how this tended to produce those groups of open places which give such charm to the buildings. The inclosing of the old public "place" was an important feature and a principal element of its charm. No mere open space between streets will give it—the appearance of an unbroken frame of buildings is essential. The author's illustrations made evident two leading principles.

First, the monuments being placed at the sides, the centre of the square is left free, and the space is inclosed by a continuous frame of buildings. Next, the "place" must be proportionate in size and shape to the buildings to which it is to give value. Generally speaking, the space in front of church or other vertical composition will be found to be deep, while that before a town hall or other building whose characteristic is length is usually wide. The irregular plan of ancient "places," though not in accordance with our modern ideas of "symmetry," do not distress us in execution—they appear natural. The builders did not trouble about theoretical symmetry, but they realized in practice what actually caught the eye. The author directed special attention to the Signoria at Florence—from an architectural point of view the most remarkable square in the world. Its

form and size, the disposition of its monuments and buildings, the way in which the streets deliver into it, are all admirably studied. No effort is apparent, and the superb composition is admired without disturbing thoughts as to the causes of the beauty. Again, the plans of the Piazza di San Marco and the Piazzetta at Venice exemplify with the most refined art the principles deduced as to the placing of monuments, the freedom of the central space, the inclosed frame, the absence of geometrical regularity, and the value given to squares by their combination with others of varying form and size.

Passing on to street planning, the author referred to the theoretical systems—rectangular, radiating, or triangular, as being one and all devoid of artistic interest; nor did such a consideration enter the minds of the engineers who designed them. They had failed even to solve satisfactorily the practical problem of constructing the shortest route between any two points so as to save time in transit. In ancient towns nearly all side streets entered main thoroughfares at right angles. In the modern triangulated and radiated schemes acute angles were inevitable. Again, the ancients avoided as far as they could the delivery of several arteries of traffic at the same point. This principle was now quite neglected. Considering that the chief object of modern street planning is to save time in getting from one point to another, and not merely to construct the geometrically shortest routes between them, the author turned to the streets of Bruges and the fourteenth century in search of guiding principles, illustrating his points by the aid of diagrams. In the whole of Bruges there is hardly a street which formed an acute angle with another, nor a crossing of more than one street with one other. Where a street approached another obliquely, or threatened a complicated intersection, its line would be curved so as to avoid acute angles and confusion. Again, the principle of framing the view by inclosing it and preventing distracting perspective is carried out with as delicate an art in the plans of ancient streets as in those of open "places." The more limited the impression the more complete is its effect was the sound axiom of art which, consciously or by tradition, guided the old street builders. There is no reason, either practical or artistic, why our streets should have monotonous parallel sides. The author took as an example the characteristic little "Rue de St. Amand" at Bruges. Not only is such a varying line picturesque and advantageous to the buildings, but it affords exactly those spaces for the cab stands, telephone and fire-escape kiosks, and other constantly increasing requirements which are difficult to provide for and cause obstructions in uniformly regular streets. Violent bends are not necessary; a slight curvature or displacement of the axis line will produce the happiest effects. The concave line of frontage is the most valuable in improving the appearance of a street, and it should be broken as little as need be. In conclusion, the author asked, Is it hopeless to suppose that in time our authorities may perceive that mere pulling down, aligning, and widening of streets will never meet our traffic requirements, and that what is needed is artistic and considered planning? To the Institute students especially he commended this problem. Let them not be content to continue by mere tradition the measurement and study of the individual building and its details, important though these be. There lies a rich reward for those who will consider the combination, construction and grouping by which effect is gained; and the R. I. B. A. Prize Committee might perhaps judiciously stimulate synthetic as well as analytic investigations.

*Paper read before the Royal Institute of Architects, by Mr. G. W. Simpson.

Dr. Langrill has presented to the Board of Health of Hamilton copies of the plumbing by-laws of other cities. It was agreed that the present by-law should not be changed until a plumbing inspector should be appointed.

MONTREAL JUNIOR ARCHITECTURAL ASSOCIATION.

The members of the above met in the rooms of the P. Q. A. A., 5 Beaver Hall square, on Wednesday, April 26th, to consider the adoption of the constitution previously draughted. Mr. Cecil Burgess presided.

It was explained that since the previous meeting the Council of the P. Q. A. A. had evinced much interest in the formation of the Junior Society, and for the more complete union of all branches of the profession in the province were anxious that the juniors should place themselves in as close touch as possible with the Association. It was therefore suggested that the name of the society should be the Sketching Club of the Province of Quebec Association of Architects; that they should always have as president someone who should meet with the approval of the Council of the P. Q. A. A.; and that they should hold their meetings in the rooms of the P. Q. A. A., which would be put at their disposal free of charge. These suggestions having been incorporated in the constitution it was approved by the meeting.

The first visit of the Sketching Club took place on Saturday, April 29th, when the members, on the invitation of Prof. P. E. Nobbs, met at the library of McGill University. The architectural department of the library was examined, and tickets admitting to study there were presented to all members of the club. Prof. Nobbs then gave a short address, which we publish on another page, on the "Value of the Study of Old Work." This was illustrated by lantern slides and by a large number of examples of measured drawings which were hung around the lecture room. At the close of the address the collections of architectural casts and photographs were examined. The Sketching Club proposes to work during the summer on the measuring of old and interesting work in the city and neighborhood of Montreal, and a prize of \$40 in books on architecture has been offered by Prof. Nobbs for the best set of drawings of such work.

CONCORDIA SALUS.

MONTREAL BUILDERS' EXCHANGE.

The activity in the building trade in this city, noticed in the last issue of the CANADIAN ARCHITECT AND BUILDER, is proceeding with undiminished vigor, and has awakened in its train renewed interest in the Montreal Builders' Exchange.

The directors have determined to make the Exchange a practical factor in matters affecting the building trades. They feel that it is not enough to have comfortable, central quarters where members may casually drop in for a chat and a smoke, and thus to reduce the character of the Exchange merely to the social aspects of a club. By all means friendly intercourse is to be encouraged; but building exchanges must aim at something more definite and practical as the outcome of such intercourse. Several of the largest exchanges in the United States and Canada have achieved what enthusiastic pioneers of builders' exchanges had proclaimed possible, namely, the formation of a regular habit of all, or at least a majority of members being "on 'change" at the

prescribed noon hour, and allowing no other engagements to intrude on that hour. It can be done, and has been done by determination and united effort; but will never be accomplished by half-hearted apathy and indifference to the exchange.

The attitude of Montreal architects towards the exchange is also difficult to comprehend. Either from prejudice or some fancied breach of professional etiquette, they have hitherto held aloof from the Montreal exchange, although the most friendly relations exist between the two bodies in other Canadian and American cities, where their representatives are regularly on hand, willing, and even anxious, to discuss plans and adjust contracts on the floor of the various exchanges. It is not for want of cordiality on the part of the Montreal directors, who have time and again extended the most friendly invitations to them for closer intercourse and a more cordial attitude. Surely it is as much to the advantage of the architects as to that of the contractors that a free and amicable interchange of views should be the keynote of future relations!

The directors have recently appointed a permanent secretary, who will be at the disposal of all members, to look after their interests and to give careful consideration to their suggestions. It is their earnest hope and ultimate aim to see the Builders' Exchange as it should be, a rallying point where all the various branches of the building trades—represented even where they have already their own special trade organizations—may meet around a common centre as their natural home.

J. H. LAUER, Secretary.

[Friendly relations may and do exist between architects' societies and builders' exchanges, and points concerning the conduct of business which require settlement are settled by a conference of representatives, but precisely what is meant by representatives being "regularly on hand," or by the discussion of plans and the adjustment of contracts "on the floor of the various exchanges" is not apparent, for certainly, in the ordinary sense of these expressions, it is news that anything of the kind takes place in Canada.—Ed.]

BUILDING IN MONTREAL.

Building operations in Montreal during the month of April showed a very large aggregate both in the value of the structures started and the number of permits issued by the city building inspector. The following table gives a good idea of the conditions:

	1905.	1904.
April permits.		
New buildings	\$68,001	\$428,243
Alterations	98,347	67,595
New building permits	158	111
Alteration permits	91	81
Increase in value of buildings.....		\$219,758
Increase in value of alterations		30,750

The building operations for this year are likely to surpass anything in the history of the city, according to the records of Inspector Chausse's office. The first four months of the year show the following gratifying figures:

New buildings—	
January	\$ 27,490
February	100,215
March	370,450
April	658,001
Total value	\$1,156,156
Alterations—	
January	\$ 10,380
February	21,235
March	119,230
April	98,347
Total value	\$249,192
Total permits to May 1, 1905.....	479
Total permits to May 1, 1904.....	349

THE ROYAL CANADIAN ACADEMY EXHIBITION.

The exhibition of the Royal Canadian Academy, at the rooms of the Ontario Society of Artists, Toronto, has a general level of excellence that is higher than formerly. For this reason, perhaps, there are fewer salient pictures. It is not only that technical skill is more generally high, but that the main thing, imagination, for want of which exhibitions used often to be disappointing, has found its way into most of the work; and usually in its best form, the unobtrusive. It is this quality that makes a picture, but it is hard to define it or to say always where it comes in. The true instinct for it is delicate, in both the artist and the spectator. We do not like to have it thrust upon our attention, labelled by exaggeration; and to the artist it is its very subtlety, its inherence in prosaic facts, that attracts his effort to express it. It is for this reason that truth is so much insisted upon by the critics and so loved by the artist. It is because the idea lies in the truth, in certain parts of it particularly, that he is so painstaking in following truths, and so particular in his selection of them. It is what is suggested that makes the picture, but the suggestion must be made by the facts. We used to have the facts without the suggestion. The suggestion is now much more there too, and this is the gain.

Imagination is very much akin to humour in that it sees facts in their relation to life. The seriousness of Mr. Wyly Grier's little daughter, standing up to be painted in his red militia waistcoat, makes a picture because it is the expression of a child's attitude of mind towards the proceedings. It is a pretty attitude of mind and makes, therefore, a pleasing picture. We are, no doubt, indebted to the artist for perceiving it in the first place, and for its maintenance in his representation through times of subsequent familiarity and even weariness.

It is this perception of the poetry that is involved in the ordinary affairs of life that makes the true imagination, and the true picture is that which makes clear the poetic points so that others can see them as they appeared to the artist. The artist is, therefore, an interpreter of life. He may interpret but one kind of truth, as the painters of one theme; he may isolate the most suggestive truths, as the impressionists; but the greatest artist is undoubtedly he who is able to build up his theme with the greatest number of truths and, by a fine instinct for the proportion of things, still make it the thing expressed in his picture, which, perhaps, attracts at first sight simply from its truth to nature.

It would be a pleasure to comment upon the exhibition more in detail if space would permit. There are many pictures of interest. This by Mr. Wyly Grier is selected only as a simple illustration of a quality shared by most of the other exhibitors and by other portrait painters. It would be a pleasure to try to give a juster view of some of the pictures than is given in the daily press. The fatherly young man who, on behalf of the *Toronto Globe*, could only say of Mr. Homer Watson that he "does not seem painstaking," is hardly adequate. Not that this is

a bad criticism if it were meant well. That he is not painstaking is, from all accounts, the last thing that could be said of Mr. Watson, but that he does not seem painstaking is true, and is as it should be. But what a little to say of Mr. Watson who, if anybody, is the picture maker, the painter of imagination; who shows us the poetry of the country life, of work out of doors in the chances of the weather; whose pictures are always full of the feeling of fresh air and the expressiveness of nature.

Surely no one ought to review for the press such a serious matter as the Academy Exhibition but a man over sixty who knows something.

BRITISH COLUMBIA PLUMBERS ORGANIZE.

The master plumbers of British Columbia have formed an association to be known as the "British Columbia Provincial Association of Master Plumbers, Gas, Steam, and Hot Water Fitters."

The initial convention of the Association was held in Vancouver on April 21 and 22nd last, when the Association was formed, and the necessary officers and committees elected. Mr. J. J. Coughlan of Victoria, was elected president; Mr. W. H. Morton of Nanaimo, vice-president; Mr. J. G. Anderson of Vancouver, secretary, and Mr. C. Weeks, Vancouver, Treasurer.

The above mentioned gentlemen also compose the Executive Committee. A Sanitary and Legislative Committee and an Apprenticeship and Assay Committee were also appointed, consisting of delegates from various parts of the province.

At the opening of the convention, considerable time and discussion was given to the question of the need of organizing and what the object of the association should be. Mr. Coughlan in a well delivered speech explained the need of organization for the purpose of protection against the custom of wholesalers in ignoring the local plumber by selling direct to the consumer, and for the mutual help and benefit organization would give. Various other gentlemen spoke and all expressed themselves as favorable to the formation of a Provincial Association and advanced many points in favor of the proposal. The meeting then resolved itself into a committee of the whole to prepare the Constitution and By-laws.

The Constitution and By-laws of the National Association were adopted with such modifications as were necessary to a provincial organization. Article II of the National Association Constitution setting forth the objects of the Association was adopted in its integrity.

This Association is organized for sanitary, commercial and social purposes, and has for its special object the advancement of trade in all the latest discoveries of science appertaining to sanitary laws; to promote and combine the interest and influence of members for the protection of trade against imposition, injustice or encroachment upon our common rights and interests, encouraging invention and improvements in sanitary appliances; fostering an interchange of thought, and eliciting and communicating, for the benefit of each member, the best talent and the result of the experience and ability of all; to promote amicable relations with employees on the basis of mutual interest and equitable justice to both journeymen and master plumbers; to encourage Dominion and provincial legislation for the furtherance of the interest of sanitary laws; to secure for the members of the trade equitable treatment in their dealings with manufacturers and dealers in supplies; to regulate the

system of apprenticeship and employment, so as to prevent as far as practicable, the evil growing out of deficient training in the responsible duties of selecting, arranging and fitting up materials, relating to the hydraulic and sanitary condition of dwellings, public and private institutions; to create and maintain a sanitary code at as high a standard as the progress of science, (chemical, philosophical and mechanical knowledge) teaches: and we agree to carry forth, with tireless zeal, the work to which the above language relates.

It was decided to hold the next convention in Victoria on Good Friday, 1906, and to have the Provincial Association represented by two delegates at the National Convention to be held in Winnipeg in July this year.

A pleasing feature of the first day was a banquet tendered the visiting delegates by the Vancouver Master Plumbers and at the close of the convention a hearty vote of thanks was tendered the local association for its hospitable entertainment of the delegates. A hearty vote of thanks was also accorded the president for the able manner in which he had presided over the business of the Convention.

Following the close of the meeting the delegates were treated to an auto ride through the city and park by the supply firm, Robertson-Godson Co.

COLONIAL CONTRACTS.

It is often pointed out that our self-governing Colonies are our best customers. They are, however, by no means as good customers to us as they might be, and no obstacles which lie in the way ought to be left unattacked until they are absolutely removed. One of these is the want of facilities given to the contractor on this side to gain the fullest particulars of works forthcoming in the Colonies. It is not that machinery is lacking which would enable the necessary information to be made available to all whom it may concern. The Colonies possess in London admirable officers in their agents-general, and most of these have also an inspecting engineer attached to them. We may say at once that no blame is attributed to these gentlemen. We have invariably found them most courteous and most willing to leave no means untried to give the fullest information at their command. The fault lies on the other side of the water. The respective governments prefer to keep a dog—and a valuable dog at that—and do all the barking themselves. When contracts for construction of railways, or tramways, or bridges, or for materials are required, tenders are invited in a Local Government *Gazette*, which practically nobody sees in England, and just sometimes there appears a notice at the bottom of the advertisement stating that a copy of the specifications may be seen at the office of the Agent-General. As little of the material required is manufactured in London itself, and as most specifications are of such an intricate nature that a firm proposing to tender would wish, and would require, to take away a copy, and refer to it over and over again while preparing their tender, the least that could be expected is that copies should be obtainable here at a reasonable price by all *bona fide* contractors. It is all very well to say that all big firms have agents in the capitals of our large colonies. If the governments we refer to desire by these means to compel firms who wish to do business with them to establish agencies in the Colonies, all we can say is that such a policy is a short-sighted and penny-wise-pound-foolish one. The benefits conferred upon the few agencies which may happen to be in the Colony and able to undertake the special work in question, which may be narrowed down often to one, or if not to two or three who will combine, can only mean that the governments will have to pay a higher price for what they want than would be the case if the competition had been made more widely known, and this will outweigh any minor advantages accruing from the agency itself. In the second place, this only affects

large houses, and the small man ought to have a chance as well. But this is by no means all. The worst feature of the proceedings is that, while our contractors and manufacturers are left to grope in the dark, our Continental competitors are placed in a much better position. As soon as these specifications are obtainable in the Colonies, the German, Belgian, and other commercial agents attached to the various consulates obtain a copy and send them, sometimes wire them, to their headquarters. The German, Belgian, etc., competitor can go into the commercial museum of his town and see the specifications, and for a few pence he can get a typewritten copy. These museums are generally worked on a particular plan, the peculiarity of which strikes one very forcibly when it is contrasted with our methods. When we have any information we trumpet it about for the benefit of the world at large, so that everyone might come and help himself. When a foreign publication, say, for instance, one of those emanating from the museums of which we have spoken above, wishes to give a tip about a forthcoming contract, they take very particular care to restrict the information closely to their own countrymen, and the announcements are worded somewhat like this: "A telephone system is to be established in one of the islands of the Mediterranean, and intending tenderers *who are citizens of this country* may obtain full information at the museum." We see similar announcements very frequently, always mingled with two regrets—the first, that we are not able to give our readers the information they require; and the second, that our methods do compare so unfavorably with those of others. We hear so much talk about more or less intricate aspects of the fiscal question by people who understand them more or less—generally less—and who are more or less disinterested—also, we are afraid, generally less—and the differential value of the gold standard, and the merits of giving long over-sea credits and other words, and words and nothing but words, until we are sick and tired of it, and do long for the interspersing of a few grains of common-sense and a little more practical method of dealing with our commercial problems.

The (London) Contract Journal.

THE DEVIL'S DOOR.

A writer in the Western Times records that at Mullion Church, Cornwall, a devil's door exists. Mr. Harry Hems says in reference to this: There are hundreds of old churches where these doors occur. All ecclesiastical edifices rejoicing in the possession of a south door, with a northern one immediately opposite to it, own a devil's door, i.e., the north one. It has been the custom ever since our Norman ancestors, after the Conquest, first introduced fonts into this country to place the font in the centre of the western end of the nave, immediately midway between these two doors. When a christening took place both doors were invariably opened, and at the sign of the Cross the Holy Spirit entered by the south door and his Satanic Majesty took a hasty departure through the north! It was for this reason that in the good old times no decent Christian cared to rest his bones in the northern portion of the churchyard—a part of God's Acre reserved, as a rule, for suicides and other such-like unfortunates.

AMERICAN RADIATOR COMPANY IN CANADA.

The American Radiator Company has recently acquired the foundry plant of the Cockshutt Plow Company, at Brantford, Ontario. The Company will rapidly remodel these works with a view to making therein suitable lines of IDEAL Steam and Water Boilers, for which a good demand already exists throughout the Dominion, largely due to extensive advertising. The Company will not for the present manufacture Radiators there.

The continually expanding unity in commercial affairs now developing between the States and the Provinces, and the similarity of demand and trade conditions all combine to justify the expectation that the American Radiator Company can prove the broadest application of its title and policies on Canadian soil, as well as it is doing in the United States.

Mr. J. M. Gander, plasterer and contractor, of Toronto, is paying a visit to England, after an absence of eighteen years.

—THE—
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Prices for advertisements will be sent promptly on application. Orders for advertisements should reach the office of publication not later than the 12th, and change of advertisements not later than the 5th day of the month.

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Contributions of value to the persons in whose interest this journal is published are cordially invited. Subscribers are also requested to forward newspaper clippings or written items of interest from their respective localities.

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ARCHITECTURE AT THE S. P. S.

There are six students of architecture in course at the School of Practical Science, in the first and second years.

The new Y.M.C.A. building in Vancouver is well under way, the outer walls are up and the roof in place. The general design of the building is now evident. One of the most important features is the gymnasium which is one of the largest in Canada being 60 feet long and 50 feet wide the ceiling being 20 feet high. The building will be heated and ventilated by the Plenum System, and ducts running to every part of the building, keeping temperature at the proper degree. By the Plenum system, warm fresh air is supplied through these ducts to every part of the building from an electrically driven fan in the basement. Mr. E. E. Blackmore is the architect of the building and Mr. A. E. Carter the contractor in charge of the work.

**The Don Valley
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are now manufacturing

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 FIREPROOFING**

IN ARCHES, BLOCKS AND FURRING

in any required size.

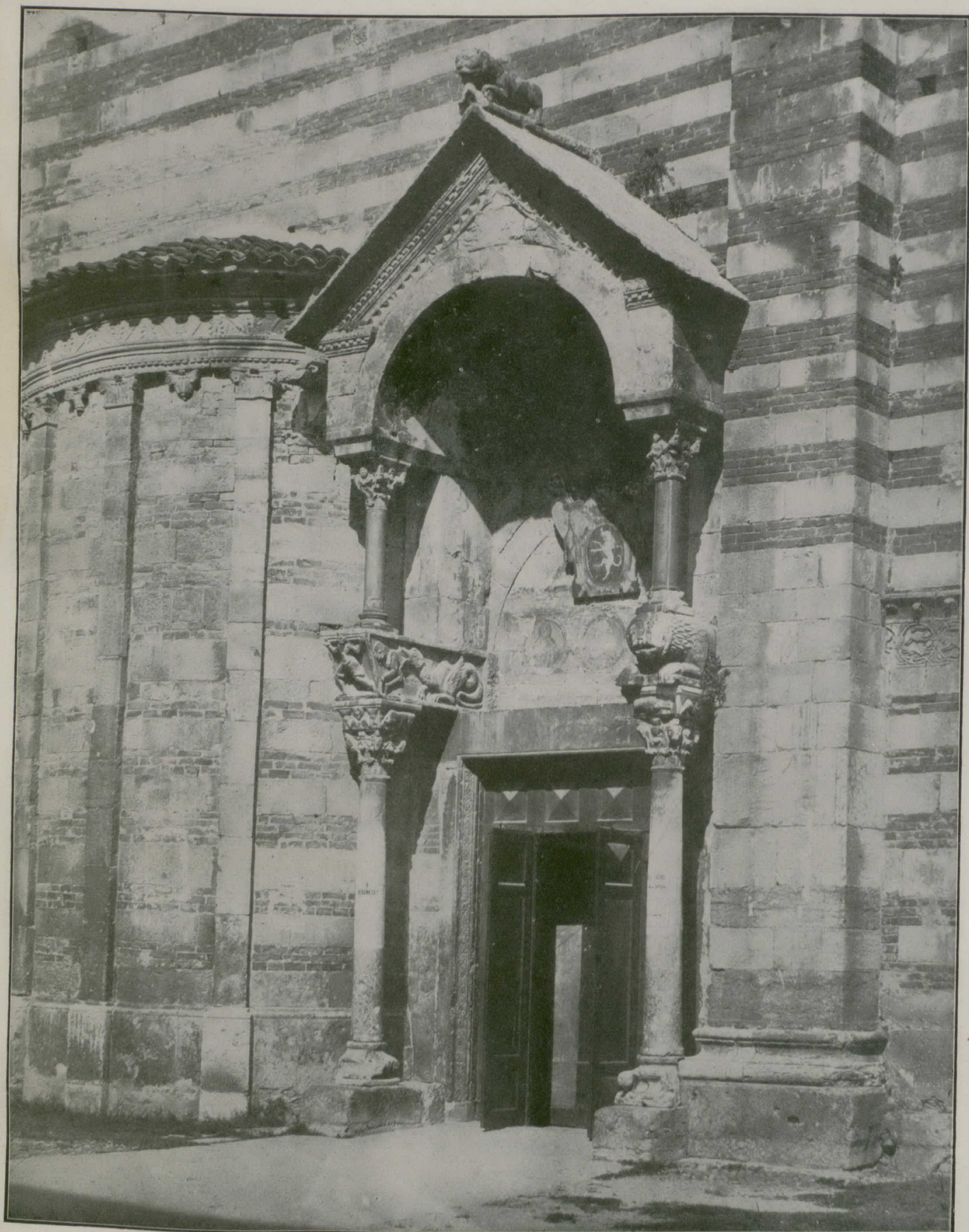
HEAD OFFICE:

36 Toronto Street, TORONTO

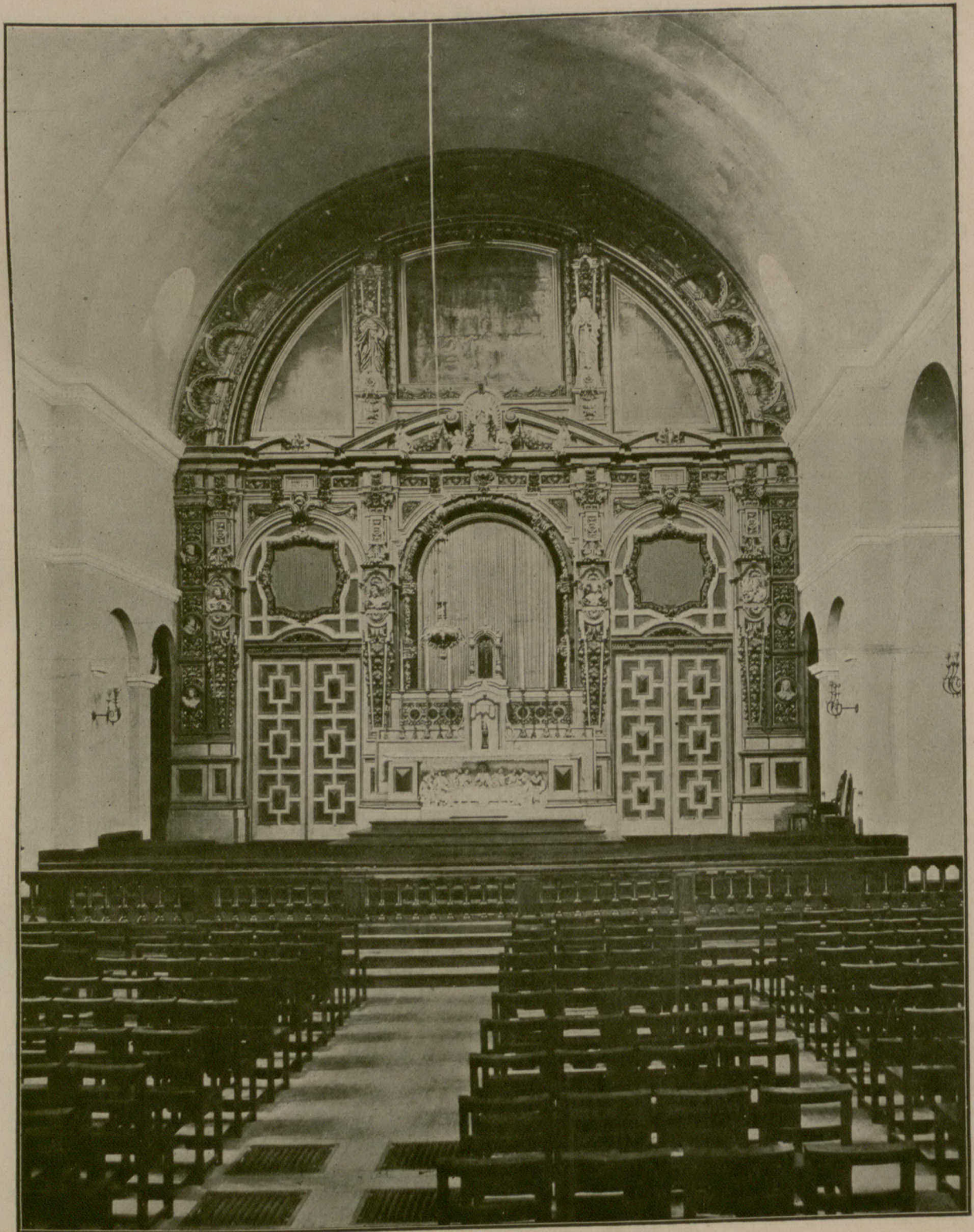
MONTREAL AGENTS:

DAVID MCGILL
 206 Merchants Bank Chambers, MONTREAL

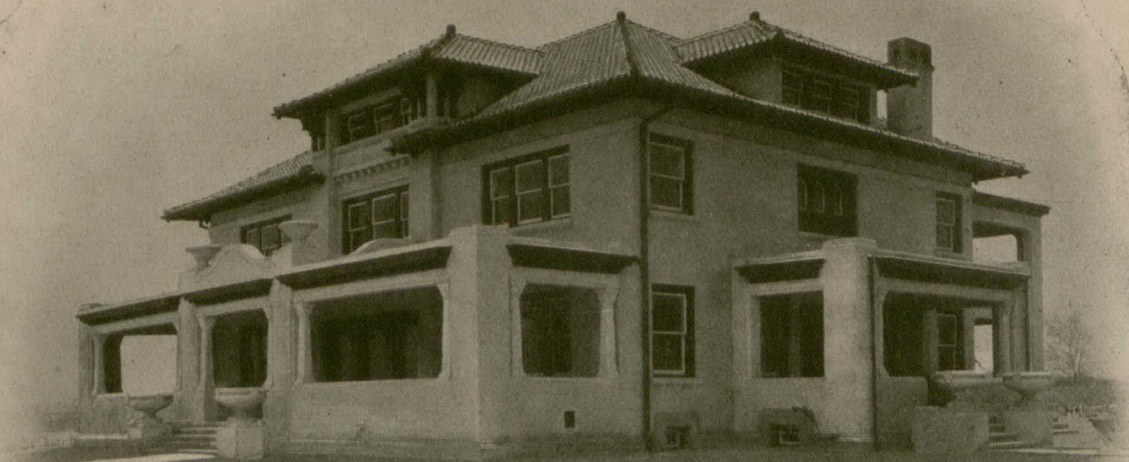
Kindly Write for Prices



SIDE DOOR OF VERONA CATHEDRAL.



CHURCH OF S. PETER AND S. PAUL, FALL RIVER, MASS.
MESSRS. CRAM, GOODHUE & FERGUSON, ARCHITECTS, BOSTON.
(From the Eighteen Club Exhibition).

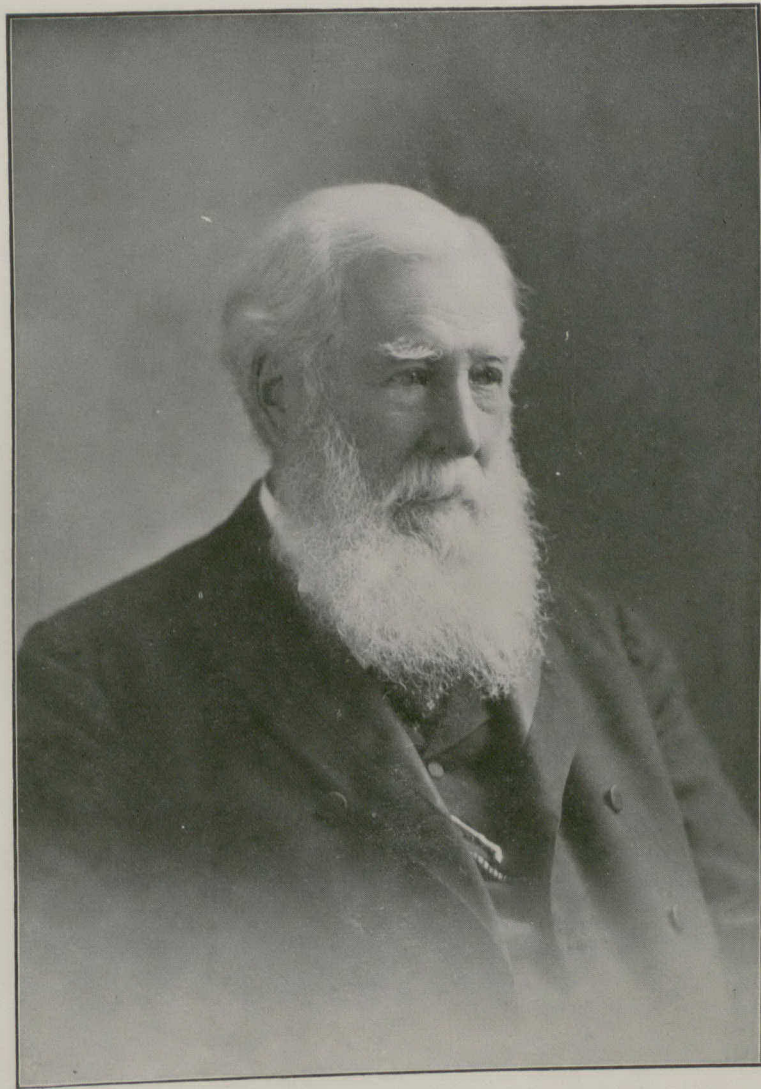


GENERAL VIEW OF FRONT.



ENTRANCE

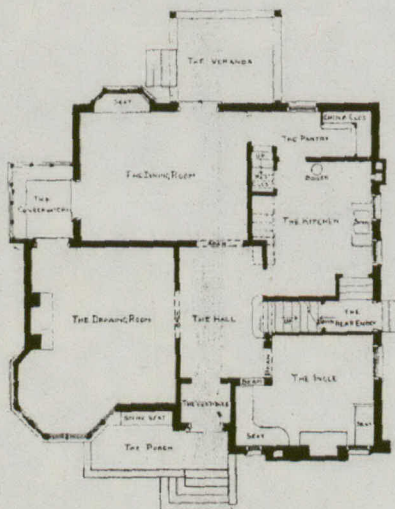
CONCRETE HOUSE OF MR. CHARLES A. MATCHAM, ALLENTOWN, PA.



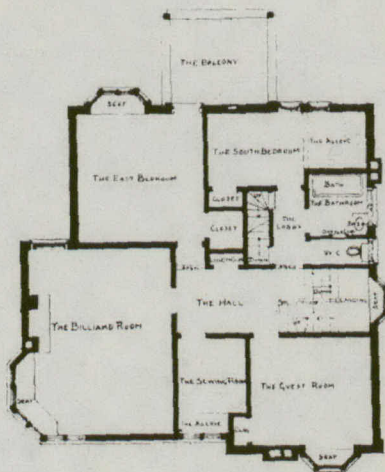
KIVAS TULLY, I.S.O.
LATE ARCHITECT TO THE PROVINCE OF ONTARIO.



VIEW OF THE INGÉ



GROUND FLOOR PLAN.



FIRST FLOOR PLAN.

No. 17 ELM AVENUE, TORONTO.
 MESSRS. CHADWICK & BECKETT, ARCHITECTS.



VIEW OF THE FRONT

NO. 17 ELM AVENUE, TORONTO.

MESSRS. CHADWICK & BECKETT, ARCHITECTS.

PAGES

MISSING