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1909—Building Operations—1910

THE END OF 1909 brought to a close Canada's biggest building year; the beginning of 1910 ushers in what promises to be a period of still greater activity and development. Nothing more fully reflects the marvelous growth of the country, nor foretells with a more assuring degree the wonderful expansion which will take place in the next twelve months, than the remarkably sound manner in which the season closed. Operations in all sections were vigorously prosecuted up to the final day, and the existing force of activity carried into the new year with an increasing momentum which leaves no doubt as to the prospects for 1910. The losses which occurred in December, with two exceptions, affected only such places as had experienced uninterrupted progress throughout the year, and came more as a relaxation following the heavy pressure of the preceding months, and a temporary let up preparatory to resuming operations with renewed energy, than as any unfavorable indication.

Official returns as submitted to CONSTRUCTION from thirty cities located in every province and section of the Dominion records a grand total for permits issued, amounting to \$68,606,821 for the past twelve months, as against \$42,577,439 for the entire year of 1908, thus registering an average gain for the year of approximately 60 per cent., or a proportionate increase in the volume of work undertaken nearly two-thirds again as great as

that carried out in the preceding twelve months. This average can be accepted as being representative of the general strides made throughout the country, as many cities whose exact figures are still unknown and hence not tabulated prospered to an equal or greater degree in proportion to their population, than some of the places which are included in the list.

Halifax and Edmonton were the only two cities which failed to surpass their figures for the previous year, the loss in either place being 24 per cent. and 16 per cent. in order named. Aside from these places, the year was one of complete ascendancy on every hand, and a triumphal march from coast to coast. The biggest increase noted is in the case of Saskatoon, which recorded an overwhelming gain of 767 per cent.; Fernie takes second honors with an advance of 449 per cent., and Lethbridge lands in the third position by overreaching the previous year's figures to the extent of 246 per cent. These figures serve as a reflex of the West as a whole, and while the proportionate increase in all cases is not so marked, the results in general are, to say the least, gratifying to the extreme.

In Manitoba, Winnipeg looms up with an increase of 67 per cent., Brandon a gain of 19 and Portage la Prairie with one of 62 per cent., while in Saskatchewan Regina and Moose Jaw's respective advances of 56 and 157 per cent., together with Saskatoon's figures previously mentioned, indicate that the onward movement was widespread throughout that province. Winnipeg's amount of

	Permits for December, 1909.	Permits for December, 1908.	Increase, per cent.	Decrease, per cent.	Permits for 1909.	Permits for 1908.	Increase, per cent.	Decrease, per cent.
Berlin, Ont.					\$278,550	\$121,350	129.54	
Brandon, Man.					350,120	291,864	19.95	
Brantford, Ont.	\$121,350	\$9,330	1200.64		438,885	289,855	51.41	
Calgary, Alta.	151,550	71,750	111.21		2,420,452	837,100	189.14	
Edmonton, Alta.	9,780	45,255		78.38	2,128,166	2,549,874		16.53
Fernie, B.C.		8,200	2921.95		1,374,700	250,000	449.98	
Fort William, Ont.	247,800				2,970,365	1,560,835	90.30	
Halifax, N.S.	14,345	33,550		57.24	630,380	838,725		24.84
Hamilton, Ont.	69,300	53,400	29.77		1,623,100	1,394,357	16.40	
Kingston, Ont.					452,695	170,600	165.35	
Lethbridge, Alta.	33,885				1,268,215	365,495	246.98	
London, Ont.	32,155	22,320	44.06		850,134	464,180	83.14	
Medicine Hat, Alta.					249,000	153,172	62.56	
Montreal, Que.	166,885	501,000		66.68	7,783,621	5,062,226	53.75	
Moose Jaw, Sask.					1,107,500	430,925	157.00	
Niagara Falls, Ont.					80,000	60,000	33.33	
Ottawa, Ont.	104,125	30,500	241.39		4,527,590	1,794,075	152.36	
Peterboro', Ont.	2,095	1,990	5.27		343,489	238,963	45.74	
Port Arthur, Ont.					584,810			
Portage la Prairie, M.					195,000	120,000	62.50	
Regina, Sask.	9,025	1,465	516.04		476,479	67,654	56.18	
St. John, N.B.	4,800	7,500		36.00				
St. Thomas, Ont.					260,000	236,000	10.16	
Saskatoon, Sask.					1,002,905	115,625	767.37	
Sydney, N.S.	7,290	1,020	614.70		160,470	67,015	139.45	
Toronto, Ont.	1,428,250	778,185	83.53		18,200,000	11,795,436	54.29	
Vancouver, B.C.	567,709	314,408	80.56		7,258,565	5,950,893	21.97	
Victoria, B.C.	71,700	113,025		36.56	1,673,420	1,130,740	47.99	
Windsor, Ont.	2,500				423,885	297,780	42.34	
Winnipeg, Man.	33,425	89,000		62.44	9,226,325	5,513,700	67.33	
Totals	\$3,077,969	\$2,081,898	46.09		\$68,606,821	\$42,577,439	59.76	

\$9,226,325, it might be mentioned, is the second largest total registered in the Dominion, and represents a jump of nearly four millions over her amount of the preceding year.

Equally as marked progress is also noted in Alberta, as besides Lethbridge's gain, previously referred to, Calgary annexed a gain of 189 per cent., and Medicine Hat advanced 62 per cent. Edmonton's loss cannot be regarded seriously, as her total of \$2,128,166 shows that the city is, and will continue to be, for some time to come, an important factor in the building line.

As regards Ontario, this province presents a series of bewildering gains. Toronto's total of \$18,200,000 shows the greatest volume of work undertaken in any city in the Dominion. It is a record of which Canada can be justly proud, as there is possibly no city of like size in the world that can boast of such pronounced growth. Ottawa also forged ahead in a most striking manner, her total for permits issued being \$4,527,590, as against \$1,794,075, a gain of 152 per cent., while other advances which give evidence to the gigantic strides which are being made are: Kingston, 165 per cent.; Berlin, 129; Fort William, 90; London, 83; Peterboro, 43; Windsor, 42; Niagara Falls, 33; and Hamilton, 16 per cent. Although Port Arthur failed to submit comparative figures, it is known that her total of \$584,810 is also in excess of the amount registered in 1908.

In the east, Montreal recorded an increase of 53 per cent. and Sydney a gain of 139 per cent. The activity shown in these two places is more or less representative of the progress made in most of the Eastern towns and cities. Apart from Halifax, few, if any, places met with reversals. Three Rivers, as is generally known, spent huge sums in the rebuilding of her burnt district, but in this and other instances, no record of operations have apparently been kept.

Regarding operations in December, Fort William's and Brantford's gains of 2921 per cent. and 1200 per cent. respectively are by far the outstanding feature. The other increases noted are, however, of a most substantial nature, and while smaller amounts are registered in some cases, as compared with the corresponding month in 1908, these represent, as stated above, the aftermath of a most gratifying harvest and the preparation of the "soil" for a more prolific crop.

All in all, 1910 promises much. Toronto predicts a total of \$23,000,000; Winnipeg expects to build to the extent of \$14,000,000; Montreal reports the outlook as "roseate"; and Vancouver says that she is just beginning to grow. This is only an idea of the optimism which pervades the entire country. Prospects for both large and small work were never better, and architects and builders can look forward to an extremely busy season. To sum up the situation in a word, 1909 has been a great year, but 1910 will, unless all signs fail, be a greater one in every respect.

A Nation's Prodigality.

FIRE LOSSES in the new world have reached such stupendous proportions that it seems almost impossible that people should give this criminal waste of our resources so little consideration. Portions of the globe, less rich in natural resources, would fall under the stress of so wanton a prodigality of much smaller proportions. We stand aghast at the monstrous expenditures of the countries of the old world, in the building of Dreadnaughts, and the maintenance of vast armies, while we, through pure neglect and improvidence, stand by and watch over two hundred millions of dollars go up in smoke every year, a sinful waste for which there is no excuse; a waste that, if not remedied, will eventually effect our ruin.

Sins of commission, and sins of omission both contribute to this enormous annual fire loss. The causes are dealt with from time to time in the public press, and it

would seem that we should soon awaken to the need of correcting conditions responsible for a ruinous waste almost unparalleled in the history of the growth of nations. Some statistician has recently compiled figures showing the great property loss due to the seemingly harmless "parlor match." It is maintained that a large percentage of the fire loss in the United States is due to the careless use of the "parlor match." In support of this contention, the following figures are given:

"In Massachusetts in 1907 there were 5,794 fires, 1,230 of which, entailing a loss of \$658,346, were caused by matches.

"Within sixty days, 25 fires, involving a loss of \$106,327, were traceable directly to the parlor match.

"In one year 446 fires from matches in Ohio, 122 were caused by children, 298 by carelessness of adults, 26 by rats and mice—also carelessness of adults.

"The number of persons burned to death in the United States each year by the parlor match is between eight and nine hundred, and the property loss more than two million."

It is pointed out that a law was recently enacted in Great Britain, prohibiting the use of any but "safety matches."

While the accuracy of the above figures is not to be questioned, and the suggestion for the prohibition of the use of overly sensitive lucifers is a good one, this is not the basic reason for the extremely large fire loss. It is not the indiscriminate use of the "parlor match" that accounts for the vast difference in the average per capita fire loss on this continent, as compared with that of the countries in Central, Western and Southern Europe, which is \$3.02 for the former and 33 cents for the latter. The real cause lies in the "flimsy" character of our buildings. In this connection, F. W. Fitzpatrick, the great "fire fighter" and exponent of safe building construction, in a recent article in a United States publication, gave some interesting figures as follows:

"Despite the wonderful advance made in so many sciences, we remain a *wooden* people. Even in the year 1907, 61 per cent. of all the construction carried on in the United States was of wood—well-seasoned *tu*el for future fire. In that same year we did a vast amount of building. In fifty-five of our leading cities the total reached was \$580,000,000. But in that same space of time we also burnt up in that same number of cities, \$215,000,000 worth of property. Plus that, our fire departments, water service and those alleged cures for fire, cost us another \$200,000,000 and more. Then, we also paid out over \$195,000,000 to our friends, the insurance people, who always accommodatingly bet with us on the question of fire. We paid that out in premiums and we got from them in return \$95,000,000 to apply on the \$215,000,000 of fire waste. A simple addition will show you the terrific cost of fire in this country. No other tax equals it. No other waste of a frightfully prodigal people comes within a stone's throw of it; and yet we pat ourselves on the back and say we are the most progressive and sensible people on earth."

We are following fast in the footsteps of our Southern neighbors; we are adopting, to a great extent, United States building methods, and what Mr. Fitzpatrick says of conditions in the United States, is equally true of Canada.

In the days of our early pioneers, before the advent of steel frame and reinforced concrete construction, and when terra cotta, tile, cement, asbestos, metallic lath, fire-proof doors and windows, and iron stairs were unheard of, there might have been some excuse for the indiscriminate use of wood in building construction; not so to-day. With every conceivable material and device within easy reach of every builder, at a cost so comparatively little in advance of combustible materials, and with the experiences of the neighboring Republic to profit by, there is no

excuse for the use of highly combustible building materials and the erection of inadequately protected structures. It is well that we should prohibit the use of "parlor matches," but why not get at the seat of the trouble, and build incombustible materials rather than of "tinder" to be licked up by the fire fiend.

\$1,500,000 Canadian Money to be Spent by U.S. Architect

WE HAVE VERY OFTEN referred in these columns to the tendency of some of our larger banking institutions and corporations to employ American architects to design their larger structures. We have gone into the evils connected with this unpatriotic practice on several occasions, to a considerable length, and from time to time concrete instances have been brought to the attention of our readers, but it has rested with the premier banking institution of Canada, The Bank of Montreal, the bank that has been built and supported by Canadian progress, the one that might be considered Canada's National Banking Institution, the daughter of the National Banking Institution of the British Empire, to go on record as having given us the most colossal instance of this unfortunate lack of consideration for the Canadian architectural profession and the building interests of this country. It is almost unthinkable that a banking institution that is almost a part of our national life, an institution whose President has been honored by our King with Knighthood, an institution whose general manager has been mentioned as a possibility for the position that is the greatest gift of the Canadian people, the Canadian High Commissioner to England, should above all others, show such a gross lack of consideration for the principles upon which depend the very commercial existence of our country.

We have often pointed out that such a procedure on the part of the moneyed interests of Canada does not only militate against the welfare of the architectural profession, but the contractor, building material manufacturer, as well as the laborer, are all equally effected. It is well known that American architectural firms show little or no consideration to Canadian contractors or manufacturers, and when, as in this case, an American architect has been employed to erect a building to cost \$1,500,000, it simply means that at least 80% of that money leaves this country. At a meeting of the Bankers Association held not long ago, it was pointed out by several of the members that the cause for the recent money stringency in Canada was the lack of capital. There was not sufficient money in this country to finance our rapidly developing enterprises, and that Canadian banks must look for capital from foreign countries. In the face of this indisputable fact, it seems rather inconsistent that the Bank of Montreal's vanity in its desire to erect such a colossal monument to itself in the Western country, should carry it so far as to assume the position that there was nothing in Canada good enough for it.

When we say that there is no city or town in the United States, of a population that might compare with that of any of our Canadian towns or cities, that has as a rule, from the standpoint of both architecture and construction, banking buildings that compare with those in Canada, most of which have been designed by Canadian architects and built by Canadian contractors, we are stating a fact that stands without dispute.

The Canadian daily press, which, up to this time, has either failed to fully realize the evil of this practice of going abroad for the designers of Canadian buildings, or were not sufficiently bold to attack our larger corporations, have ignored this subject, and it is with considerable delight that we learn that the "Winnipeg Tribune" has taken up the cudgel on behalf of Canadian interests. We reproduce below their editorial, which should prove most interesting to the profession and the building fraternity alike, together with the comments upon same by a

Canadian contractor in Winnipeg and his correspondence with the general manager of the Bank of Montreal, in an effort to get a square deal.

* * *

The following is the editorial from the "Winnipeg Tribune," under the heading "Is This Canadianism?":—"The Bank of Montreal is about to erect a building in Winnipeg which is to cost one million and a half of dollars. The contract has been let to a firm of contractors which hails from the United States.

"Some time ago a very prominent bank building in course of construction bore a huge placard proclaiming that the builders were of Boston, New York, Worcester and Cleveland. It was simply an intimation that while certain institutions in Canada could pay for fine buildings there was nobody in Canada who could put them up.

"The Telegram at the time vigorously protested against the implication of this legend and in deference to this protest Winnipeg and Toronto were added to the various domiciles of this firm for local and probably temporary purposes.

"Now the Bank of Montreal has placed the profit of a huge expenditure in the hands of a United States firm of contractors. The Bank of Montreal ranks almost as a national institution. It is one of the great banks of the world. It bulges with money every single dollar of which was won by Canadian labor from Canadian soil. Nobody questions the vast services which the Bank of Montreal has rendered to Canada, but it is a creature of Canadian legislation and the services it has rendered to Canada are by no means so great as the services Canada has rendered to it.

"Our banks have at least this great advantage over others of less favored countries that even if they do absorb too large a proportion of the wealth of the community they use it judiciously to beautify our streets. They do not hide their wealth as bankers were wont to do in less civilized times. They blazon it forth in the construction of palaces.

"But a bank like the Bank of Montreal, the creation of the Canadian government, the beneficiary of Canadian labor, should be content to limit itself to such inhabitations as Canadian ability is capable of constructing. Canadian constructive talent is equal to that of any other country. And it may be fairly asked of the Bank of Montreal whether it considers it just to give the country which has nursed it to its present greatness the injurious advertisement involved in awarding a very large contract to a foreign firm."

This stand, taken by a Canadian daily, should inspire the Canadian press generally to be bold enough to assert the rights of the Canadian people, with regard to the sending of their money out of the country, by corporations who wish to purchase abroad those things which may be obtained in Canada.

* * *

The following letter to the "Telegram," from Mr. Kelly, gives a very excellent idea as to just how Canadian contractors and material dealers are treated by American architects. It will be noted that Mr. Kelly states that he agreed to take \$75,000 off his tender, providing he were permitted to use Canadian marble in the place of that which had been specified. The correspondence between Mr. Kelly and Sir Edward Clouston shows just how helpless a Canadian owner is, after he places himself in the hands of a United States architect.

Winnipeg, Dec. 21, 1909.

To the Editor of The Telegram, City.

Dear Sir,—I have read with great interest your comments on the management of the Bank of Montreal, in going to New York for their architects and contractors for their new bank building here. I regret very much that there are not more like you in the newspaper business, who have the courage of their convictions in showing up institutions like the Bank of Montreal, which has been

fostered, nursed and fed by the Canadian people. When they have anything to give, instead of giving it to their own people, who have placed them in the financial position they now occupy, they hand it out to Americans on a silver tray.

It has never come under my notice where Mr. Yankee has handed over very much to Canadians, in a like manner. To bear out my contention, there are thousands of Canadians at different times caught on the other side with Bank of Montreal bills in their pockets, and when they wanted them changed they were asked as high as 10 per cent. discount.

Under such conditions, I do not think we owe the Americans very much, and it has never come to my notice where an American city has placed their bond issue in the hands of the Bank of Montreal and given them carte blanche to dispose of them at whatever profit they felt disposed to charge, as the city of Winnipeg has done. In return, the citizens of Winnipeg will soon see adorning the site of the new premises the sign, "Norcross Bros., Ltd., Contractors, Worcester, New York, Pittsburg and Chicago."

This is the gratitude shown the citizens of Winnipeg, when there were firms here who were just as competent in every way to erect their building, and the public should bear this in mind and patronize banks that are loyal to their country. It was like pulling eye teeth to get a chance to figure on this work, as I happened to be one of the two Canadian firms tendering, and my letter to the general manager and his reply will show what consideration was shown to Winnipeg contractors.

It might be mentioned that I offered to reduce my tender \$75,000 if allowed to use Canadian marble instead of the marble specified, but this offer was not considered.

Thanking you for space in your valuable paper. Yours truly,

THOMAS KELLY.

* * *

Following is Mr. Kelly's first communication to Sir Edward Clouston:

Winnipeg, Man., Nov. 12, 1909.

Sir Edward S. Clouston, Bart.,
General Manager, Bank of Montreal,
Montreal, P.Q.

Dear Sir,—Our attention has been called to the fact that the bank's architect, who has the plans out for your new building here, is asking New York contractors for bids on this work, ignoring Winnipeg contractors altogether. Although Winnipeg is far from being as large a city as New York, that is no reason why there should not be men in the contracting business in this western country endowed with just as much brains as New York contractors, and whose ability to carry work of this nature to a successful completion is just as good as New York men. Of course it is quite natural for New York architects to favor New York contractors with whom they have had experience, to the detriment of local firms, but we think that we ought to have an opportunity of figuring on this building.

We wish to call your attention to some of the buildings that we have erected within the last few years here and at Vancouver, B.C., and we feel that you will be quite satisfied after looking into same, that we are quite capable of giving every satisfaction in connection with a building, such as you intend to build, providing we were fortunate enough to get the contract to erect same. We might also state that we are as well equipped as any firm in America to carry out this class of work.

The following is a list of some of the buildings we have erected:

The Winnipeg post office building, which is a fireproof structure, built of Cleveland sandstone, finished with marble inside, and which cost \$565,000.

The Winnipeg Grain Exchange, also a fireproof building, and which cost \$600,000.

The Bank of Toronto in Winnipeg, built of Vancouver granite and Georgia marble, with banking room finished in marble, costing about \$200,000.

The Imperial Bank in Winnipeg, built of Cleveland sandstone, with banking room finished in marble, costing in the neighborhood of \$200,000.

The Bank of Nova Scotia in Winnipeg, built of Vancouver granite and English terra cotta, costing \$250,000.

The Dominion Government Post Office building in Vancouver, B.C., built of Vancouver granite and costing about \$500,000.

The Canadian Bank of Commerce in Vancouver, B.C., built of Vancouver granite and costing \$350,000, which is conceded to be one of the finest buildings in Vancouver, B.C., built of

In conclusion, we think we are safe in saying that the buildings mentioned are second to none in the Dominion of Canada as far as workmanship is concerned, and we trust that you will do what you can and see that we are given an opportunity of figuring on your building.

Thanking you in anticipation.

Yours very truly,

THOS. KELLY & SONS,
Per Thos. Kelly.

* * *

In reply, this firm of contractors received the following letter:—

Montreal, Nov. 15, 1909.

Messrs. Thos. Kelly & Sons,
P.O. Box 457, Winnipeg, Man.

Dear Sirs,—I have to acknowledge receipt of your letter of the 12th inst., and have sent it on to the architects in New York, who are in complete charge of the proposed building. I understand there is a limit of time for tenders to be in, and if it is not too late, I feel sure the architects will give your proposal all due consideration.

Yours faithfully,

E. S. CLOUSTON,
General Manager.

* * *

This subsequent letter to the General Manager of the Bank of Montreal, from Mr. Kelly, shows how his firm, owing to the limited time available, was at a disadvantage in the preparation of their tender.

Winnipeg, Nov. 19, 1909.

Sir Edwin S. Clouston, Bart.,
Vice-President and General Manager,
Bank of Montreal,
Montreal, P.Q.

Dear Sir,—We are in receipt of your letter of the 15th inst., re Bank of Montreal building here. In reply we wish to state that we received plans and specifications of the proposed building this morning, for which we thank you. We wish to state that the time for making up our tender is very limited, and it is a question as to whether we can have the same ready in time, as it must be in the hands of the architects on the 29th of this month; this gives us but a week to prepare our bid. We do not consider that we are getting the same treatment as New York contractors, as they have now had the plans for several weeks, as they have been making inquiries from sub-contractors here in the city for figures.

The site will not be available until March 10, 1910. so we feel that it would not be detrimental to the bank's interests if the architects could see their way clear to give us an extra week or ten days to make up our tender.

We trust that you will use your influence to obtain

this favor for us. Thanking you in anticipation, we remain

Very truly yours,
THOS. KELLY & SONS, per T. K.

Sir Edward S. Clouston's reply to the above letter was as follows:—

Montreal, Nov. 22, 1909.

Messrs. Thos. Kelly & Sons,
Winnipeg, Man.

Dear Sirs.—I have to acknowledge receipt of your letter of the 19th inst., and have forwarded it to Messrs. McKim, Mead & White, at New York, who, I am sure, will give it every consideration.

Yours faithfully,
E. S. CLOUSTON,
General Manager.

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Designs for Rural School Houses.

“PLANS FOR RURAL SCHOOL BUILDINGS” is the title of a one hundred and twenty page book just issued by the Ontario Department of Education for distribution among the rural school boards throughout the province.

In addition to a half-tone frontispiece showing a “Model School Building, Grounds, and School Gardens,” and four colored plates giving suggestions for various color schemes for interior decoration, it contains reproductions of line drawings showing perspectives, elevations and plans of thirty-six designs for rural schools of one, two and three class-rooms. Several pages are devoted to construction details, heating and ventilating plans, plans for closets and illustrated suggestions as to the proper location and construction of privy vaults.

The text includes some valuable suggestions as to selection of site, materials to be used in construction; size, location, equipment and decoration of class-rooms halls and cloak rooms; selection, size, location of desks; selection, size and care of blackboards; size and location of windows and kind of glass to be used in same; color and character of blinds; and some very excellent pointers as to the heating and ventilation system best suited to small rural schools. Twelve pages are devoted to school grounds, disposal of refuse, water supply and closets, in which many valuable suggestions are given as to precautionary measures that should be employed to ensure the health and comfort of the children.

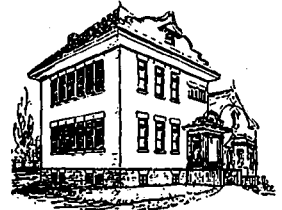
Appendix B gives a recommended form of specifications to be adopted by school boards, which is simple, concise and comprehensive, and Appendix C gives a recommended form of building contract. Inasmuch as many of our rural schools are not erected after plans prepared by an architect, but usually built by a local contractor or mechanic with whom the school board has to deal directly, these simple forms of specifications and contracts, endorsed as they are by the Provincial Government, will prove invaluable to school boards, the members of which cannot, ordinarily, be expected to be informed on matters pertaining to school building construction.

The object of the publication and the conditions that prompted the Department of Education to issue it, are best explained in its introductory paragraphs.

“Show me your school-houses,” said a shrewd farmer. They will tell me more about the people of your township than I can learn in any other way. The school houses have no prejudices, they speak the truth, and the whole truth, about the attitude of your municipality towards all that makes for genuine progress. That farmer was right. ‘Like people, like school,’ is true oftener than it is not.

“The school is closely related to the home. The progress of the one should keep pace with the progress of the other. The log school-house belonged to the days of the log shanty with its trough-covered roof. The unpainted, box-shaped, dilapidated, desolate looking school should pass away with the log shanty and the

old frame dwelling house we have outgrown. The “houses of to-day indicate prosperity, comfort, and growing good taste. So should the school. We should build schools in keeping with our new homes, or, better still, “with those we expect to “have ten years hence. “Moreover, we should have “the best school-houses we “can afford, and we can “afford to have them a little “better than the average “home of the section. The “new house, or barn, or “stable, or pig pen is not “built on the same plan “as the one of forty years ago. The farmer has “seen something better than the old one, and so he builds, “not according to the past, but for the future, and if possible he makes some improvement on what he has seen. “So, too, the school-house should not be patterned after “the old one, not even after the best one in the township, “but after the best one that can be found in the Province.



Design 13.

“And there are other and greater considerations. Architecture is the highest of the Industrial Arts, and the “most useful of the Fine Arts. Its function is to please “the eye as well as to satisfy the requirements of convenience and stability. The most perfect building, accordingly, is that which combines convenience, stability, “and beauty. Of the public buildings in a community, “the school building is the most important. If we are to “cultivate the taste of the pupils and of the rest of the “community, both it and its surroundings must be an

“example of taste, simplicity, and dignity in form “and design.

“But, in the matter of “school architecture, trustees are handicapped. They “do not themselves know “from experience what the “good points are, nearly so “well as they know the “good points of the farm “and other buildings they



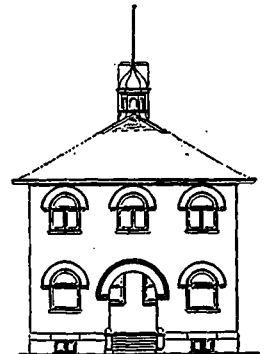
Design 14.

“use every day. To provide them with help they “need, this book has been prepared by the Department of Education. In addition to plans for schools “with one, two, or three teachers it contains the substance “of the Departmental Regulations (Circular No. 33) regarding accommodations, in an amended form, with “suggestions and recommendations to school boards. The “plans are merely suggestive and may be modified with “the approval of the Inspector to suit special conditions. “For the further guidance of school boards this book

“contains also suggestions “for color schemes, an estimate of the cost of the “different classes of school “buildings and draft forms “of specifications and “agreements.”

The suggestions given for the selection of site, and pointers as to details of construction, are also of interest.

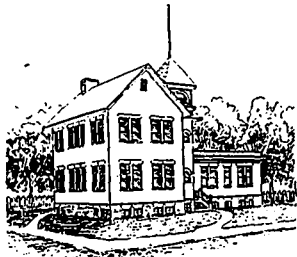
“The school building “should be well constructed “of brick, stone, or cement. “with brick partitions. It “should have a southern or



Design 16.

“south-eastern exposure and shall be at least “thirty feet from the public highway. Its site “and its architectural appearance should also be most “carefully considered. The entrance shall have a vesti-

"bule or covered porch, with doors swinging outwards or either way. At least in schools with more than one teacher there should be separate entrances and separate exits to the closets. Where there are two stories, the second floor shall be made sound-proof with mortar, felt,



Design 25.

or other suitable material. A school bell and, in schools with more than one story, a fire alarm gong shall be provided. Every school should have, as a recreation room, a basement, at least seven feet high in the clear; ceiled with wood or metal sheeting, to keep the floors above warm (plaster obviously objectionable); and floored with pine, hardwood, or (preferably) cement."

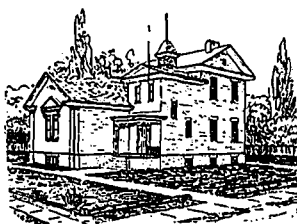
With regard to the thirty-six designs shown, we are sorry to say that they are, as a whole, not up to the standard that we might have been entitled to expect in a Government publication of this character. Apart from the designs themselves, the perspectives are crude and the elevations and floor plans do not give sufficient detail.

Twelve designs for one-room schools are shown, to cost from \$1,200 to \$2,520, and, apart from the lack of originality in design, the plans are most commendable, and with the application of good taste in the alteration of some minor details, these designs provide for some very attractive little structures.

In the twelve designs for two room buildings, (to cost from \$2,000 to \$3,150, the same hackneyed style in exterior design seems to have been carried out, although the one-story designs numbers 19, 21, 22, 24, treated with reasonably bright exterior color scheme, would make very bright little school houses. But we cannot understand why the Government should encourage two-story two-room rural schools, as it has in designs numbers 13, 14, 15, 16, 17, 18. There is no combination of circumstances that we can conceive of that would justify a rural school board in the selection of any one of these designs, from the standpoint of design, plan or economy.

Among the twelve three-room school designs, for buildings to cost from \$3,800 to \$6,000, are to be found the best and the worst in the book. A man could hardly design a barn more crudely than the schools shown in designs 25, 26, 28. Number 25 gives the appearance of an uninteresting, badly planned two-story two-room school with a one-story one-room extension. Apart from the crudity of the design, the structure would prove both difficult and expensive to heat.

We are at a complete loss to know what result the designer of number 26 was attempting to arrive at. It looks as though he must have received his inspiration



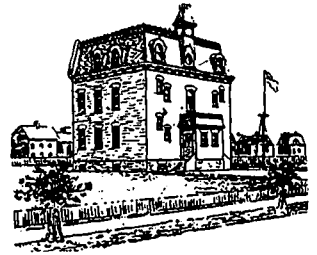
Design 26.

rural school board.

Design number 27 is, without question, the most dangerous in the whole series; a three-story, three-room school building of a design that would shock our grand-

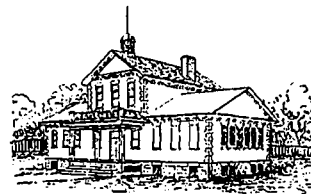
fathers, in whose early log-schools we find homely beauty and an atmosphere of warmth and comfort. It is difficult to understand the object of the Department of Education in allowing this design to be included in the series, especially in view of the fact that it has become universally acknowledged by students of school architecture, that even the largest city schools, where land is at a premium, should not be more than two stories in height. Some of the largest cities in the United States have gone so far as to make it unlawful to build schools higher than two stories, even though they are of fireproof construction.

It appears to us that the discouragement of the erection of three-story schools should have been one of the most important objects to be attained by the department in the issuing of this book of suggestions. Instead of that, they have suggested a design that takes advantage of the least possible excuse (three rooms) for the construction of a type of building that is universally condemned by all recognized authorities. Another feature of this design that is open to severe criticism is the location of the stairways, facing each other as they do at the front of the building. Also the built-on entry with doors at each side, instead of in front. In case of a rush for the door, there would be serious danger of this entry becoming blocked, and in such a contingency, with the pressure of the on-rushing pupils, the safe exit from the building would be rendered impossible. This design has not one point in its favor, and it has every undesirable feature that a faulty three-room school could be provided



Design 27.

with. Number 28, architecturally, is uninteresting to a degree that offends. It represents the solution of the problem of erecting a two-story three-room school building, as might be conceived of by an untrained mechanic. The country carpenter could produce nothing less interesting.

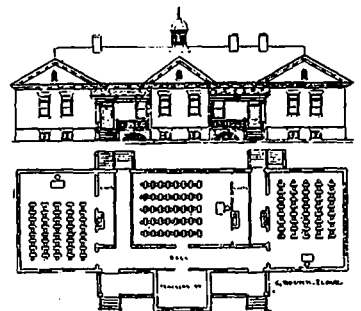


Design 28.

The one-story three-room schools shown in designs 29, 32, 33, although there is a marked similarity running through them, with becoming color treatment and some few alterations to give them a touch of originality, would in both floor plan and exterior effect be much more attractive than most of the rural schools we find at present in the province of Ontario.

Designs 34, 35, and 36 are in both plan and exterior treatment, the best to be found in the book, and a school built after any one would be an ornament and a credit to a community and it is to be regretted that it is impossible to say the same of every one of the 36 designs.

The declared object of the Government in issuing this book is an excellent one. It has been a step in the right



Design 34.

direction, and it is to be hoped that every rural school board official that is appointed on a school building committee, will pay heed to the suggestions given in the text of this book, and that he will see and appreciate the good designs and overlook or forget the bad ones.

The 36 designs bear every evidence of all having been the work of one man, whose name we do not know.

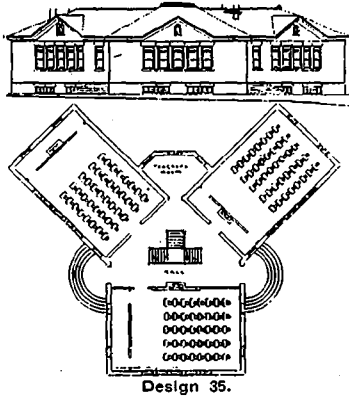
It is next to impossible to get any one designer to create a masterpiece in every one of the 36 structures, where the requirements are similar. Had the government conducted a draftsmen's competition, as has been done in similar cases in many cities in the United States, it would have secured designs that, for exterior treatment and interior arrangement, would have been superior to 36 designs of any individual architect.

The government assumes a great responsibility in the publication of a work of this nature, and the effect of the suggestions contained therein, are much greater, either for good or for bad, than those contained in any publication that might be issued by a private concern. The text of the book is excellent, the perspectives poorly drawn, some of the designs commendable, and some bad in the extreme.

Under any circumstances, however, the school board that seeks the best possible structure for the least money, a school suited to local conditions, a building that is designed for its site—though it is to be small,—will show wise judgment in the employment of a competent architect.

Correction

WE DESIRE TO CALL our readers' attention to an error which occurred in the previous number of CONSTRUCTION. In a brief commentary on the work of Architects Hooper and Hooper, of Winnipeg, we referred to the senior member of the firm as the late Sam'l. Hooper. That we spoke out of turn is evident from a letter received from the person in question to the effect that he is very much alive, and that the report of his death, like that of Mark Twain, was greatly exaggerated. The previous news concerning Mr. Hooper came from what has always proven heretofore to be a reliable source. However, we are glad to know that our informant was not only in error, but further to learn that Mr. Hooper, in the best of



Design 35.

tion of the country in which he resides. We assure our readers that it gives us great pleasure to make the correction.

New President R.A.I.C.

MR. A. F. DUNLOP, who for the past two years resigned at the meeting of the Council in Montreal has been President of the R. A. I. C., recently real. Mr. F. S. Baker, F.R.I.B.A., who has been one of the most active workers in this new Dominion organization of architects, was appointed to fill the vacancy. Mr. Baker is a very energetic member of the profession, and we are sure that under his direction the Institute will be enabled to solve many of the problems of federation, etc., now before it.

There were several other very important matters discussed at the meeting of the Council which will be dealt with in the next issue of CONSTRUCTION.

Meeting of Montreal Exchange

THE ANNUAL REPORT of the Board of Directors for the Montreal Builders' Exchange and the financial statement of the Secretary-Treasurer, Mr. J. H. Laurey, presented at the yearly meeting of that organization, recently held, show the affairs of the Exchange to be in a most satisfactory condition.

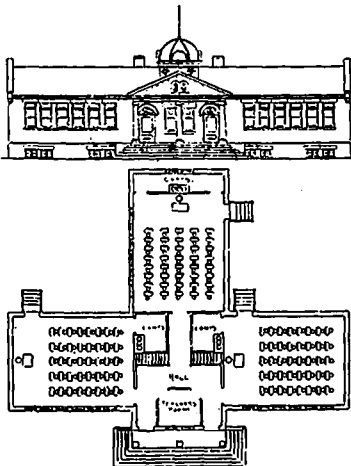
In proposing the adoption of the report, the Secretary drew attention to the many important subjects which had come up for consideration during the past year, and the volume of work which had been accomplished through its agency. In the first place the Exchange had established itself in its new, modernly appointed home in the East Township Bank Building, and despite the large financial responsibility involved, the entire additional expense had been met by the current revenue. The annual statement, in fact, showed a larger balance on hand at the close of the year than at the commencement.

The most important local work in connection with the Exchange was the establishment of a Department of Permanent Exhibits, open daily to the public free of charge, and which is the first of its kind to be instituted in Canada. The exhibit is open to the public, and an invitation is extended to all interested to view the display and familiarize themselves with the various materials and latest devices used in connection with building construction.

As regards technical education, reference was made to the splendid schools for this purpose now being erected by the Quebec Government, and attention was drawn to the importance of not emphasizing the theoretical side to the exclusion of the practical, in training the future craftsman and mechanic. The new buildings offer ample room for the inclusion of a trade school department, and it was to be hoped that the Governing Board would establish this feature, so that the mechanic can have means of obtaining the fundamental training, now denied him by the passing of the old order of apprenticeship.

The Builders' Exchange had also, according to Mr. Laurer, exercised its customary supervision in matters pertaining to Federal Legislation, in which respect two important measures now under consideration merit the attention of the employers throughout Canada—namely, the endeavor to extend the operation of the Lemieux "Investigation and Industrial Disputes Act" to all current branches of trade, and the annual appearance of Mr. Verville's "Eight Hour Day Bill" on all Government Public Works. The most important fruit of Provincial Legislation was "Compensation for Workmen for Accidents Bill," which however had not produced so favorable an effect upon insurance rates as employers were entitled to anticipate.

The election of Officers for the current year was as follows: President, J. N. Arcand; Vice President, Jas. Ballantyne; Board of Directors, A. Bremner, Jos. Brunet, E. G. M. Cape, K. D. Church, W. T. Castle, Thos. Gildav, I. W. Hughes, Wm. Rutherford, T. A. Morrison, Frank Pauze, E. W. Sayer.



Design 36.

health, is at the present time actively engaged in looking after his duties as Provincial Architect of Manitoba, and furthering the interest of the R.A.I.C. in that sec-

TWENTY-SECOND ANNUAL MEETING OF O.A.A.—President's Address Shows Progress of Association.—Date of Annual Meeting Changed.—Title of 'Registered' to be Retained.—Conciliatory Attitude Advocated for the Promotion of Architectural Education.

THE ONTARIO ASSOCIATION OF ARCHITECTS held its Twenty-second Annual Convention at the rooms of the Toronto Chapter, 96 King street west, Toronto, Jan. 11 and 12.

The meeting was one of the most spirited and most interesting in the history of the Association, and several questions which vitally effect the future and status of the organization were discussed by the many members attending, with vigorous interest. At the opening of the meeting, the members seemed to have widely different ideas on the several important matters discussed, but the excellent good nature that prevailed throughout the entire convention, made possible the arriving at unanimous action on all matters in question.

The meeting was opened at two o'clock on Tuesday afternoon, and after the adoption of the minutes of the last meeting, President Gouinlock read his address, which showed the very excellent progress that had been made by the organization during the past year, in dealing with the many matters of import that were before them, as well as making plain the prosperous state of building operations throughout the entire Province of Ontario. Mr. Gouinlock's address was as follows:

President's Address

IT IS MY PRIVILEGE to voice the welcome which the council and Toronto members of the Ontario Association of Architects cordially extend to the members generally at this the twenty-second annual convention of the Association.

These meetings give us almost the only opportunities we are afforded of coming into personal relations with any but our local members, and the yearly communion with our professional brethren from other cities and localities must tend to widen our horizon, broaden our sympathies, and deepen our knowledge. Thus we are benefited in cubic measure, so to speak.

We may congratulate ourselves upon the unusually prosperous year in building operations which has just closed (the most successful in the history of architecture in Ontario), and we can look, I believe, with cheerful confidence to a continuance of that prosperity during the present year, and we hope, for many successive years.

To show the extent in which building operations are advancing, I quote a few comparative figures from the leading cities and towns of the province, for which I am indebted to the editor of CONSTRUCTION:

Town.	1909.	1908.	Per Cent. Increase.
London.	\$ 860,134	\$ 464,180	83.
Hamilton.	1,623,100	1,394,359	16.
Ottawa.	4,527,590	1,794,075	162.
Toronto.	18,200,000	11,795,436	54.
Berlin.	278,550	121,350	129.
Brantford.	488,885	289,855	61.
Fort William.	2,970,365	1,560,835	90.
Windsor.	423,885	297,780	42.
Port Arthur.	584,810
	\$29,372,509	\$17,717,870	65.

Our country is developing with astounding rapidity its material resources, is extending its manufacturing and commercial interests day by day—but best of all, an intelligent appreciation of, and desire for the less material but none the less essential facets of our complex civilization is steadily growing—the beautiful, the graceful, the

true—and while buildings are demanded that shall fit defined uses of unending variety, it is required with more and more insistence that they shall also adorn the localities in which they are erected; that while a building shall be built to last, it shall also be, the poets' definition of durability, "a thing of beauty."

But while we of the present generation of architects may be justly proud in our modest way, of our own efforts in the noble art we profess, we are not unmindful of the limitation which circumstances have placed upon our powers, and we have sufficient disinterested regard for the profession to desire the removal of some at least of these disabilities from the path of our successors.

In various ways we have endeavored to afford our students means of improving their knowledge and of broadening their outlook, by holding classes of instruction



Mr. A. Frank Wickson, Toronto, newly elected President of the Ontario Association of Architects.

in planning, designing and construction, offering prizes and conducting examinations.

Last year an exhibit of architectural drawings and designs was held at the Canadian National Exhibition, which proved distinctly interesting and educative. Arrangements have been made for a loan exhibit from the Royal Institute of British Architects at the Canadian Na-

tional Exhibition in September of this year. The large room in the Applied Arts Building will be used exclusively for this exhibit, which we hope will include numerous examples from our Canadian architects. On this account the council decided to have no exhibit at this convention. We hope to have each year some exhibit of the kind at the Canadian National Exhibition, which cannot fail to have a distinctly educative effect upon all of us, but especially upon the more impressionable minds of the students.

The question of higher education for our students has been very earnestly discussed among us, and the Ontario Government has been asked to assist us in establishing a certain standard to which it shall be necessary for persons to attain before entering upon the study of architecture as a profession. The safety of the public demands trustworthy and scientific building construction in all its varied ramifications. Its requirements and moral well-being necessitates well planned and tastefully designed buildings. But the profession should further ask a degree of culture and general knowledge, a sense of honor, and a regard for ethics, not *only* professional but a tone that would seem to be best secured by a university education.

To attain this we should require that the student should enter an architectural course at a university before obtaining admittance to the office of any member of this Association.

It is to be regretted that up to the present the University of Toronto has been unable to see its way to establishing a Chair of Architecture, for such a chair, combined with a course in arts, would undoubtedly promote the best interests of our profession. There is a joint committee of our Association and the Toronto Society of Architects appointed to formulate a scheme for the higher education of the architectural students, and you will no doubt receive a report from that committee during this meeting.

There have been various charges made with regard to the safety of Toronto public school buildings, and while we have appreciated as a body of architects for some time the fact that Toronto school buildings in the matter of architectural design have been inferior to almost every other type or class in buildings it is customary to erect in Toronto, the question of safety of the school children is one which has never been widely discussed by us as an architectural body. We owe it to ourselves as well as the public at large to make an investigation into just what protection is really afforded the children in our schools, and a committee of our Association has been appointed with this object in view.

In October last we had the pleasure of granting the use of our rooms to the Royal Institute of Canada, in which to hold their second annual assembly, the Toronto Chapter of our Association inviting the assembly to lunch both days of their meeting. A committee of our Association was appointed to confer with the Royal Institute to discuss the subject of affiliating with the latter body. A report from that committee will be submitted to you during this meeting.

I am proud to say that our Association is progressing splendidly, and will eventually, I am sure, succeed in attaining its main object, that is, the elevation of the profession to the plane which it properly deserves by the educating of the student and the awakening of public interest.

I regret that the members of our Association in the cities of Hamilton and London have not yet formed local chapters, for I feel certain such chapters promote the best in the way of good feeling and fellowship among its members as well as strengthening the Association as a whole. I feel that the past year has developed an excellent spirit among the members of our profession, no doubt due greatly to the social intercourse we enjoy through the local chapter.

In conclusion, gentlemen, I must thank you again for

the honor you did me in electing me your president for the past year. The members of the council have been very assiduous in their attention to the duties devolving upon them, and have given freely of their time and thought to the Association's welfare.

Reports were received from the various committees, which showed among other things, that the membership of the Association is at present 87, of which three are honorary members, 49 regular members, and 35 regular members in other places.

Examinations had been held during the year, and which five students passed the first examination, five passed the second, and one, Mr. W. D. Chown, passed the final examination. It was also shown by the report of the Treasurer, that the Association had a balance on hand at the present time of \$773.97.

These reports were all adopted, with little comment.

Title "Registered" Discussed.

There were three important questions before the meeting, first, the motion to apply to the Legislature to change a portion of the charter, in eliminating the title "Registered" in connection with Architect, and using in its stead, "Member of Ontario Association of Architects." The reason given by the movers of this motion, was that the title "Registered" has been very little used by the members of the Association, either in connection with their signs denoting the location of their offices, or on their stationery, and that the title "Member of Ontario Association of Architects," had been used by 75 per cent.; that there were members of the profession, who at present did not belong to the Association, that objected to the title "Registered," and who had stated their willingness to join, providing the title "Registered" be eliminated. It was thought by some of the members that, in so far as the title "Registered" had become obsolete, as far as a large number of the members of the profession were concerned, and that, in view of the possibility of securing to the Association a number of highly desirable new members, the change should be made. However, it was pointed out by the Ottawa Chapter, that they had used the title since it had been granted and protected by the Ontario Government, and felt that it would be a hardship as far as they were concerned, after having established their practice under "Registered Architect," to have it taken from them. Mr. Horwood, who represented the Ottawa Chapter, showed no hesitancy in declaring very plainly the feeling of the Chapter which he represented on the matter. Other members from smaller towns declared that the title had been used by them in many instances, to very excellent advantage, and did not appreciate having its future use denied them. After some lengthy discussion, it almost appeared as if the Association were going to give up this title for "Member of the Ontario Association of Architects," but after a careful consideration by many of the members, it was decided that at this time it would be inexpedient to deny the members who had used the title "Registered," the privilege of its future use, and that the matter as it now stood, was in the best interests of the Association in general.

Next Convention.

Another very important matter was the changing of the date of the annual meeting, from January to September. This question brought forth a large amount of discussion, the members being very anxious to thrash out the several points in connection with this very radical change. The reason given for the change was to enable the members from various portions of the Province to come to Toronto and view the Architectural Exhibit that will be held at the Canadian National Exhibition, under the auspices of the Association. It was believed that the holding of the Convention at that time, would not only serve to secure a larger attendance of members from outside towns, but would also increase the interest in this exhibit at Canada's greatest Exhibition, which the architects are so anxious to make one of the finest annual

architectural exhibits on the continent. It was finally decided that the change be made.

Architectural Education.

The other question that took up a large amount of time was the report of the joint committee of the Toronto Society of Architects and the O. A. A., on Architectural Education. This report recommended that the Association approach the Toronto University authorities with regard to increasing the facilities for architectural education. The report also gave the curriculum they suggested as being the best to adopt by the University authorities in their Department of Architecture.

Prof. Wright, of the University, who was present, gave a very excellent talk, in which he outlined the history of the Department of Architecture in the University, from the date of its inception. He followed very carefully the progress that had been made by this department. He was free to admit that the scientific and mathematical side of the profession had been given prominence over the æsthetic branch, but pointed out that this was really what the Ontario Association of Architects asked the Province of Ontario for in 1887 or 1888. He was free also to admit that the Architectural Department had not expanded as it should have, and that the changes in the Government, and many other incidentals, had prevented the matter of architectural education being taken up separately. However, the whole question of University Education had been taken up by a Royal Commission which had reported. As a result of that report, the University organization was on a different basis. The new Board of Governors and the new President had been in office but a short time. He believed, therefore, that while they were taking up the whole matter of education, the present time gave a very excellent opportunity of taking up the matter of Architectural Education.

Mr. Wright went very thoroughly into the Departments of Architecture in the larger Universities in the United States, and traced the manner in which they were first established, and pointed out the lines along which they had grown. He believed that if the members of the Ontario Association and members of the Toronto Society of Architects, would join hands and approach the University, and say to the University authorities, "Gentlemen, we demand that the Department of Architecture shall be developed along the line of design and æsthetics," he believed they would accomplish it. Mr. Wright went into the present facilities that they have at the University, and stated that they had at present on their staff, a lecturer, a Toronto University graduate, who has had office experience and office practice, who had taken a summer course at Harvard University in design, and who spent six months in solid work in Paris last year, and that he was making very excellent progress with the students.

He also pointed out the very excellent library the students at Toronto University had access to, which was in charge of Mr. Langton, brother of Mr. W. A. Langton, the architect, and whose sympathies were with architecture. The department had grown, the work had grown, and he hoped it would always grow. He wished the members of the profession, as well as the members of the staff of the department, would seek for the best that was obtainable in architectural education.

Mr. Wright's remarks were followed by considerable discussion as to just how the University should be approached. It was finally decided that he report be adopted, as presented, with some few changes.

Prof. Percy E. Nobbs gave a paper, published elsewhere in this issue, on "Architectural Education in Canada," that was well received, and proved most interesting.

Mr. John M. Lyle, of Toronto, gave a very excellent paper on "Architecture and its Relation to Art," which is also published in this issue.

Another paper was read by I. S. Macdonald, entitled "The Architectural Profession from the Outside."

Annual Banquet.

On Tuesday evening, Jan. 11, the Association held its

annual banquet at the National Club, which was one of the most successful in the history of the Association. President Gouinlock and the committee who were in charge of this banquet, are to be congratulated upon its success throughout. The speeches were short, to the point, and full of humor and good nature.

"Our Legislators" was proposed by Mr. M. Symons, of Toronto, and replied to by Mr. A. W. Campbell, Deputy Minister of Public Works.

"Kindred Societies," was proposed by Mr. H. E. Moore, and responded to by Messrs. C. M. Caniff, President of the Engineers' Club of Toronto; John Ewan, President of the Guild of Civic Art, and C. H. Acton Bond, President of the Toronto Society of Architects.

"Our Guests," was proposed by Prof. C. H. C. Wright, of Toronto University, and responded to by Prof. Nobbs, of McGill University, Dean Galbraith, of the Faculty of Applied Science, and Messrs. John M. Lyle, of Toronto; E. L. Horwood, of Ottawa, and Arthur Dennis, President of the Toronto Builders' Exchange.

Officers for 1910.

New members of the Council, elected, were as follows:—Mr. A. E. Nicholson, St. Catharines; Mr. Jules F. Wegman, Prof. C. H. C. Wright, Toronto. The following officers were elected for 1910:—President, Mr. A. Frank Wickson; First Vice-President, Prof. C. H. C. Wright; Second Vice-President, Mr. Henry Sproatt; Treasurer, Mr. Grant Helliwell.

The members of the Association regretted very much the resignation of Mr. W. R. Gregg, who had served the Association as Registrar very faithfully for the past ten years. His successor has not as yet been appointed.

It might be said that the 1910 meeting, as a whole, brought one thing out very clearly, and that is that the Ontario Association of Architects are year after year getting within their grasp more thoroughly, the problems which affect the profession of architecture in Ontario, and it is to be hoped that the coming year will show still greater progress than the past, and that, at least, some of the many things that still have to be accomplished by the architects in Ontario, may be realized. Mr. Gouinlock, retiring President, had done some very active work during the past year, and one of his greatest accomplishments was the bringing into closer touch the members of the Toronto Society of Architects and the Ontario Association. We believe that the time has come when the architects of Ontario should bury their hatchets and get together on a common, solid, practical basis, for the purpose of developing the interests of the profession in this Province.

ARCHITECTURAL EDUCATION IN CANADA

By PROF. PERCY E. NOBBS

OF THE MANY KINDNESSES and encouragements I have received at your hands, your president's request to me to speak on "Architectural Education in Canada" is the greatest compliment. I assume it is not an historic retrospect that you desire of me, but rather a statement of what I consider may be done in this field of activity to-day, with some reference to what we should aim at on the morrow, that was implied by the addition of the words "in Canada" to the phrase "Architectural Education"; for architectural education among us is just beginning, and it is a good time now to consider whether the foundations we are laying are adequate to their future loads. To save your time, and mine, I shall adopt a somewhat dogmatic method of exposition, which I trust will have the incidental result of bringing out some criticism and discussion. I knew there is another side to all the aspects of the questions with which I shall deal, and I have the deepest respect for the views of my most direct opponents. What I feel is not so much that we of the Unacademic School mis-

understand our Academic friends, as that they are uninformed about our principles. This opportunity is therefore doubly welcome to me.

I shall try to divide the question before us into two parts: (1) College work, and (2) Outside influences. I use the word "outside" advisedly, for I am here, I know, in virtue of my post at McGill University.

To begin with, I suppose we are all agreed that it is desirable that every professional man should take a college course if he can afford it, an ordinary Arts course if possible. As very few can afford that luxury of time and money, the next best thing is to devise university work in connection with professional study. Of course there are lots of people about a university who can say a good deal to prove that technical and professional training is essentially different from, and of no service to, general culture; and there are lots of professional people who are quite eloquent on the uselessness of theoretical training in comparison with what they call "practical work." Still, the compromise has much to be said for it. It all depends, like the cherry, on the spirit in which it is offered. Now a "School of Art," as the term is understood to-day, is a different thing from a "Department of Architecture" at a self-respecting university, and yet the department of architecture has to do some school of art work.

By a school of art we mean a place where young people (for the most part of inferior education. I am sorry to say), are taught to be very skilful at drawing in various media, charcoal, water color, oil paint, and at modelling in clay and wax and at designing imaginary buildings and representing their intentions in black and white; a school of art is, in fact, a place where people learn a good deal of slight of hand and slight of eye, and very little about things in general, past, present and yet to be.

Now, of course, we all know that one cannot either study, gain experience in or achieve architecture to-day without great skill in drawing, and this takes an unconscionable time to acquire. Some departments of architecture at American universities try to be just schools of art in this sense, and I think their success as schools of architecture is in inverse ratio to their success as mere schools of art. The public, alas, understands by the word art just drawing, and I have used the word so far in this narrow and vulgar sense.

The school of architecture should require a very fair performance in draughtsmanship of those who come to it to study; its teaching must, of necessity, be largely conducted through the medium of drawing and its graduates should incidentally go out far better draughtsmen than they went in, but it is no part of its business to teach drawing as a thing in itself, or to teach anything by drawing which can be taught in a more rapid way by other methods. The graduate must be turned out ready to be a useful office hand, but the success of the school is not to be gauged by the good office hands it turns out, but by the progress of these good office hands to positions of trust and responsibility and independence after leaving college. Design, and not drawing, is the main end of such a department. Those things which tell in later life when a man begins to think for himself are what the school of architecture has to do with. Drawing is a matter for the school of art and the office to teach.

Perhaps I have labored this point unnecessarily, but the good of the art must be thought of apart from the good of the existing members of the profession when we talk of education. Cultivated gentlemen cannot be produced except by accident, by a system which prides itself of teaching all that an architect need know "*par le crayon*"—by the pencil. This question of drawing being disposed of for the present, let us consider the branches of study in an Architectural Department of a University. They are six in number:

(a) Design; (b) Aesthetic; (c) Archæology; (d) Science; (e) Construction; (f) Professional Practice.

Design.

Design can, of course, only be taught "by the pencil," and I am of opinion also that it should only be taught by people engaged in the active practice of their profession, and that it is an honor to be allowed to teach it. In this I concur most heartily with the official views of the A.I.A. Also, there is only one best way of running design classes, and that is by the accepted Beaux Arts method of sketches done without assistance, elaborated under criticism and guidance. At the beginning, frequent subjects, though they result in nothing that can be exhibited to passing strangers and give the teacher much to ponder over, lead, I think, to more rapid progress than the elaboration of what must of necessity be poor designs. It is practice in getting ideas together and knocking them into shape that a school of architecture can give. Time enough will be found in offices to learn to make a complete set of drawings.

Aesthetic.

Aesthetic may sound rather a portentous word, but it is useful as including the theoretic studies which may with advantage be associated with work in design. The elements of architecture, the theory of design and theory of planning, and, I think, ornament and decoration (if the arts of the ornamentalist are considered in relation to material and technique, and not historically) may be grouped under this head. A sketch of my courses in these subjects will develop the view I take, so I must ask your indulgence while I explain what is, after all, a personal matter of opinion and prejudice.

The things that really matter for the expression of sentiment in building (and that is a fair definition of architecture) are proportion and scale above all things. Next come such matters as refinement, grace, breadth, and all the more or less abstract qualities of character. The meaning of these things should be learned early in order that criticism may be understood and historical examples be appreciated. Then there are the material elements—masonry and roofing and vaulting, etc.—and the physical elements—plinths, voids, solids and features to consider. By the principles of composition, the chief of which is unity, something can be taught of the instinct whereby all these abstract, physical and material elements can be composed in one thing, revealing meaning and emotion, through mere sensuous beauty of line, form, mass and color. That is what I mean by the elements of architecture.

The theory of design may be taken to mean the first principles of art and their application to practical design. The senses, the phenomena of pleasure and pain and expression explain the art impulse. Beauty and its relation to the arts through subject matter, emotional content and physical media affords a basis of appreciation and criticism. Pure design in nature and in art and ornament, with its moral or significant aspect and its material logic, throw light on the evolution of architectural form. Such matters are in the domain of philosophy.

The theory of planning affords practice in methodical thinking—dimensions, arrangement, scales, aspect, prospect are common considerations for all problems. The study of domestic art illustrates the evolution from simple cottages to complex mansions of what is after all one organism—the house. Ecclesiastical art shows small differences of use affecting vitally the layout of typical examples within one class of problems. Libraries fire stations, hospitals and the like show extreme specialization of type, while public buildings on analysis afford good illustration of various nationalistic sentiments expressing themselves almost independently of use and pur-



Traders Bank of Canada, Head Office Building, Toronto. F. S. Baker, F.R.I.B.A., and Carrere and Hastings, Associate Architects.

THE WORK OF F. S. BAKER, F.R.I.B.A.—A Canadian Architect Who in His Work Has Shown a Consideration for the Utilitarian as Well as the Aesthetic.—A Business Man as Well as an Architect.—His Own Story of His Professional Career.



North Transept, Wells Cathedral.

FEW VISITORS who are entitled to consider themselves architectural critics, come to Canada without being impressed with the architecture of our country, generally. As in other new countries, our designers have made mistakes, and we have the bad work as have other countries, together with work of a more creditable character. As a rule, however, we are safe in saying that, while we have not as yet developed a Canadian architecture, our buildings in the matter of both design and construction, give evidence of culture and good taste, together with the stable characteristics of our people.

During the two years of "CONSTRUCTION'S" career, we have illustrated many individual noteworthy designs by Canadian architects, in an endeavor to reflect as truthfully as possible, the work of Canadian designers. It is impossible, nevertheless, to give any fair conception

of the ability of our Canadian architects, together with the character of their work, through a criticism of one of their individual designs. We have, therefore, decided to make a feature in each individual issue of "CONSTRUCTION," of the work of one or two prominent Canadian architects, with the hope of placing in a concise, readable form before the profession, as well as the building public, the character of work being done by our best Canadian designers. It will not be our policy, in connection with the publication of these articles, to give a criticism of the work of the architect whose buildings we shall treat, so much as to give the architect's own story of his experiences and views in connection with the practice of his profession. The professional development of an architect is indicated by his work as he progresses from year to year, and it will be our object to publish a sufficient amount of the work of each individual architect, to show in the best possible manner, the progressive stages through which he has passed.

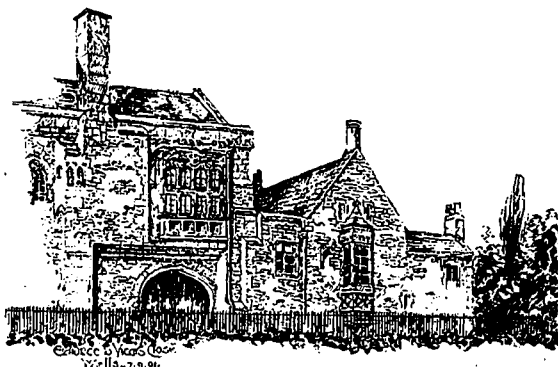
In this number, we are publishing some of the work of Mr. F. S. Baker, F.R.I.B.A., of Toronto, executed since 1902. Previous to this time, his efforts were entirely devoted to partnership interests. Mr. Baker commenced practice in Toronto in 1892, after the completion of a course of study extending over eight years in Canada, the United States, England, and the Continental Countries of Europe. During this time, he took the examinations of the Royal Institute of British Architects in London, and qualified for membership in the Ontario Association of Architects. In the latter body, Mr. Baker served several years on the Council, and for some time past has been the Honorary Secretary for Canada, of

the R.I.B.A. He also is a member of the Council of the Royal Architectural Institute of Canada, the headquarters of which are at Ottawa. It might be said that a great deal of the success of the R.A.I.C., has been attributable to the efforts of Mr. Baker, both in view of the fact that he has been very active in the establishing of the existing status of this Dominion Association of Architects, and also because he was successful in having same affiliated with the R.I.B.A. of England.

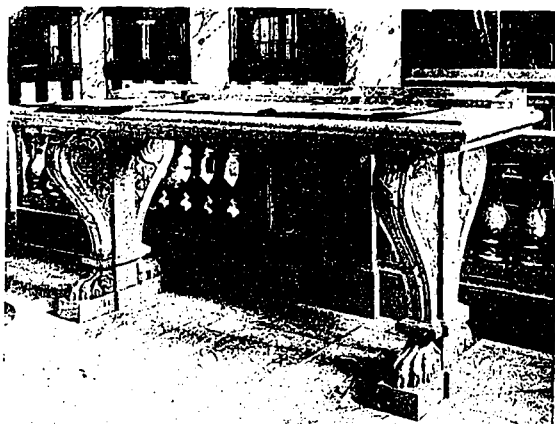
As will be noted in the several designs that are published herewith, Mr. Baker's work is purely of the New World type, meaningless ornamentation and decoration having been studiously avoided. Mr. Baker is a great believer in the necessity of an architect being a business man as well as an artist. He believes that no building, however beautiful in design or decoration, is a success without it is economically planned and constructed according to the most practical methods of modern construction. Mr. Baker is, therefore, a practical business man, as well as a capable architect, and it may be said that it is this type of designer that Canada is at present, in the greatest need of. American architects are successful in securing Canadian work only because they are enabled to shoulder the business end of it, in the shape of merit of investment and practicability of plan, together with architectural design.

While Mr. Baker has religiously carried out in his work, his contention that it is the duty of an architect to equip himself to be able to successfully work out investment from the standpoint of his client, his work demonstrates clearly that he has by no means lost sight of the importance of the aesthetics. His work that covers almost every type of structure bears evidence of an intelligent appreciation of art in architecture. There is not in one of his designs, however, any evidence of an attempt at meaningless ornamentation or elaboration.

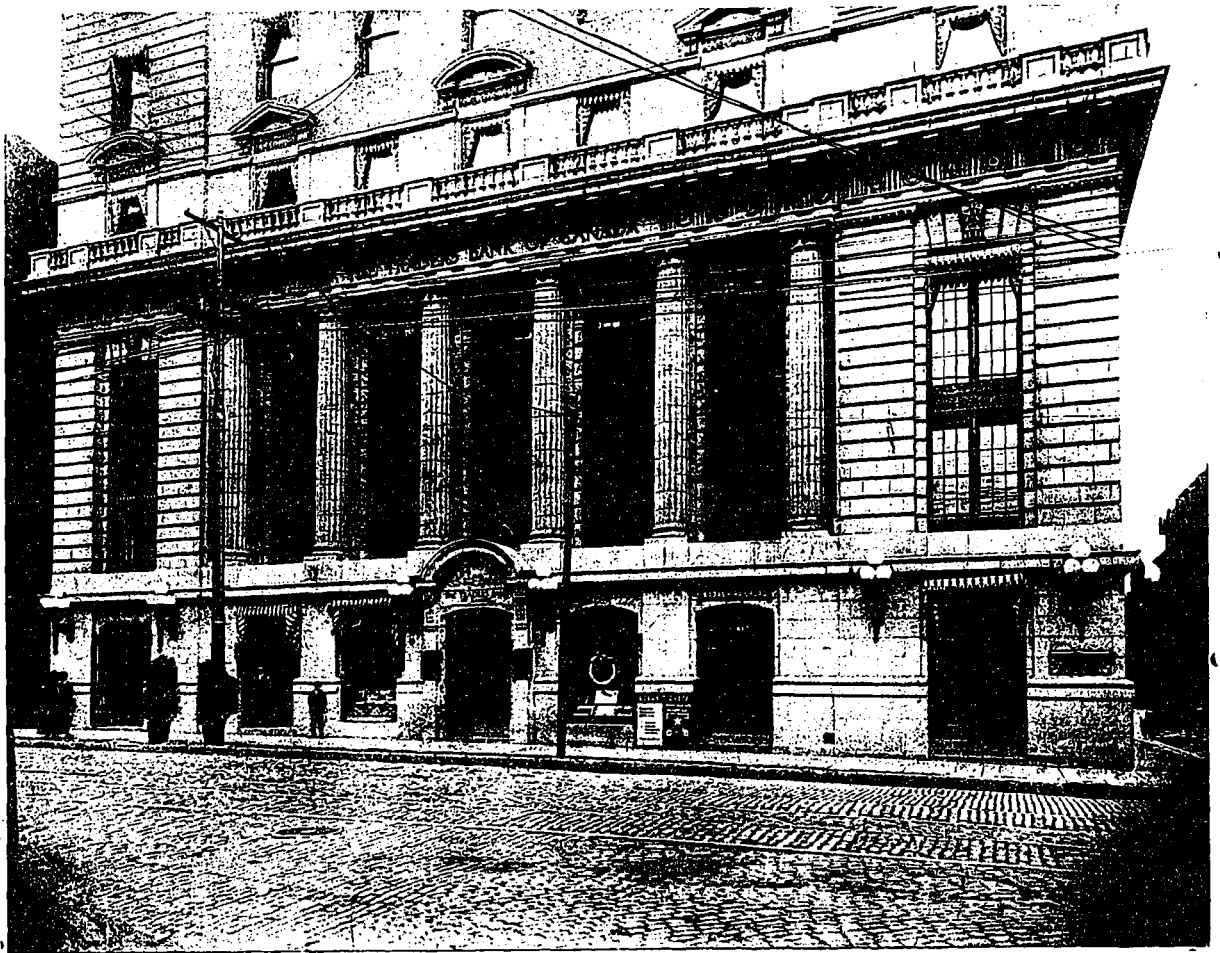
Mr. Baker has taken a most active interest in archi-



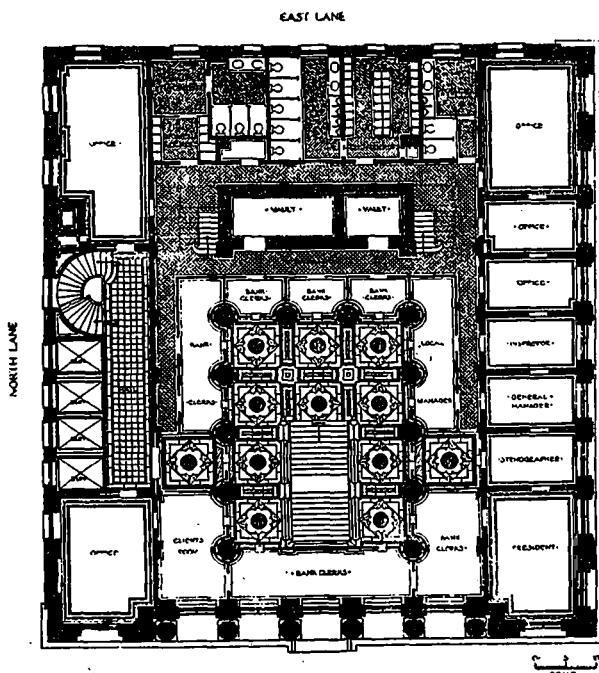
Entrance to Vicar Close. Sketch by F. S. Baker, F.R.I.B.A.



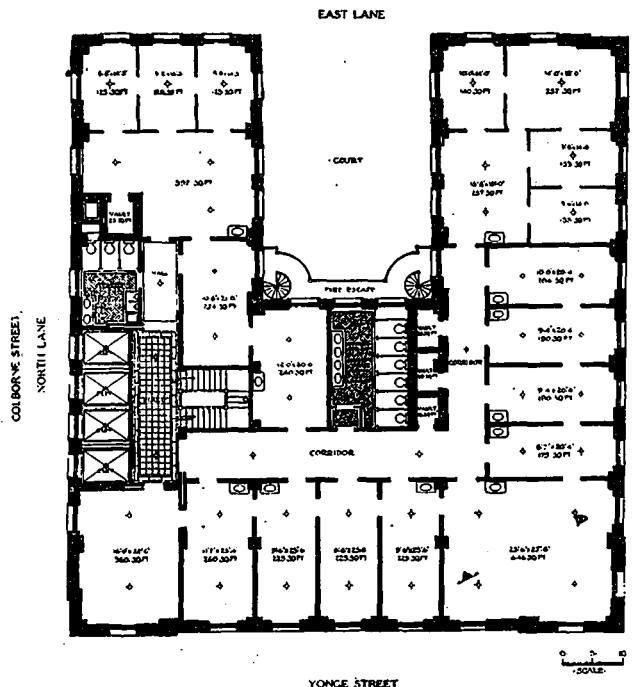
Cheque Table of Istrian marble, Head Office Building, Traders Bank of Canada, Toronto. F. S. Baker, F.R.I.B.A., Architect.



Colonnade, Yonge St. facade, Traders Bank of Canada, Head Office Building, Toronto. F. S. Baker, F.R.I.B.A., and Carrere and Hastings, Associate Architects.



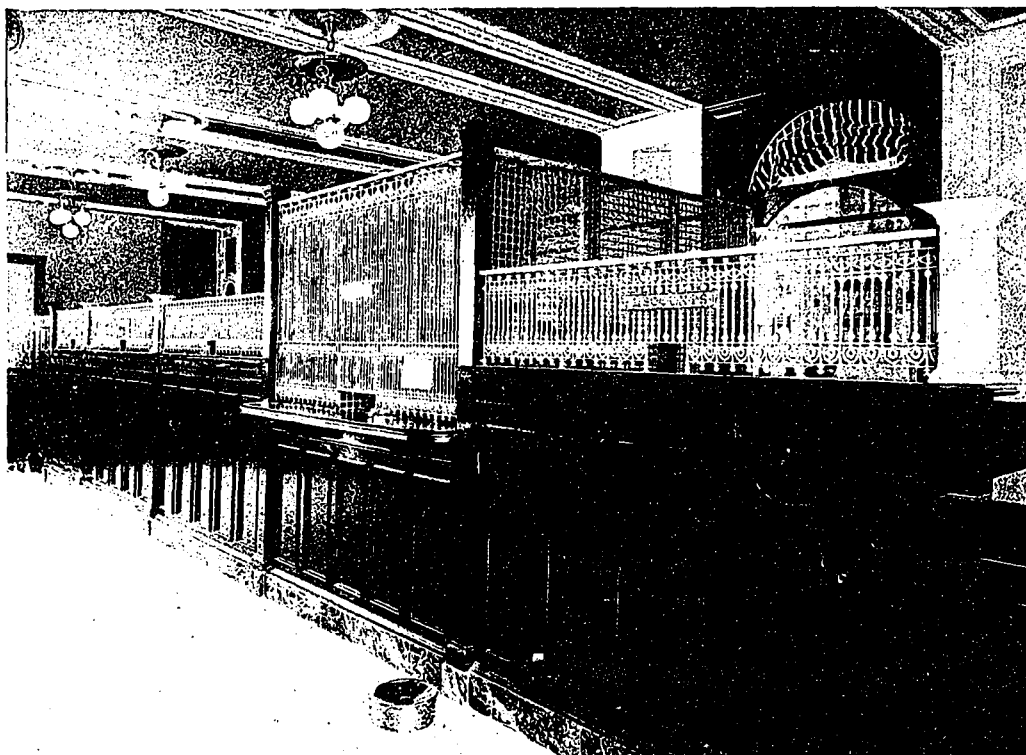
Plan of Banking floor, Traders Bank of Canada, Head Office Building, Toronto. F. S. Baker, F.R.I.B.A., and Carrere and Hastings, Associate Architects.



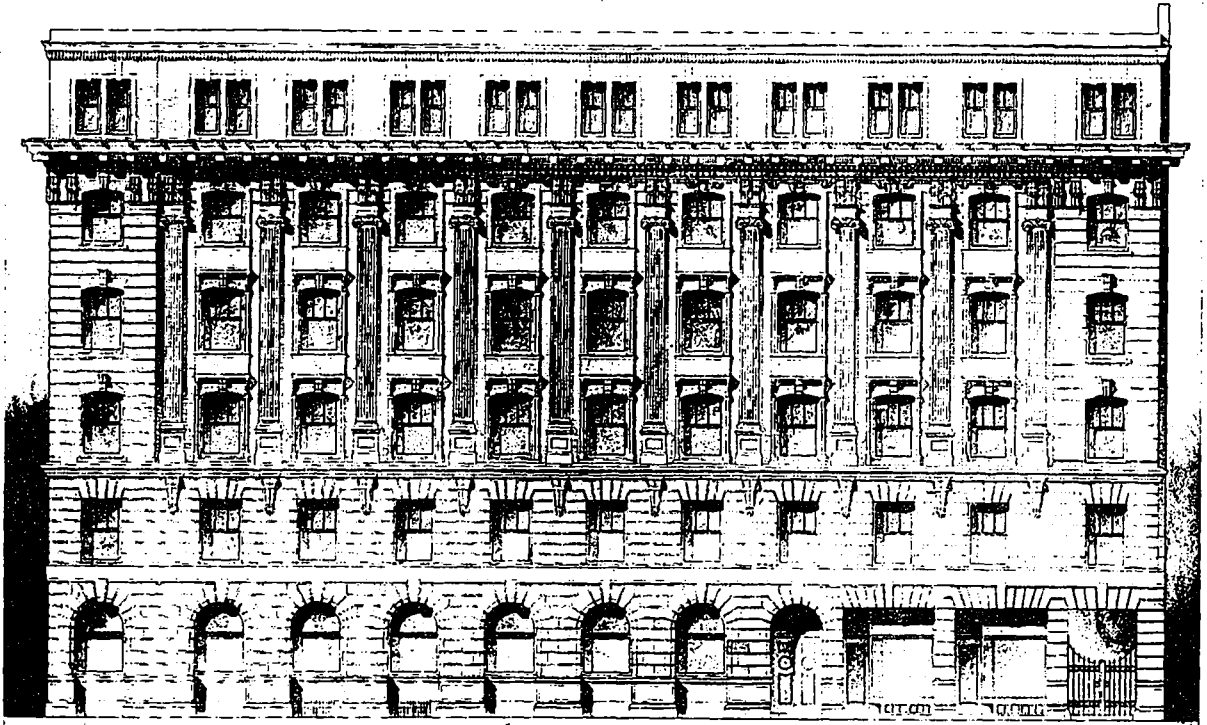
Typical office floor plan, Traders Bank of Canada, Head Office Building, Toronto. F. S. Baker, F.R.I.B.A., and Carrere and Hastings, Associate Architects.



Traders Bank Apartments, cor. Yonge and Bloor Sts., Toronto. F. S. Baker, F.R.I.B.A., Architect.



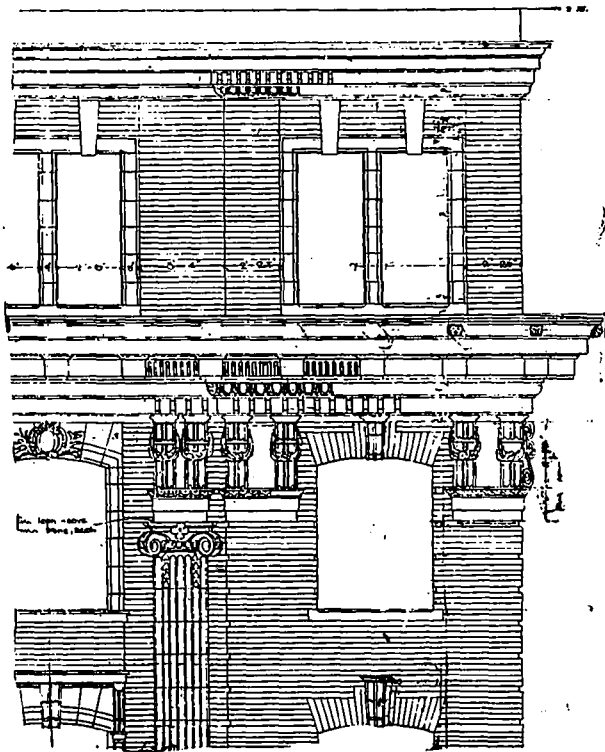
Banking Room, Traders Bank Apartments, cor. Yonge and Bloor Sts., Toronto. F. S. Baker, F.R.I.B.A., Architect.



Bloor Street Elevation, Traders Bank Apartments, cor. Yonge and Bloor Sts., Toronto. F. S. Baker, F.R.I.B.A., Architect.

tectural education and is to be found in fore of every movement that is designed to promote the art and the interests of the profession in Canada and his own story of his professional career as an architect should serve

"As a first year student, I can remember being very much discouraged with the feeling that there was very little in the profesios or study of architecture. Twenty-five years later that feeling seems hard to understand, and yet there is no doubt that the general public are enlightened very little by what they see of an architect's work, either on paper or in buildings. During the first three or four years, the study gets hold of a student by slow degrees, but he is staggered from time to time by the amount of ground which he has to cover and the immense variety of knowledge required in the work. I do not think a young student should remain in one office for a long period. A change is desirable after say three or four years, and then it seems wise to make several changes during the remainder of his time as a stu-



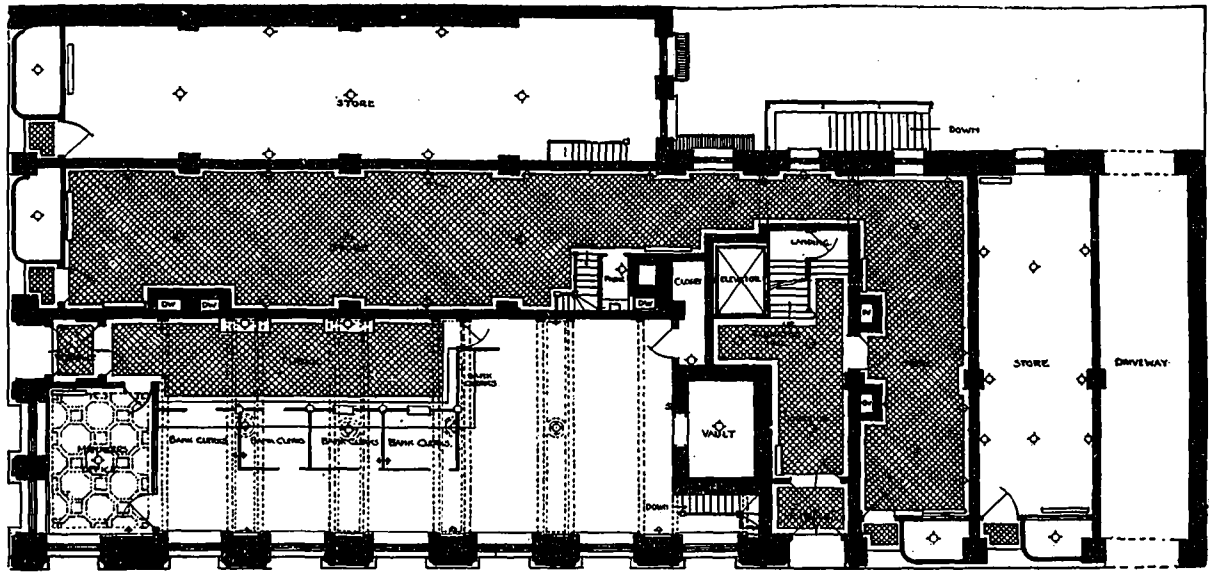
Section of elevation, Traders Bank Apartments, cor. Yonge and Bloor Sts., Toronto. F. S. Baker, F.R.I.B.A., Architect.

as an inspiration for every student in architecture in Canada.

Speaking of his experience as an architect, Mr. Baker says:



dent. This relieves the monotony and enables him to see the different points of view taken by different designers, for after all, the study of architecture is the study of design, the practical work being incidental to a real mastery of the principles of design; thus if a student devotes himself to a careful study of the principles of and practice of design in architecture, he must become a fair builder, because in undertaking the application of design, he must understand the construction. Of course there are men to whom the practical end of an architects practice is distasteful, and who are most comfortable at a drawing board. It is unfair, however, to say that these men are not good builders, as far as the practical knowledge of construction goes.



Ground floor plan, Traders Bank Apartments, cor. Yonge and Bloor Sts., Toronto. F. S. Baker, F.R.I.B.A., Architect.

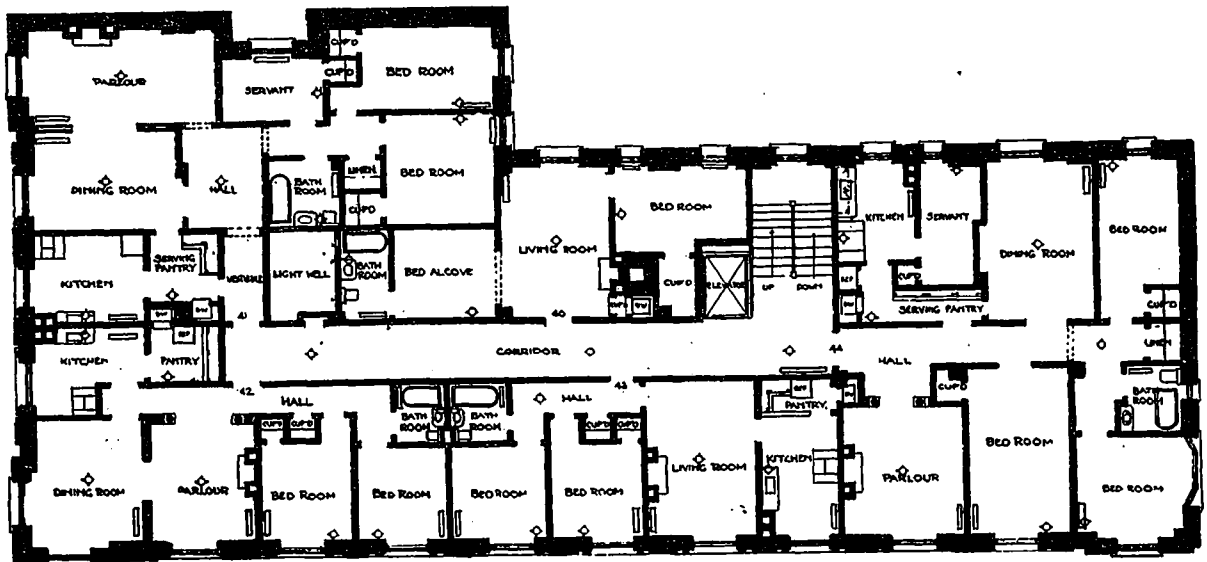
A knowledge of design, however, does not presuppose a knowledge of the executive or business end of an architect's work, and this is where many young architects fail lamentably. Practically a client comes to an architect and says: "Here is a sum of money and I have written on this piece of paper what I require, you will be good enough to invest this money for me in such a way that I will obtain these requirements in proper form." Thus the architect must be a good business man if he is to expend this money in a thrifty manner; he must be a good designer to obtain the requirements in proper form, and a good builder to see them properly put together. When a man is practising alone, I am of the opinion that his success is more likely, if he has more ability as a business man, and less ability as a designer, than the contrary.

During a man's student days, which, of course, includes his days employed as a draughtsman, he sees very little of the business end of an architect's office, and further than that he cannot help seeing the degree of methodical system attached to the routine of the office. The keeping of accounts and the handling of men are

things in which he obtains little experience, unless he includes in his time of studentship, a period as "clerk of works," or "builder's clerk," when an immense amount of useful knowledge is acquired by the student.

Every student should lay himself out to travel abroad as much as he can conveniently arrange. In this way his judgment is immensely strengthened, and his ability to compare and differentiate between good and bad work, is vastly improved. Free hand sketching and photographing of good work is of the greatest value to the student and should be encouraged by all schools: Proportion, fenestration, the application of ornament and features, breadth, grouping and color schemes pass under his eye as he moves from one country to another, and his developing sense as an artist instinctively selects the best as he goes along. He is also greatly benefitted by meeting students and discussing with them the various problems which confront the student, also in attending exhibitions of architectural drawings where a surprising number of good points as to methods in design and rendering are picked up by the observing student.

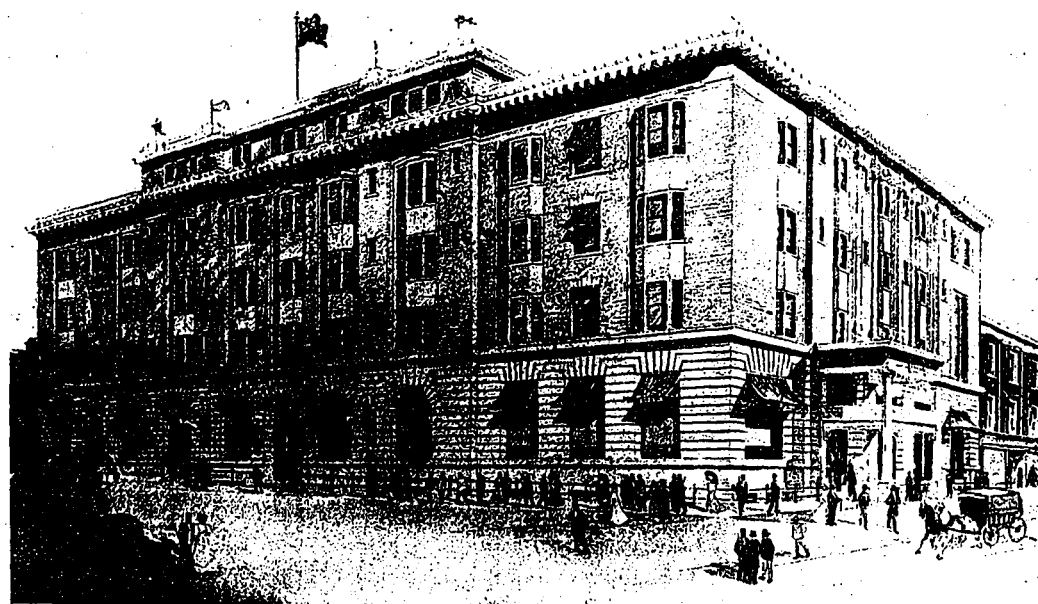
The great desideratum in the student is that he works



Typical floor plan, Traders Bank Apartments, cor. Yonge and Bloor Sts., Toronto. F. S. Baker, F.R.I.B.A., Architect.



Branch premises, Traders Bank of Canada, King St. and Spadina Ave., Toronto. F. S. Baker, F.R.I.B.A., Architect.



Kaiserhof Hotel, Berlin, Ont. F. S. Baker, F.R.I.B.A., Architect.

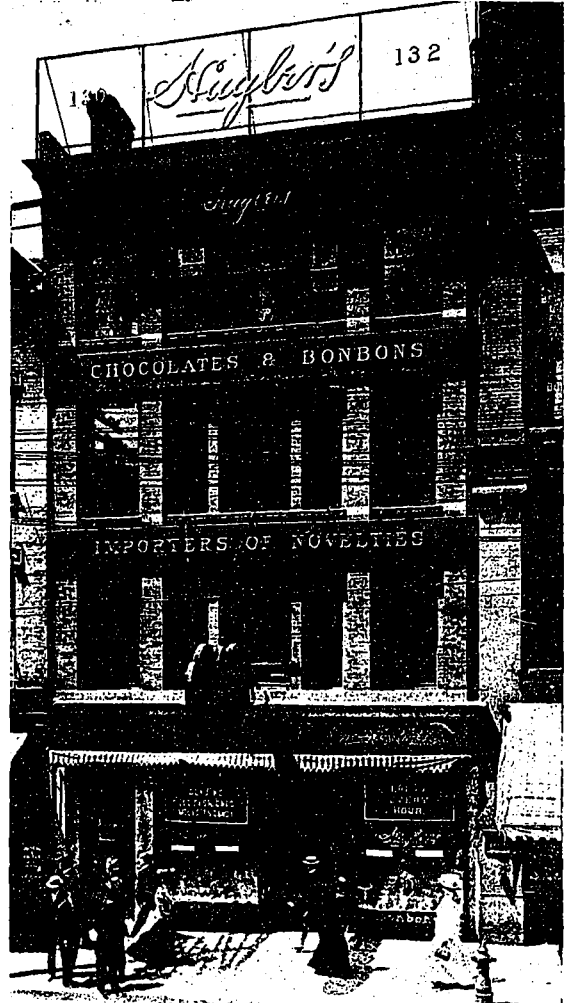
to the limit that his bodily health will stand, applying himself diligently from the very beginning, as the larger the quantity of material he produces, the wider will be his knowledge. The man who commences practice after a very hard working studentship, if he applies the same methods to his work, cannot fail to succeed, barring accident, and the hard workers are generally the most careful in this respect. Culture and refinement, together with physical strength and an ability to convey to the lay mind the artistic intention of the design, both by drawings and explanation I consider of great value to an architect.

I am convinced that the courses of study in the Universities, Art Schools and Classes throughout the world

immense variety of brick work and the different ways in which it can be applied. For residences it is probable that common red stock brick, well burned, laid in a white mortar joint about $\frac{3}{8}$ in. thick, neatly struck with a trowel gives the best result where reasonably large areas of wall surface are treated. The use of red mortar joint or any dark joint is not desirable, inasmuch as it takes away from the character of the brick work, producing a wall of one mass, which at a distance might appear to be formed of other material than brick. For work other than domestic work, many splendid pressed bricks are made in this country and in the United States. I consider they should be laid as nearly like common bricks as possible, for the reasons cited above. In residence work the pressed brick



Warehouse of A. Bradshaw & Son, Wellington St. West, Toronto. F. S. Baker, F.R.I.B.A., Architect.



Huyler's Store Building, Yonge St., Toronto. F. S. Baker, F.R.I.B.A., Architect.

at the present time are doing much to improve the art of architecture.

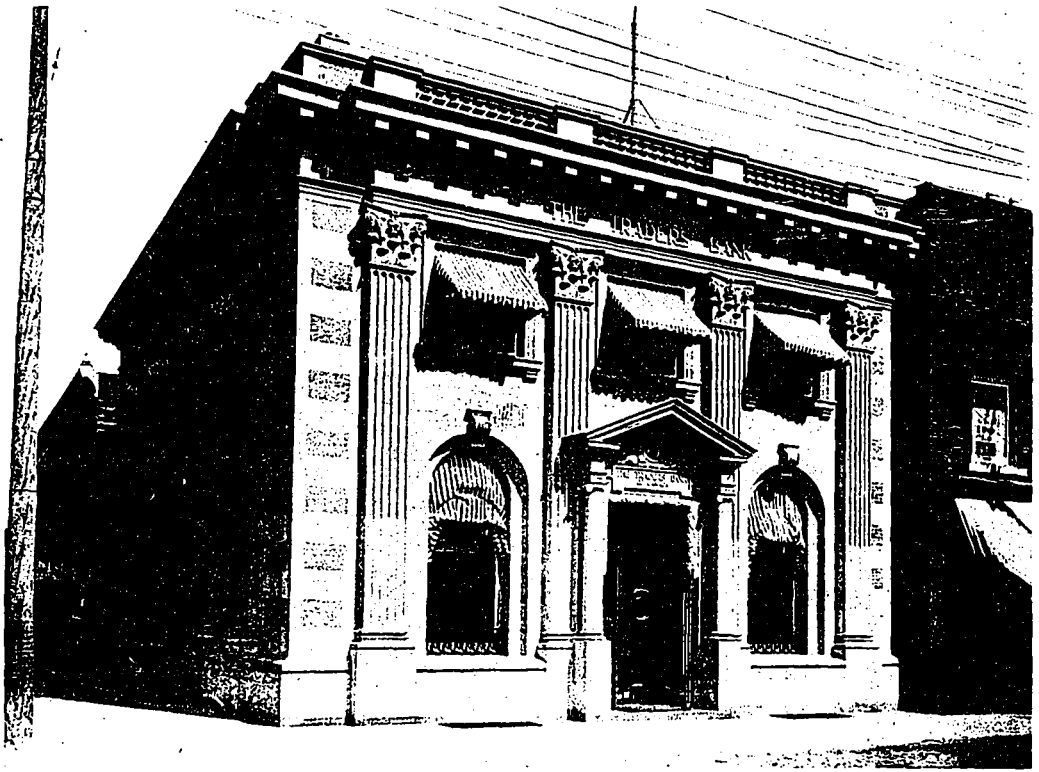
I think the architects of Canada should, as soon as possible, get themselves organized on a national basis, and that conferences should be devoted to the development of a Canadian style of architecture, a style which in all classes of building will be suited to the rigorous weather of the winter months, and to the balmy air of the summer months, a style which should obviously express a country occupied by clean-cut, physically and mentally healthy people, such as the population of this country on account of its nature is bound to be.

Speaking of materials used in the construction of the various kinds of buildings, it is interesting to note the

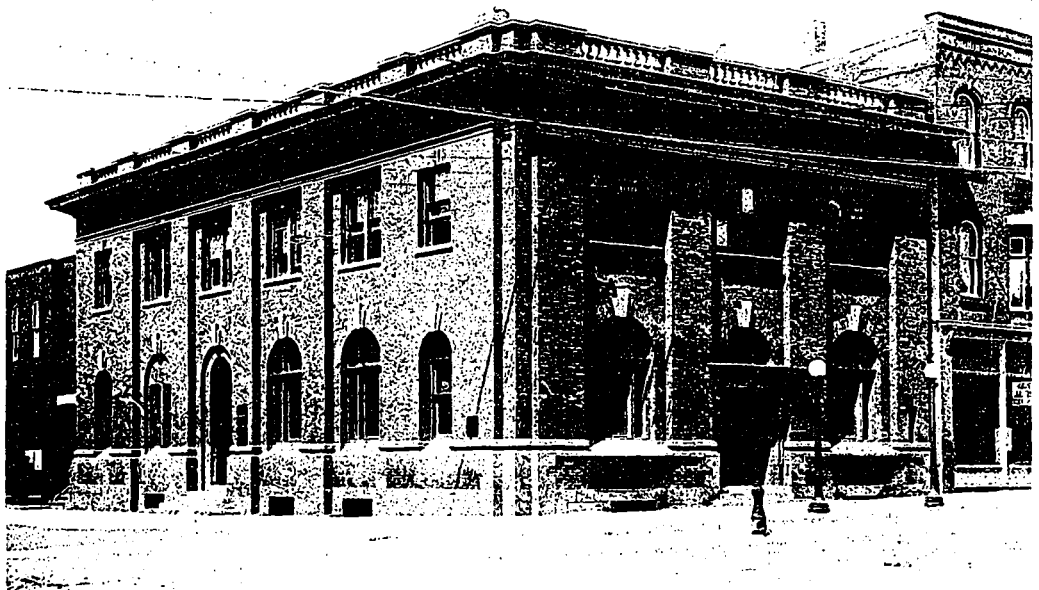
is not so desirable on account of its smooth shiny surface which is not picturesque. The use of deformed bricks which are thrown aside from the brick kiln as useless for exterior brick work, is an absurdity and produces a most incongruous result, obviously a striving after the picturesque which hinders the real artistic result.

From a constructional point of view the bricks obtained in Canada could hardly be surpassed anywhere, indeed, in every respect we are particularly fortunate in its supply of bricks of all kinds.

Stone work of a great number of varieties is also easily obtainable in Toronto and other parts of the Dominion, as are also excellent masons who are thoroughly



Premises of Traders Bank of Canada, Sudbury, Ont. F. S. Baker, F.R.I.B.A., Architect.

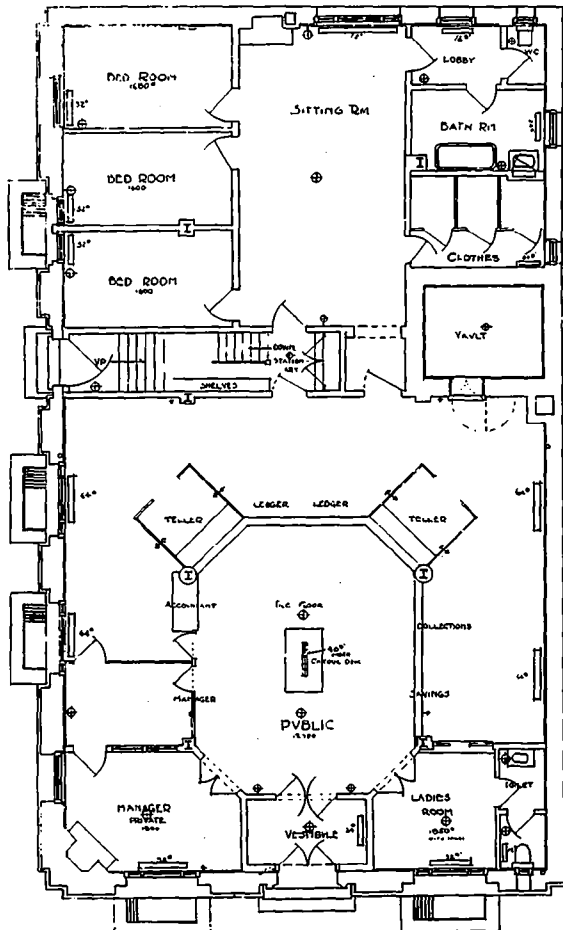


Premises of Traders Bank of Canada, Tillsonburg, Ont. F. S. Baker, F.R.I.B.A., Architect.

capable of faithfully interpreting the architect's ideas. In my experience, the stone mason gives less trouble perhaps, than any other class of mechanic, as regards intelligence in executing work. The neighborhood of Winnipeg is fortunate in having a stone known as Tyndall stone, a limestone resembling, in character, a Portland stone, but contains a beautiful rust brown veining, which I have not seen in any other stone so far. The beds, however, have not been obtained in large enough size to make rubbing a safe finish, but any tooled surface is quite safe. Artificial stone of a high grade is obtainable, and I have used it with considerable freedom in my work. As yet I have to find a case of serious defect in this material, the color of which is very satisfactory.

Lathing and plastering is one of the biggest difficulties an architect has to contend with, but the use of

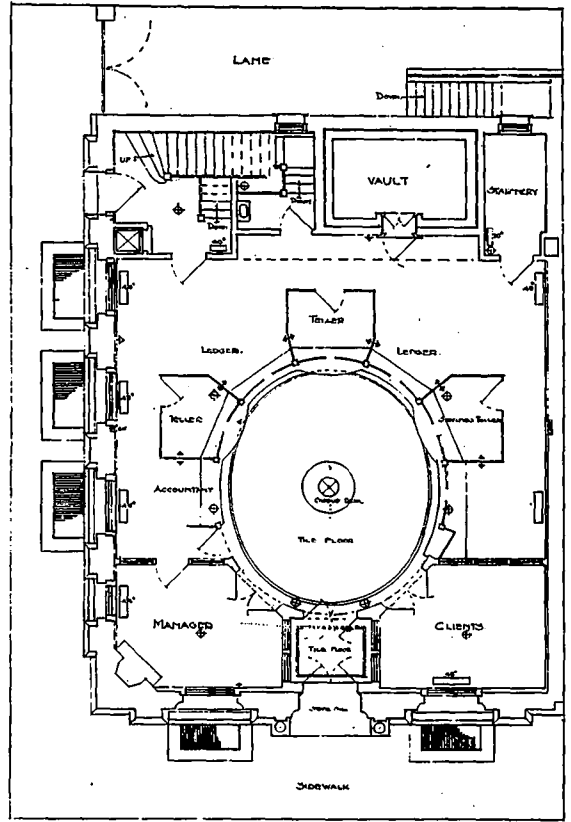
colored by the introduction of coloring matter in the mixing of the mortar. To be satisfactory this must; when



Ground floor plan, Traders Bank of Canada, Tillsonburg, Ont. F. S. Baker, F.R.I.B.A., Architect.

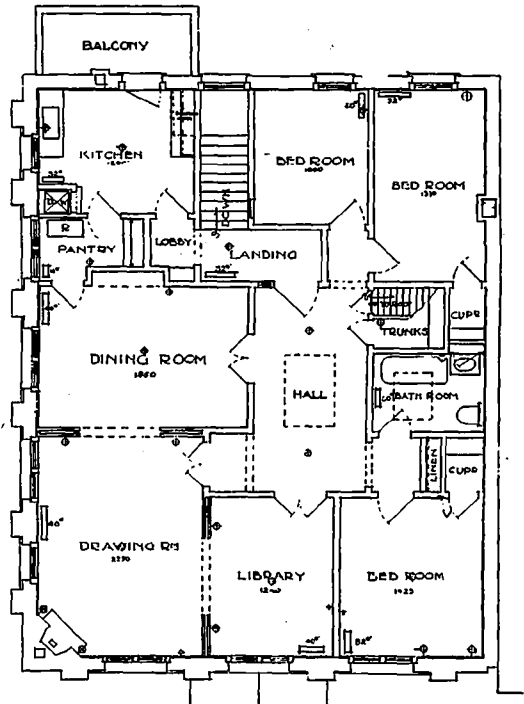
metal lath and cement plaster has given some relief. It is to be hoped that the plaster wall board which is simply nailed to the studding will be obtainable at such a price as to make its use possible in all classes of work where wood studding is used. Ornamental plaster work of the very highest class is now obtainable and is a great boom to the architect. Very nice effects are obtained in residential work with different grades of stucco finish, ranging from very coarse to very fine, and these are managed with either coved ceilings, plaster or wood mouldings. Cement stucco dados are now largely used where wood sheeting was formerly applied.

Stucco plaster is also being used a great deal in various parts of Canada on the exterior of residences, sometimes in wood panels in imitation of English half-timbered work, and frequently in broad surfaces. This is often



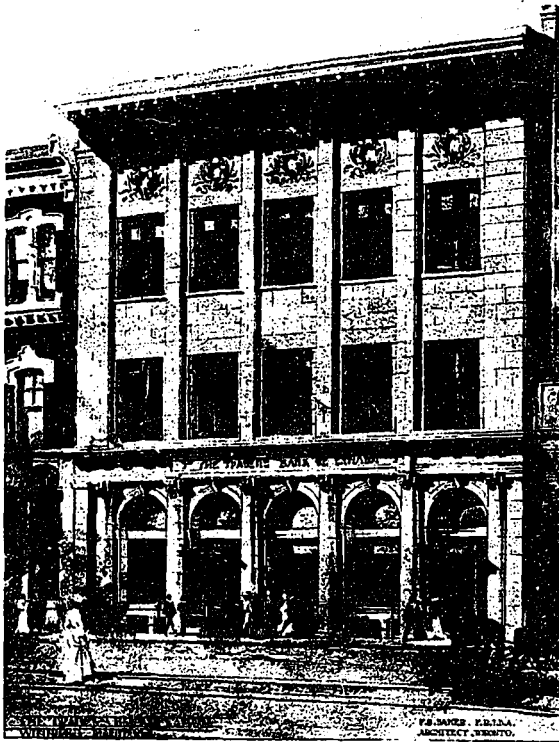
GROUND FLOOR PLAN
Ground floor plan, Traders Bank of Canada, Sudbury, Ont. F. S. Baker, F.R.I.B.A., Architect.

not applied to masonry walls, be used with metal lath. It is obvious that stucco on the exterior of build-



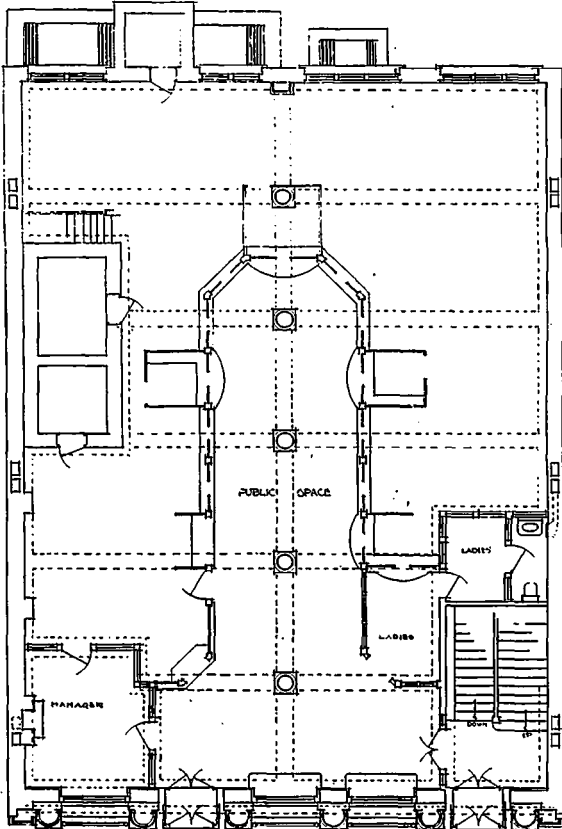
Second floor plan, Traders Bank of Canada, Sudbury, Ont. F. S. Baker, F.R.I.B.A., Architect.

ings will produce a very warm wall. Scrafito work, or modelled plaster friezes, etc., both for interior and ex-



Traders Bank of Canada, Winnipeg. F. S. Baker, F.R.I.B.A., Architect.

terior work, makes a very rich decoration, and it may be said that this part of Canada is fortunate in having

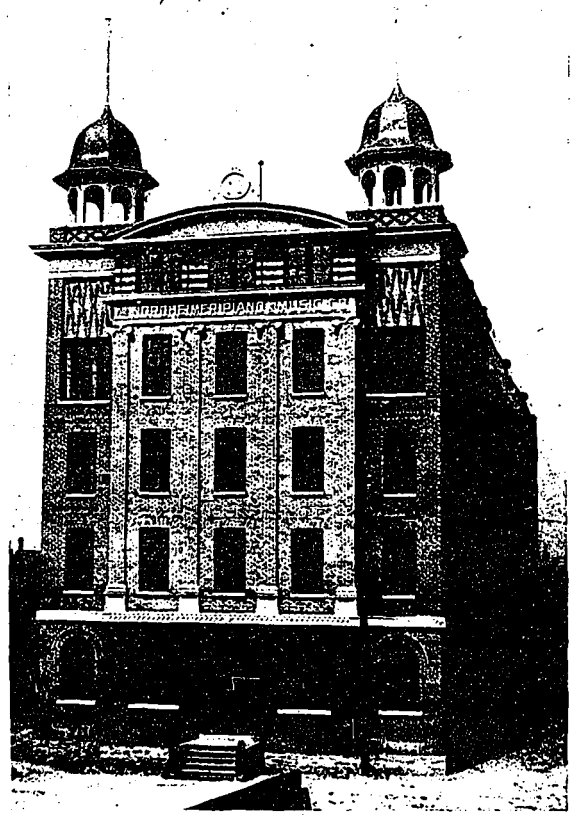


Ground floor plan, Traders Bank, Winnipeg. F. S. Baker, F.R.I.B.A., Architect.

several very clever modellers, a study to which the architectural student does not pay as much attention to as he should.

The great variety of Canadian woods has enabled the architect to produce very interesting effects in the finishing of the interiors of the buildings, thus a residence may have the entrance hall, staircases, etc., finished in quarter-cut white oak, the library may be finished in walnut or in butternut, or in black birch, the dining room may be finished in any of these woods, or in white pine, or southern pine, or sycamore, while the bed rooms are generally finished in white pine with the doors possibly of hardwood.

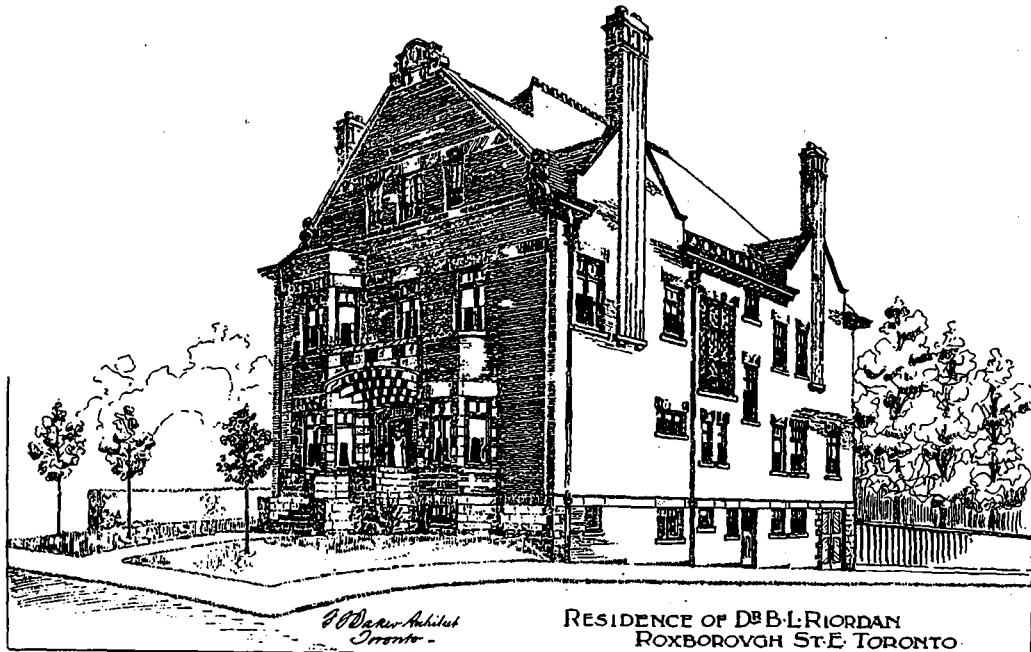
All of these woods can be stained to any shade which the architect may decide upon in considering the decorating and finishing of the various rooms. Floors of hardwood all over are very popular, and these are better to be $\frac{7}{8}$ inch thick at least, rather than $\frac{3}{8}$ inch as sometimes used. The latter produces a hollow sound when



Factory of the Nordheimer Piano and Music Company, West Toronto. F. S. Baker, F.R.I.B.A., Architect.

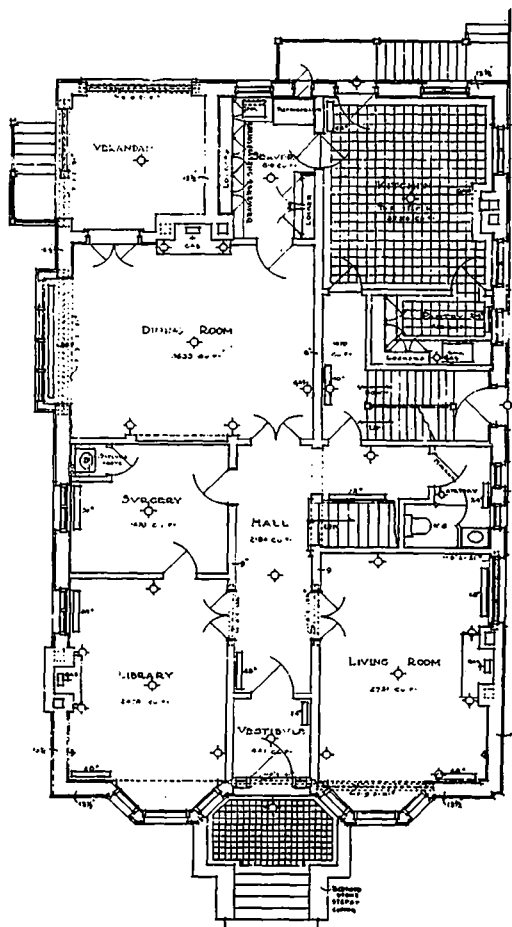
walked upon, and in case of the introduction of any dampness is very liable to warp. Any architect prefers to have borders of hardwood with the centre floor slightly sunk to receive a rug of definite size. This, of course, only applies to rooms which are not intended to be used for dancing.

One of the greatest difficulties which faces an architect in Canada is the method of heating buildings. It is generally conceded that hot water circulation is the best system of heating for a residence. To be comfortable a very large amount of radiation is necessary, and up to this time the placing of radiators in recesses, and under windows, seats, etc., has not been very successfully established. The accumulation of dirt in these recesses being one of the objections and another the obstructing of the radiation of heat, we, therefore, have the large cast iron radiators, (for the pressed steel radiator has

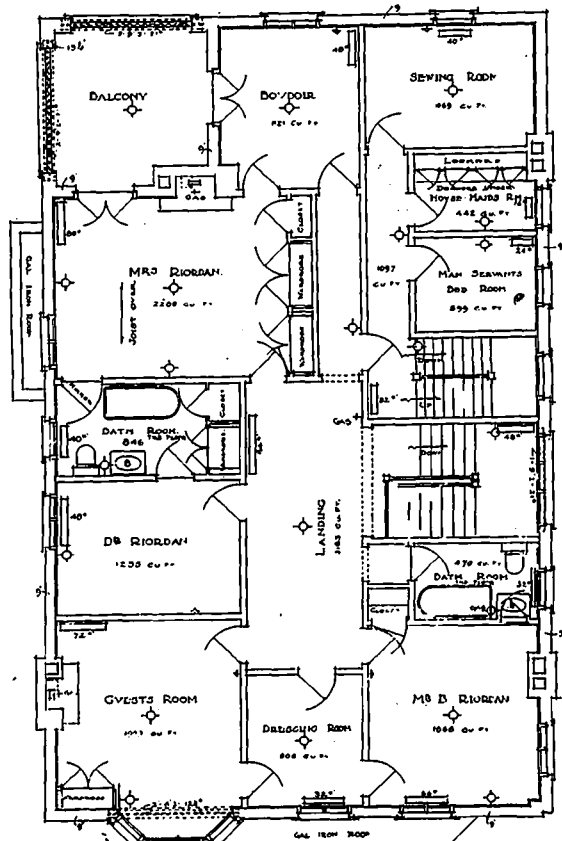


RESIDENCE OF DR. B. L. RIORDAN
ROXBOROUGH ST. E. TORONTO.

Residence of Dr. B. L. Riordan, 1 Roxborough St. E., Toronto. F. S. Baker, F.R.I.B.A., Architect.



Ground floor plan, Residence of Dr. B. L. Riordan, 1 Roxborough St. E., Toronto. F. S. Baker, F.R.I.B.A., Architect.



Second floor plan, Residence of Dr. B. L. Riordan, 1 Roxborough St. E., Toronto. F. S. Baker, F.R.I.B.A., Architect.



*F. O. Darrin Architect
Toronto*

Residence of H. J. Wright, 35 Chestnut Park Road, Toronto. F. S. Baker, F.R.I.B.A., Architect.

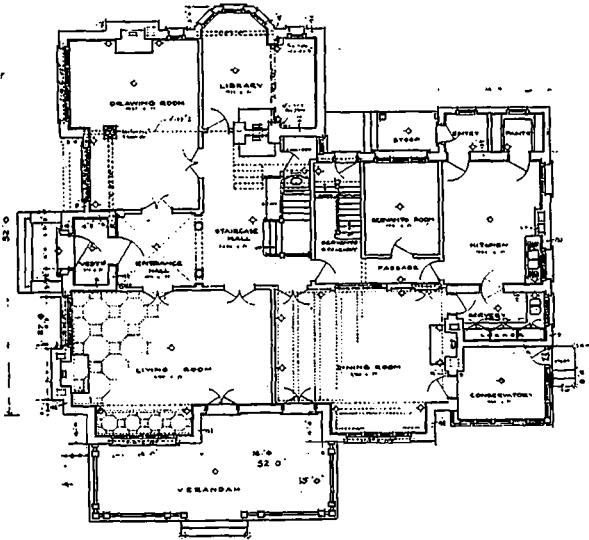


Living Room, Residence of H. J. Wright, 35 Chestnut Park Road, Toronto. F. S. Baker, F.R.I.B.A., Architect.

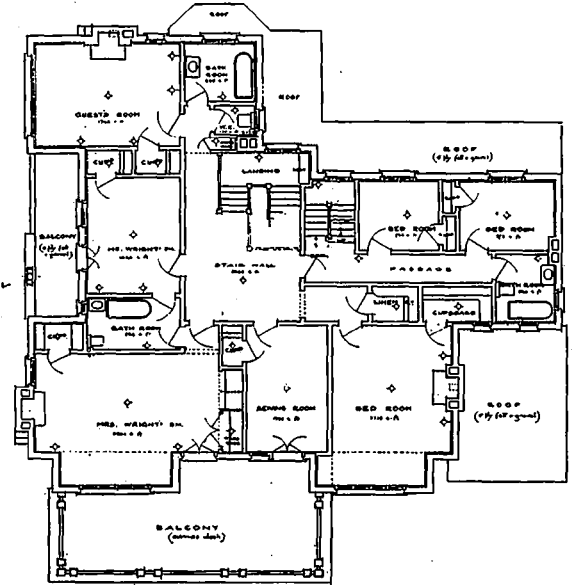
not yet been universally adopted), standing out along the walls, or in the windows of the various rooms, taking up a large amount of floor space and very unsightly. Some success has been obtained by those architects who have neatly detailed wooden shelves placed above the radiators, and these are used by the housekeeper for the reception of bric-a-brac, etc. Indirect heating for houses

order, and in this department no difficulty in obtaining successful heating systems is encountered. The same may be said of hot air heating installations, which in smaller buildings give very satisfactory results.

The universal use of electric light for all classes of buildings, where it is available, has greatly improved their comfort, and the ease with which these lights are



Ground floor plan, Residence of H. J. Wright, 35 Chestnut Park Road, Toronto. F. S. Baker, F.R.I.B.A., Architect.



Second floor plan, Residence of H. J. Wright, 35 Chestnut Park Road, Toronto. F. S. Baker, F.R.I.B.A., Architect.

being very expensive, both in installation and in consumption of fuel, has not been largely used. The lack of moisture in this class of heating is another difficulty which is left for some clever architect to overcome. In public buildings and in commercial buildings, low pressure steam heating on the two pipe system has been found the most successful. It is obvious that in either systems

controlled by switches has added much to the beauty of the interior effects.

It is possible now to obtain a lighting fixture of a very high order, and while they are very expensive, beautiful decorative effects can be obtained in the selection and placing of these fixtures.

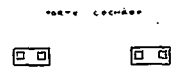
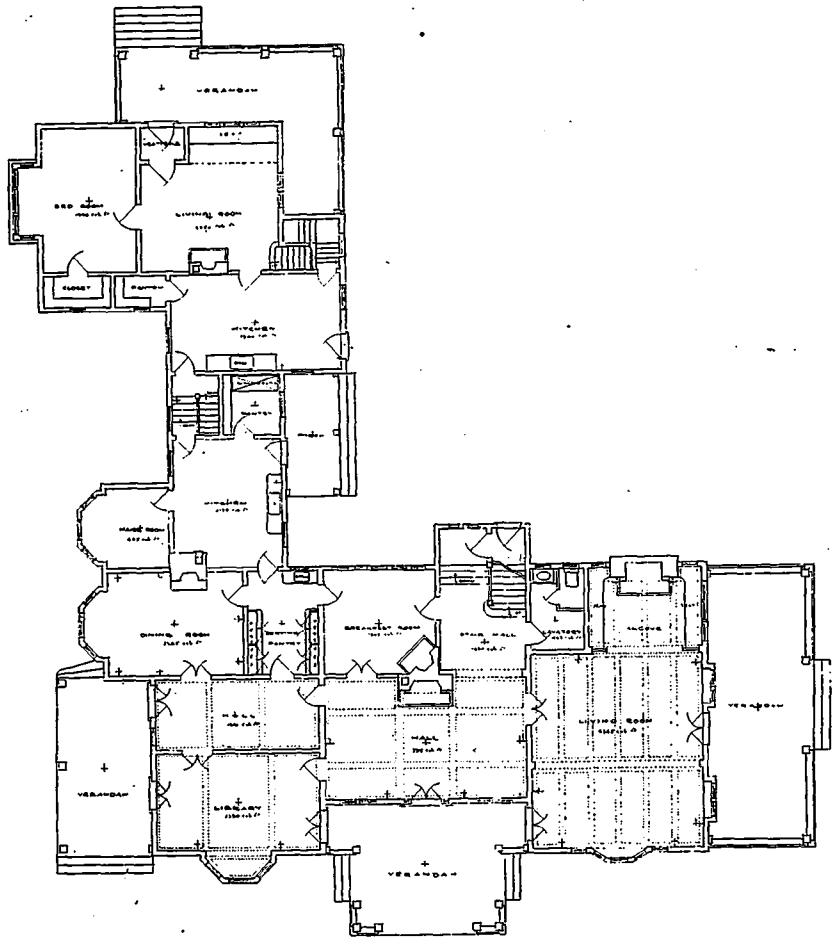


"Grenvilla Lodge," Residence of W. H. Brouse, Lake Shore Road, Oakville, Ont. F. S. Baker, F.R.I.B.A., Architect.

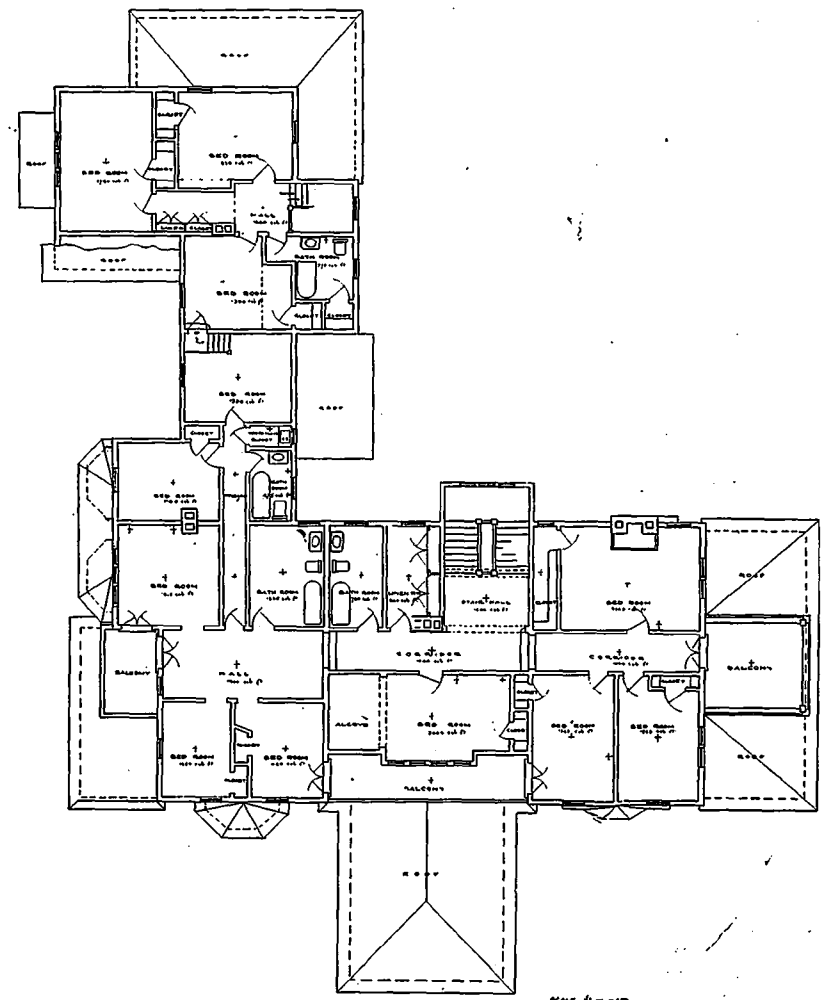
ample valves should be provided to control the various branches.

The various cast iron hot water and steam boilers at present on the market in Canada, are of a very high

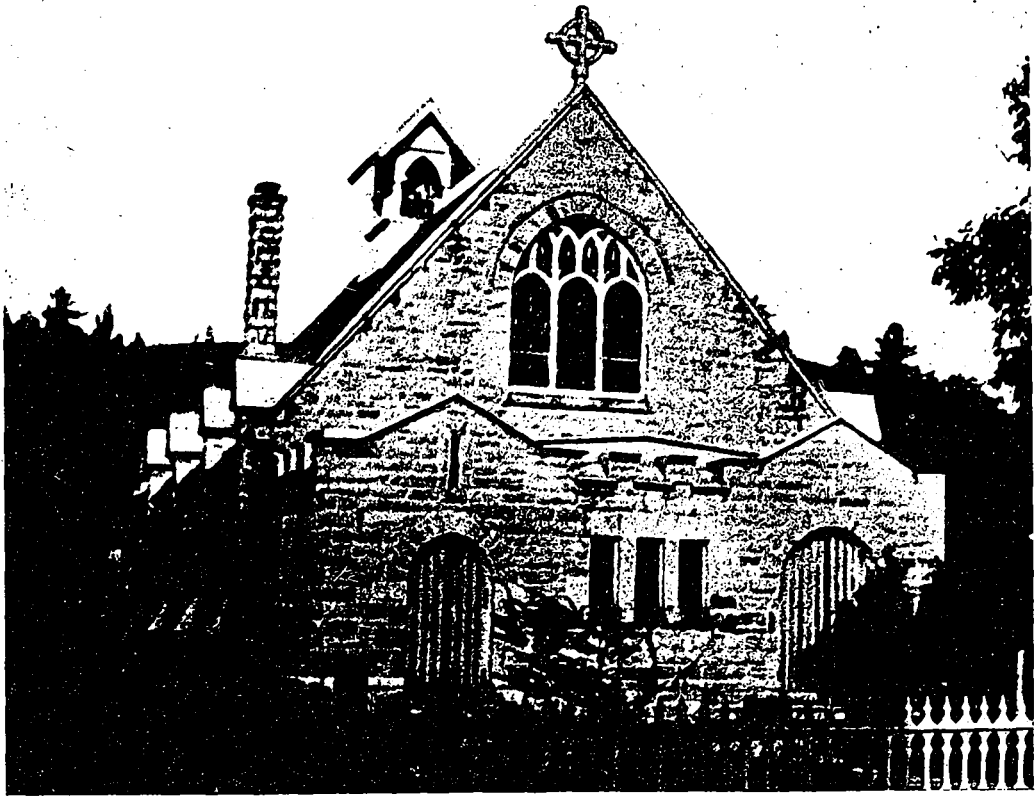
Altogether, casting one's eye over the whole world at the present time, it seems that this section of Canada is very fortunate in respect of all classes of the building materials.



Ground floor plan, Residence of W. H. Brouse, Lake Shore Road, Oakville, Ont. F. S. Baker, F.R.I.B.A., Architect.



Second floor plan, Residence of W. H. Brouse, Lake Shore Road, Oakville, Ont. F. S. Baker, F.R.I.B.A., Architect.



St. Alban's Episcopal Church, Glen Williams, Ont. F. S. Baker, F.R.I.B.A., Architect.



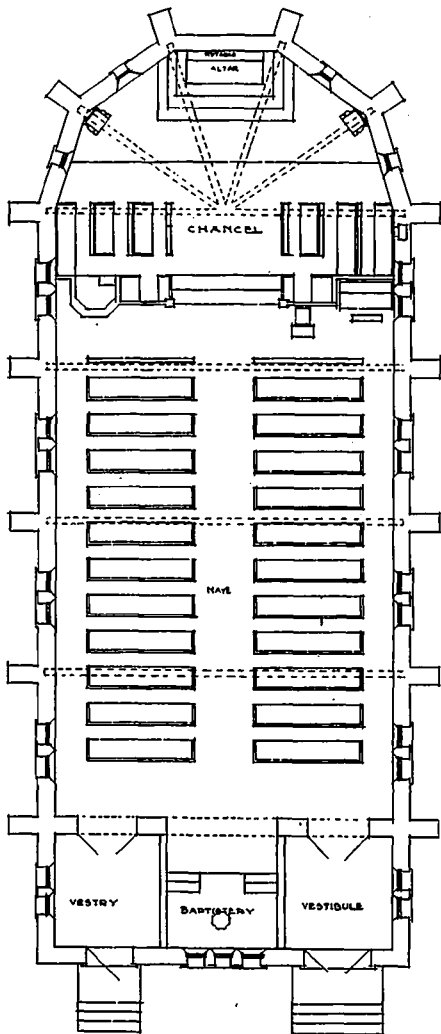
Residence of N. Hillary, cor. Bernard Ave. and Admiral Road, Toronto. F. S. Baker, F.R.I.B.A., Architect.

COPYRIGHT FOR ARCHITECTURAL DESIGN.—Report of Committee in England Favors Extension of Present Law.

THERE IS A movement on foot in England seeking an extension of the copyright law to include architectural design. The committee appointed to consider the advisability of such a step, by a large majority, have come to the conclusion that after due consideration of the evidence, that it is desirable to recommend that architecture be accepted as matter to be protected, both for the sake of uniformity and because it deserves to be protected, and presents no difference in the principle from that applicable to the sister arts.

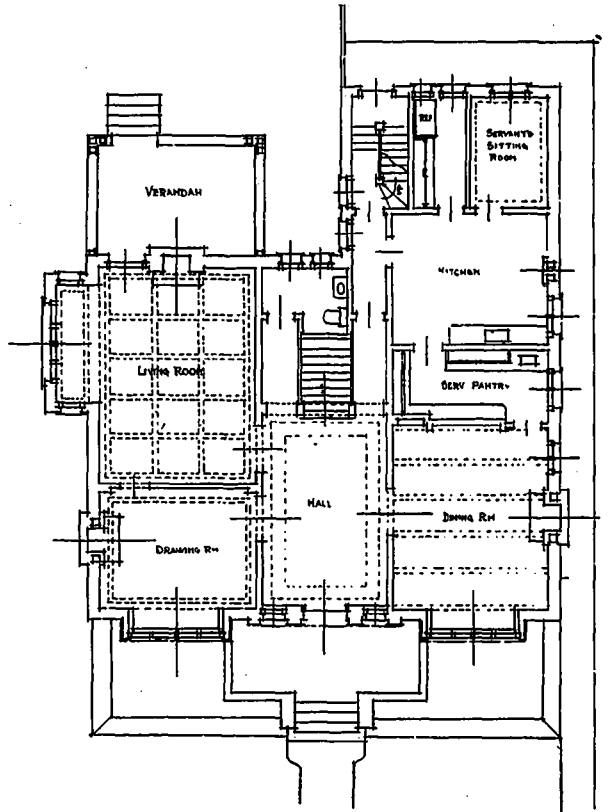
In commenting on the subject editorially, the

tion. Thus the architect not only has no copyright in his building, but except by special agreement has no copyright in the drawing made for the building.



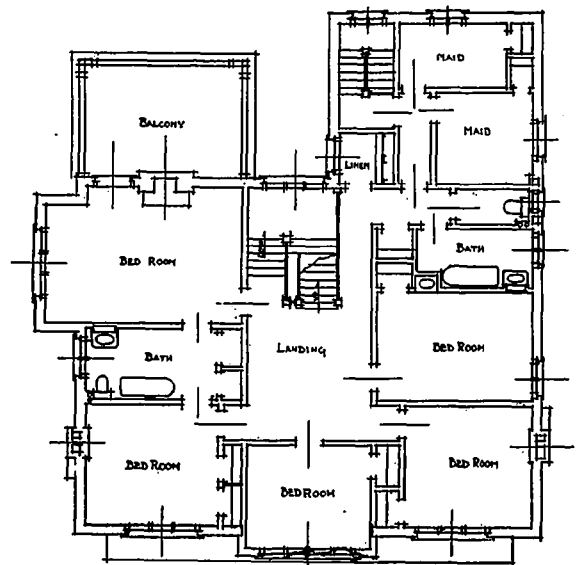
Floor plan, St. Alban's Episcopal Church, Glen Williams, Ont. F. S. Baker, F.R.I.B.A., Architect.

ARCHITECT, London, says: Although the Fine Arts Copyright Act, 1862, gives copyright for the life of the author and seven years after in the case of a painting, drawing, or photograph made by a British subject or any person resident in the British dominions, this does not benefit architects in the ordinary way, for case-made law deprives the architect of any right of property in the drawings prepared for an employer, whether the building whose design is expressed on the drawings is erected or not. The Fine Arts Copyright Act also lays it down that on the first sale of any painting, drawing, or photograph the copyright shall belong to the purchaser or person for or on whose behalf a work is made for valuable considera-



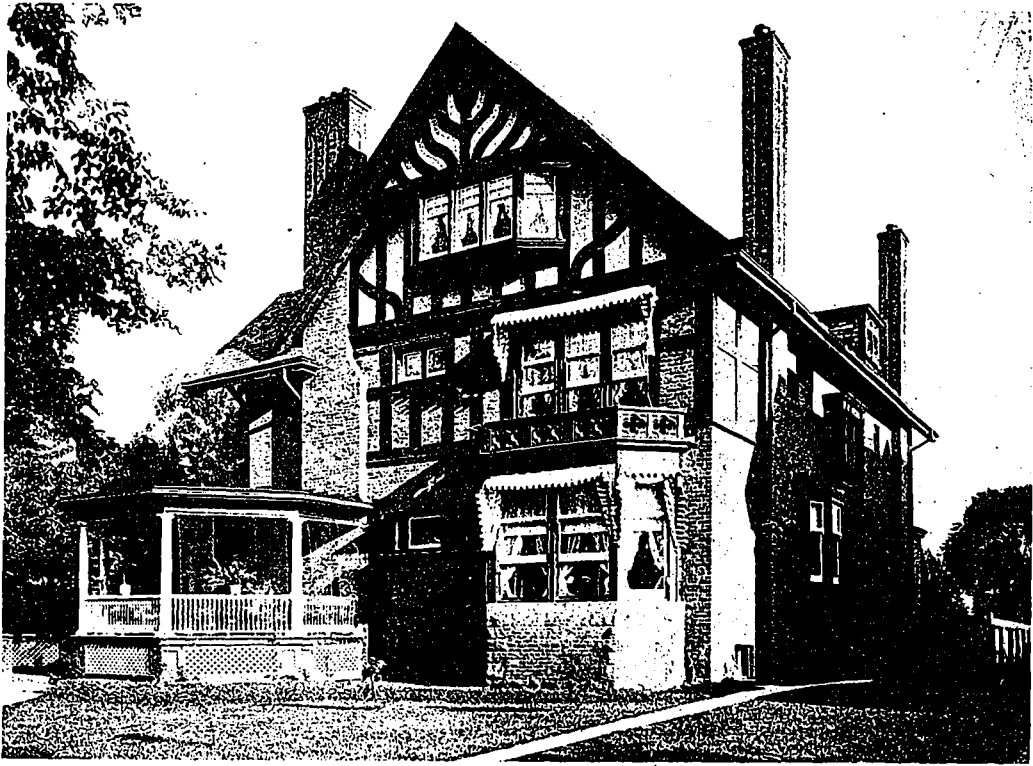
Ground floor plan, Residence of N. Hillary, cor. Bernard Ave. and Admiral Road, Toronto. F. S. Baker, F.R.I.B.A., Architect.

It has been announced, the Committee on the Law of Copyright, in their report to the President of the Board of Trade, have decided to recommend an alteration of the



Second floor plan, Residence of N. Hillary, cor. Bernard Ave. and Admiral Road, Toronto. F. S. Baker, F.R.I.B.A., Architect.

British law of copyright, which admits architecture to a position alongside of literature, music, the drama, painting and sculpture.



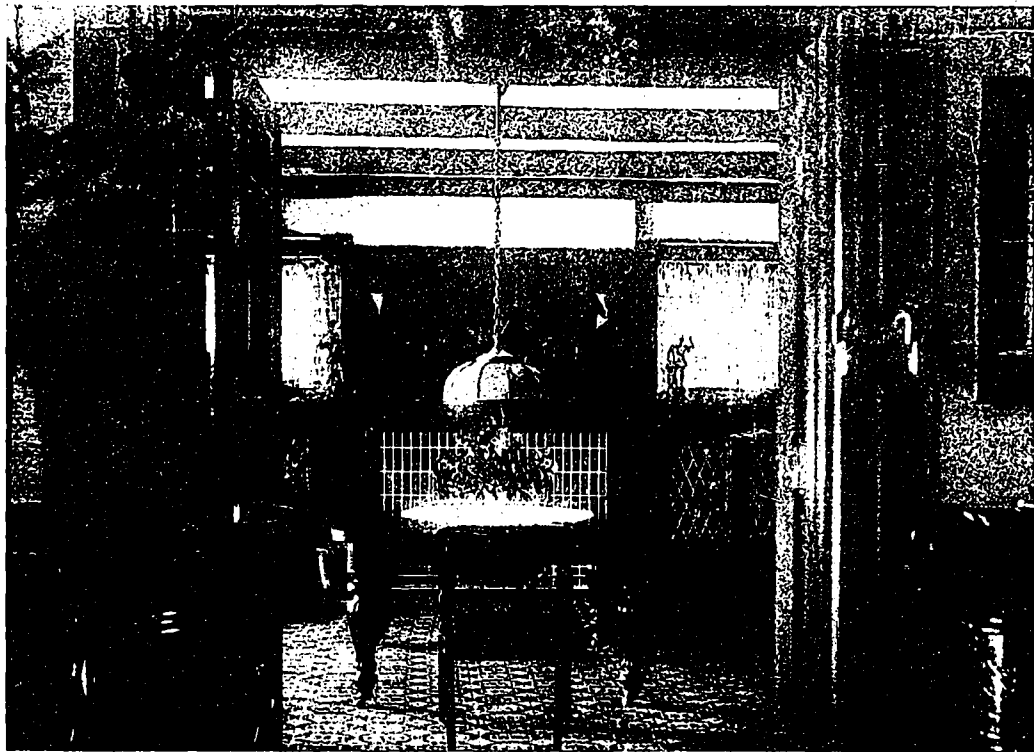
Residence of D. E. Bigwood, 145 South Drive, Toronto. F. S. Baker, F.R.I.B.A., Architect.



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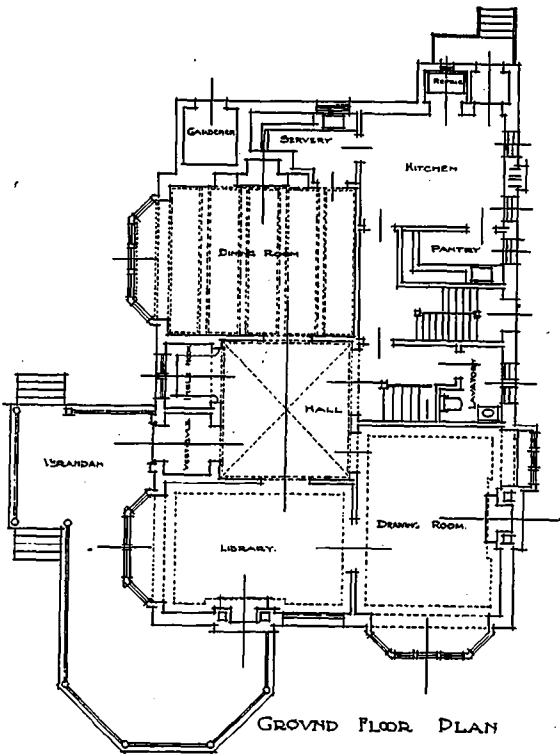
Residence of Thomas Baker, 630 Talbot Street, London, Ont. F. S. Baker, F.R.I.B.A., Architect.



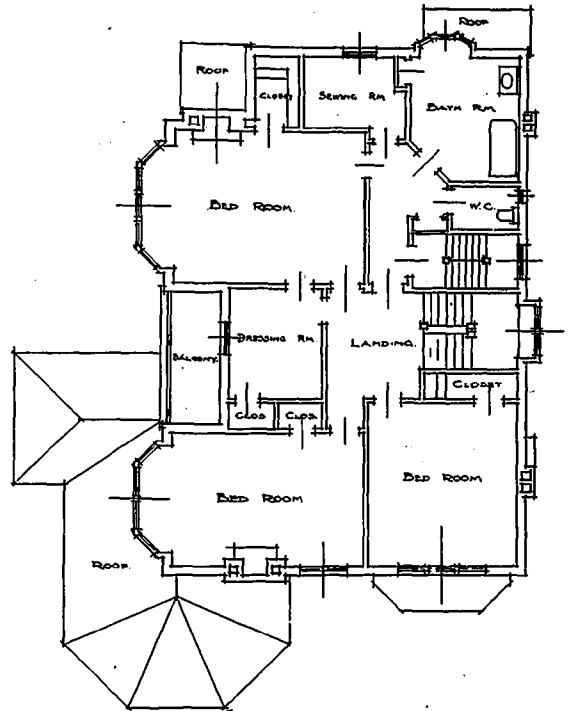
Residence of Thomas Baker, 630 Talbot Street, London, Ont. F. S. Baker, F.R.I.B.A., Architect.

The reference to the Committee was:—"To examine the various points in which the revised International Copyright Convention signed at Berlin on November 13, 1908, is not in accordance with the law of the United

It is thus internationally recognized that an architect's production is a building, not a drawing by which he conveys to others an idea of a building; the drawing is but a means to an end, a tool for the formation of a "work"; the "work" is the building. This is quite a new conception of architecture and architects' work to many of the



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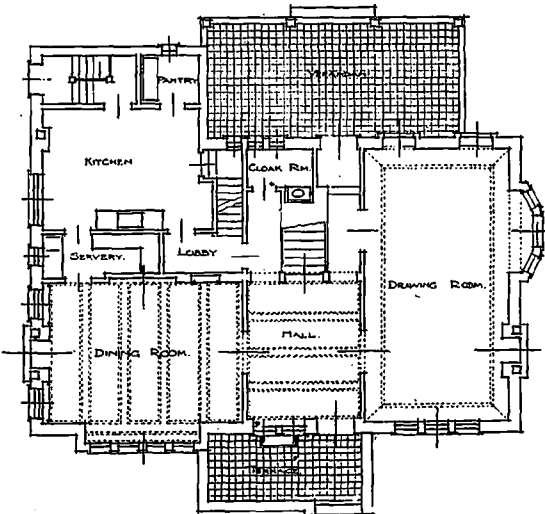


Second floor plan, Residence of D. E. Bigwood, 145 South Drive, Toronto. F. S. Baker, F.R.I.B.A., Architect.

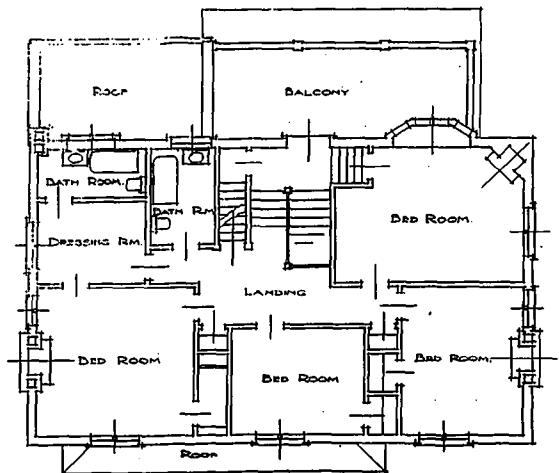
Kingdom, including those points which are expressly left to the internal legislation of each country, and to consider in each case whether that law should be altered so as to enable His Majesty's Government to give effect to the Revised Convention."

This Revised Convention modified the basis of international copyright as agreed in the Berne Convention of September 9, 1886, and the Additional Act of Paris and Interpretative Declaration of May 4, 1896. In the Berne

British public, and especially to the legal portion of the public, who have persistently looked upon an architect as a man who makes a drawing, or "plan," as it is generally described in the law courts, whether it be truly a plan or an elevation or a section or a perspective. The legal view has been that the architect is the man who makes the "plans," and when he has made them, and been paid, he has been paid for making the "plans," and so must hand them over to his employer, with the copyright attaching to them.



Ground floor plan, residence of Thomas Baker, 630 Talbot Street, London, Ont. F. S. Baker, F.R.I.B.A., Architect.



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Convention, plans, sketches, and plastic works relating to architecture were protected; now international copyright is to be extended to "works" of architecture.

The present Committee has been led to form a different opinion to that of the Royal Commissioners of 1878, who considered that it would not be practicable to give



Residence of Architect F. S. Baker, F.R.I.B.A., 185 Balmoral Ave., Toronto.

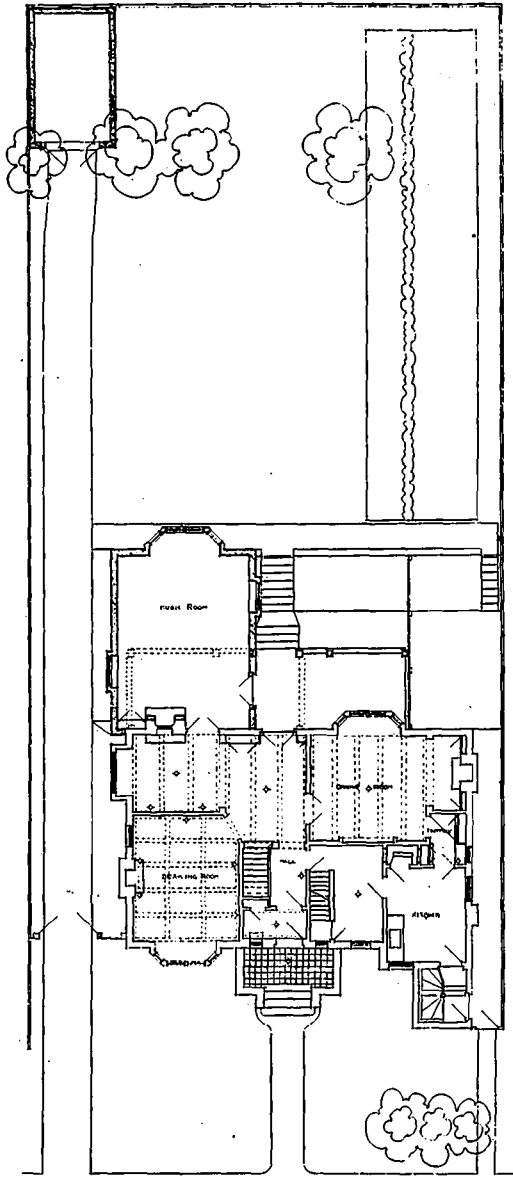


Residence of E. A. Kantel, 74 Binscarth Road, Toronto. F. S. Baker, F.R.I.B.A., Architect.

the protection now suggested to architects, and the Committee has been influenced to their decision by the evidence that has been brought before them to show that no difficulty in affording this protection has been found in other countries.

When, as will probably be the case, the report of the Committee comes to be embodied in a Bill for the modification and codification of the British law of copyright, this Bill will require very careful watching on behalf of architecture and architects, for it is evident that even on the Committee, who have taken so broad-minded view, there are doubts. There are some few members of the

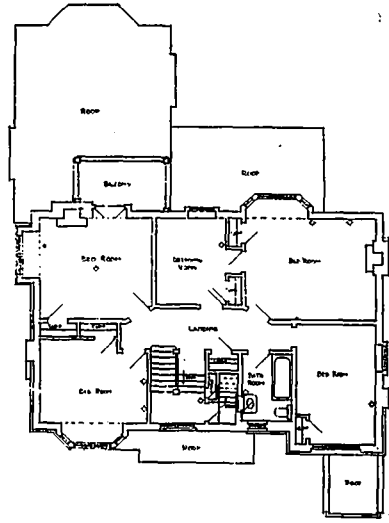
copied to prove damage in a technical legal sense, or that remedy should be given by the destruction of the building which is a copy. There cannot, we think, be any difficulty



Plan of grounds and lower floor, residence of Architect F. S. Baker, F.R.I.B.A., 185 Balmoral Ave., Toronto.

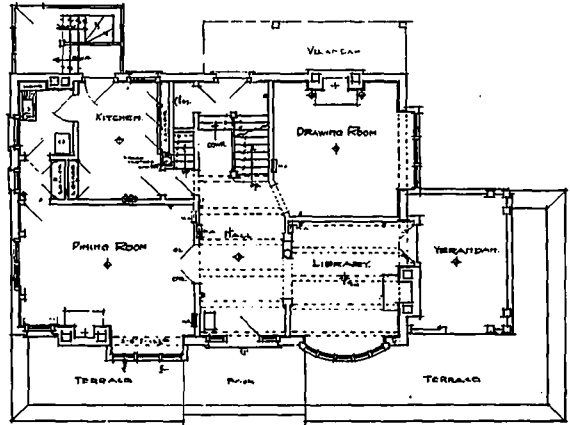
Committee who are opposed to the inclusion of works of architecture as proper subject matter for copyright, whilst the report itself suggests that there may be difficulties of proof of infringement and difficulties as to remedies.

We do not see that there would be any great difficulty with regard to remedies. The report suggests that "penalties might be awarded against anyone who copies or is a party to copying," and precludes the idea that it should be necessary for the architect whose building is piratically



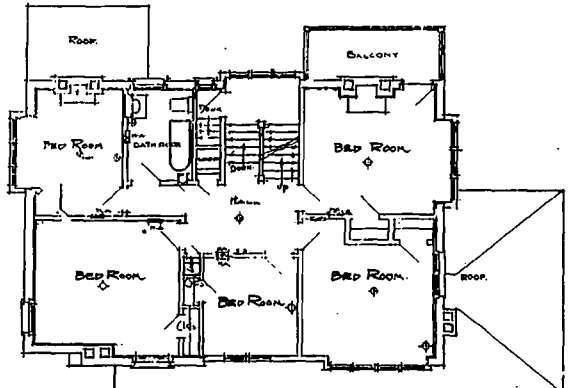
Second floor plan, residence of Architect F. S. Baker, F.R.I.B.A., 185 Balmoral Ave., Toronto.

in arranging a scale of penalties, which might be based either as a recompense to the original author or as a



Ground floor plan, Residence of E. A. Kantel 74 Binscarth Road, Toronto. F. S. Baker, F.R.I.B.A., Architect.

deterrent to piratical copyism. In some of the older copyright Acts there was a provision that an author whose



Second floor plan, Residence of E. A. Kantel, 74 Binscarth Road, Toronto. F. S. Baker, F.R.I.B.A., Architect.

work was copied might sue for damages and double costs, and herein lies, we think, a suggestion. Suppose an



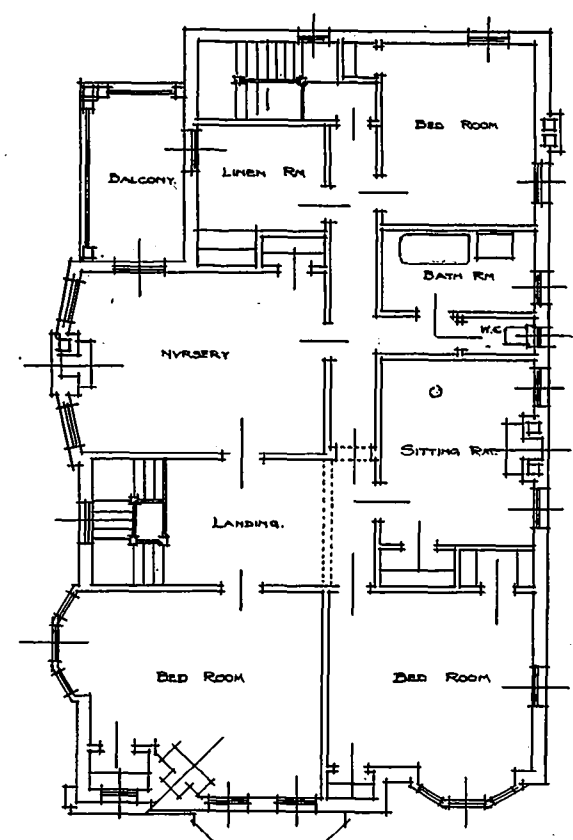
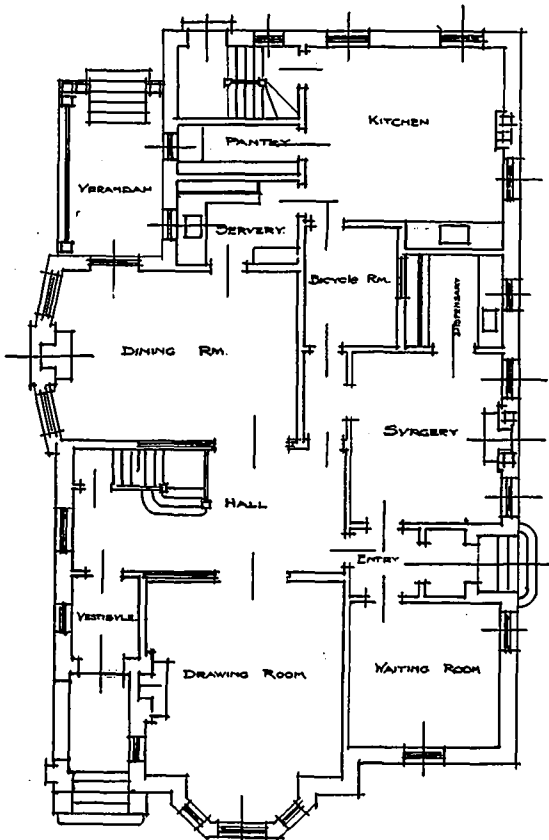
Residence of Dr. A. R. Gordon, 345 Bloor Street West, Toronto. F. S. Baker, F.R.I.B.A., Architect.



Residence of F. Grundy, corner Albertus Ave. and Yonge Street, Eglinton. F. S. Baker, F.R.I.B.A., Architect.

architect has designed an original building for which he has received, let us say, a fee or payment of a thousand

both the injured parties, the architect and the client, would be recompensed, and the penalty would be in the nature of a deterrent.

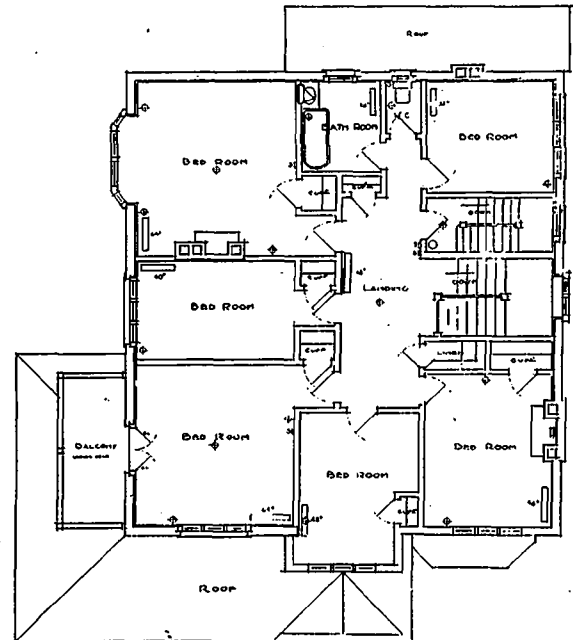
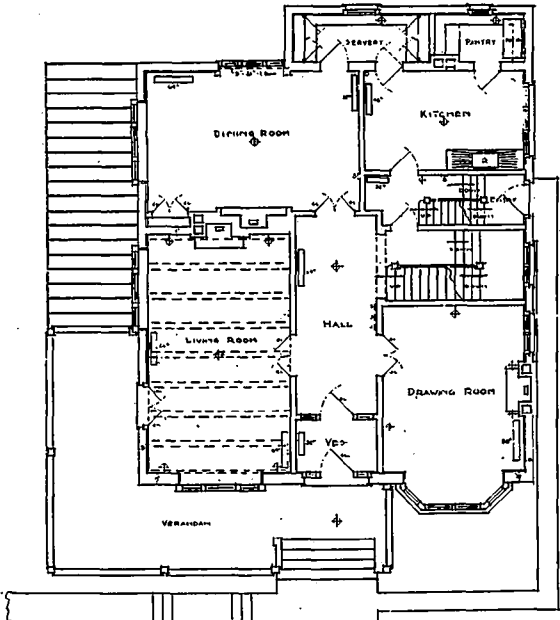


Ground floor plan, Residence of Dr. A. R. Gordon, 345 Bloor St. West, Toronto. F. S. Baker, F.R.I.B.A., Architect.

Second floor plan, Residence of Dr. A. R. Gordon, 345 Bloor St. West, Toronto. F. S. Baker, F.R.I.B.A., Architect.

guineas, and that this building has been copied. If the infringement, on proof, were followed by a penalty of

The difficulty of proof of infringement is, in our opinion, more imaginary than real. It has not prevented suc-

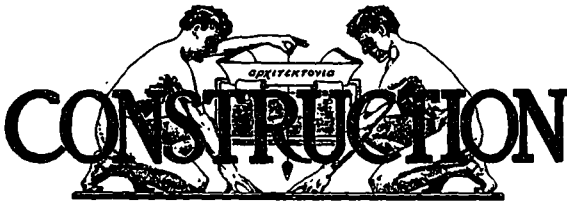


Ground floor plan, residence of F. Grundy, corner Albertus Ave. and Yonge Street, Eglinton. F. S. Baker, F.R.I.B.A., Architect.

Second floor plan, residence of F. Grundy, corner Albertus Ave. and Yonge Street, Eglinton. F. S. Baker, F.R.I.B.A., Architect.

twice one thousand guineas, half to go to the author of the original design and half to the owner of the building,

cessful actions in other countries of the Union, and it ought not, therefore, to be insuperable in Great Britain.



A Journal for the Architectural, Engineering and Contracting Interests of Canada.

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ADVERTISEMENTS.—Changes of, or new advertisements must reach the Head Office not later than the first of each month to ensure insertion. Advertising rates on application.

CORRESPONDENCE.—The Editor will be pleased to receive communications upon subjects of interest to the readers of this journal.

Vol. 3 Toronto, January, 1910 No. 3

Current Topics

THE FIVE AND ONE-HALF MILE TRESTLE on the line of the Norfolk and Southern Ry., across the Albemarle Sound, N.C., has just been completed and thrown open for traffic. It is the longest structure of its kind in the world, and was built at a cost of \$1,000,000.

* * *

SKYSCRAPERS IN VANCOUVER are to be tabooed, if the Property Owners Association of that city is to have its way. At a meeting held recently in the Board of Trade rooms, that body went on record as being opposed to structures of a greater height than ten storeys, or one hundred and fifty feet. However, before the association takes up the matter with the city council, it will acquaint itself fully with a restrictive ordinance of the kind which is at present in force in Spokane.

* * *

PARIS IS SHORTLY TO UNDERGO a number of physical changes which will greatly add to the prestige the city has already attained as the world's most beautiful municipality. The French Chamber of Deputies has just authorized the city to contract for the loan of 900,000,000 francs (\$180,000,000), for an elaborate scheme of improvements, including the demolition of unsanitary quarters, the construction of new streets, gardens, and schools, and other important public work.

* * *

OFFICERS FOR 1910, as elected at the annual meeting of the Toronto branch of the Canadian Society of Civil Engineers recently held, are as follows: Chairman, A. W. Campbell, Deputy Minister of Public Works, Ontario; Secretary-Treasurer, Peter Gillespie, lecturer in applied mechanics, Toronto University; Councillors, T. S. Scott, Assistant City Engineer, T. C. Irving, O. W. Smith, N. H. McLeod, and A. W. Connor. Mr. Cecil B. Smith presided at the meeting, prior to which a dinner was held at the St. Charles.

EXCLUSIVE OF LARGE SUMS expended in the way of public improvement, it is estimated that the value for new buildings undertaken in Prince Rupert during the last six months of 1909, was considerable in excess of \$300,000. These figures leave no doubt as to the progress and future of the place which only two years ago was little more than a name.

* * *

THE INTERNATIONAL EXPOSITION to be held at Roubaix, France, from April to October, 1911, will embrace seventy classes of exhibits, including architecture, decorative art, general mechanics and civil engineering in all its branches. The exhibits will be divided into fifteen sections or groups and be arranged in accordance to their degree of relation to one another. All goods, drawing, etc., for display purposes only, will be exempt from duty.

* * *

RECENT EXCAVATIONS on the site of Christ's Hospital, in the angle of Gillspur and Newgate streets, have brought to light a new portion of the great Roman wall built around London in the fourth or fifth century. The masonry is similar to previous discovered portions, being characterized by large Roman bricks and layers or bands of red tiles, and remarkable for its hardness and solidity. In contour, the wall resembles an interrogation mark, being about fifty feet long, and nearly eight feet high.

* * *

A NOVEL MANNER of calling church-goers to evening services has just been adopted in Brooklyn, (N.Y.,) where a powerful searchlight has been placed on the spire of the First Reformed Church at a distance of 200 feet from the ground. At a fixed time before the services, a flood of light is directed over the community and the flashing is continued through the church hours to attract the tardy and back-sliders. This departure is due to the opposition of the pastor to bell-ringing at night, which he believes only tends to awaken the sick and annoy the aged and infirm in the neighborhood.

* * *

A HOTEL OF 1,000 ROOMS, an Italian garden and casino, and a permanent exposition building, for the sale of goods by samples, constitute a scheme which a party of capitalists propose to carry out at Chicago this year. The building will be located at the south end of Lake Shore Drive, which marks the beginning of the fashionable north side district, and it is quite possible that an auditorium, to be used exclusively for grand opera, will also be included in the group. As it stands, the enterprise will represent an outlay of at least \$6,000,000, of which sum \$2,500,000 will be expended on the hotel alone.

* * *

TWENTY-EIGHT MILLION DOLLARS were spent in railway construction in the West during 1909, and it is expected that an equal or greater amount will be spent this year. The C.P.R. laid 404 miles of new track, the Canadian Northern 230 miles and the G.T.R. 403 miles, making 1037 miles in all. In addition, the Great Northern undertook and carried out considerable work in British Columbia, the exact figures, however, not being available at the present time. Eastern Canada has also witnessed a number of important developments. In fact, all sections are experiencing new improvements and extensions. Preparations have been made to rush the large volume of work now under construction, and to take up at an early date a large portion of the additional mileage projected.

TORONTO HAS MADE A FURTHER EXTENSION to its brick limits, Vancouver asks for an increase in its staff of building inspectors, and Montreal, in the person of the City Architect, recommends a revision of its building regulations and the appointment of more assistants. All of which is healthy indication of building progress, and a desire for properly supervised and well built structures.

* * *

A NEWS ITEM from Vancouver states that work has already been started in Okanagan Valley on the construction of the first gyroscope railway in America to be devoted to commercial transportation purposes. The route will encircle Okanagan Lake, touching all points on shores of that body of water, and the work will be pushed so that the line may be ready for business during the coming season.

* * *

THE TOWN-HOUSE of the late Otto Beit, more familiarly known as the "Beit Bungalow," and possibly the most magnificent and costly mansion in London, is reported to be in the market for a buyer. It is designed in Louis XVI. style, and overlooks a choice part of Hyde Park, being near the Houses of Parliament and the Buckingham Palace. Beit was a nephew of Barney Barnato, the South African diamond king who planned the house but did not live to see it built.

* * *

BONDING NEW AND OLD CONCRETE can be accomplished, it is said, in the following manner: Clean the surface of the old concrete with clear water and a stiff broom. Apply a mixture of one part of hydrochloric acid and three parts of water with a brush, making several applications one after the other. Then scrub the surface with clean water and a stiff brush until all acid is washed away and the surface is perfectly clean and free from loose particles. While it is still wet apply the fresh concrete, and keep the new concrete damp for at least a week, being careful not to allow it to become dry at any time.

* * *

A DEVICE WHICH WILL INDICATE the location of a wrecked vessel, the date when it met with the disaster, the depth at which the wreck lies, and also the course that the vessel was taking and the port that it was making for when it met disaster, has been invented by a native of Melbourne, Australia, whose name is Ernest H. W. Crossley. The apparatus, which is in the form of a buoy, is released automatically from the bridge deck when the vessel meets disaster, and a wire attachment holds it over the spot where the vessel disappears. The apparatus would prove useful, the inventor claims, should a vessel become helpless in midocean through an accident to her machinery, as specially floating "messengers" could be set adrift in prevailing currents.

* * *

A MOVING PLATFORM is the latest scheme advanced in New York city as a solution of the transportation problem. In a recent report, the chief engineer of the public service commission recommends that a route be laid out under Broadway between 10th and 42nd streets for a system of this kind which a local syndicate has announced that it is willing to build. Between the points the traffic is extremely dense, and the moving platform, it is said, will afford the most efficient and economical means of relieving the present conditions, in addition to meeting any future requirements which at the present time can be foreseen. Aside from the advantages which this means of transportation will offer in the way of seats and accommodation for all passengers, speed, safe travel and no waiting for trains, there is also a possibility of a one or two cent fare between the points mentioned.

A NEW METHOD OF WIRING HOUSES for electric lighting and service systems, which it is claimed will reduce the cost by about one half, is briefly referred to in a recent report of Canadian Trade Commissioner McNamara, at Manchester, England. The method, which is the invention of Mr. Sarfield Martin, A.M., I.E.E., is described as being extremely simple and obviating in application all chance of defective work and danger from leakage. When joining up the wires they are simply placed between two metal discs, and by one turn of the screw the discs are clamped together, making a fast connection. The discs are insulated from one another, and any number of wires can be connected by simply using more of them. The system also enables a room to be wired up with great rapidity.

* * *

OTTAWA'S PROPOSED BUILDING BY-LAW was again up for consideration recently when the relative merits of certain provisions were discussed at length. There seems to be some slight opposition to the measure as framed, on the ground that it plays too strongly into the hands of the architects by whom the regulations were drafted. An examination, however, of the somewhat fragmentary facts available, indicates that there is no tenable grounds for such apprehension. On the contrary, possibly with the exception of one or two minor points which can be satisfactorily revised, the by-law is apparently moulded to serve the best interest of the city both æsthetically and from a standpoint of safety and sanitation; and now with the Builders' Exchange, Real Estate Board, and other factions keeping the issue alive from one side or the other, something tangible in the way of a code should emerge in the near future.

* * *

REPRESENTATIVE BRIDGE CONCERNS of England, the United States and Canada are now considering alternate plans and procuring information preparatory to tendering on the superstructures of the new Quebec Bridge. No definite date as to when tenders shall be in has, as yet, been made public, and it is understood that owing to the magnitude and importance of the undertaking that the contracting firms will be allowed two or three months in which to fully familiarize themselves with every detail of the work before submitting their bid. The plans call for a structure having a 1758 ft. span and a width of 88 feet, and it is expected that it will take four years to carry the construction work to completion. The bridge including the piers, for which the contract was recently awarded, will, it is roughly estimated, cost in the neighborhood of \$10,000,000, and the contract for the superstructure will, in all probability, be awarded sometime during the coming fall.

* * *

RECENT EXPERIENCES WITH SAND-LIME bricks in Germany show, according to the "Builder," London, that humic acid, which enters into combination with part of the lime, tends to disintegrate the bricks. As this acid is formed from impurities, the obvious remedy is to use nothing but well washed sand. In Holland, sand-lime bricks made from hydraulic lime frequently suffer by the detachment of flakes, chiefly from the upper part of the surface, which effect is rare in cases where fat lime is employed. The explanation put forward is that the mortar mixed with hydraulic lime encourages the formation of an outer layer of calcium silicate, which absorbs moisture from the atmosphere and does not adhere effectively to the interior mass of the molded brick. The procedure generally recommended in Europe is to avoid the use of hydraulic limes, to employ mortar with a sufficient proportion of water, and to introduce steam into the curing chamber. Hydraulic limes, however, must be used for bricks, if they are to be placed beneath the water surface.

ARCHITECTURAL EDUCATION IN CANADA.—By Prof. Percy E. Nobbs.—Continued from Page 47.

pose. These subjects afford valuable side lights on the work of the design classes.

Archæology.

Archæology as an architectural subject may be shorn of much of the connotation of Hitites and Babylonian captivities with which recent research has invested it. The traditions of our civilization, however, involve some study of the buildings of the Biblical peoples as well as the Greeks and the Romans. Mediæval France and England have a very special bearing on ourselves, for it was through these countries that Italian art comes to us. France, never as long as she had any connection with this land, quite lost the mystery of her Gothic period, while England in her most classic phases has always retained something of the patent honesty of design which culminated in the fourteenth century. But, perhaps, things being as they are, the Renaissance in Italy and the later art of France and England, contain the main body of tradition for us, and though the Greek and Roman work explains much of these things. I feel very strongly that it is enough for us to direct the chief efforts of our scholarships to France and England, rather than to Greece and Rome. Revivals are excellent influences within reasonable limits; their weakness is their self-consciousness. Roman revivals meant something to fifteenth century Italians; Greek revivals meant something to eighteenth century Frenchmen; French revivals even meant a good deal to nineteenth century Americans; but to twentieth century Canadians, English revivals will have a more real meaning, and there is this to be said for them, that mere imitation in this case is out of the question. The serene sentiment, traditional in English art, we may hope to continue to achieve; we must, however, give up the physical details of mullioned ranges of lights and parapeted roofs—therein there is hope for Canadian architecture as such. It must invent!

The study of archæology of our traditions needs a background (and the historical department of any university should be able to provide that) before a beginning is made with the history of architecture. That is the weak point of lectures on ancient architecture to the public or to students in offices. Half the meaning of St. Peter's, and Westminster, and the Parthenon is lost if Papal, Edwardian and Periclean olicies and the popular forces behind them are not subconsciously applied by those who would learn their secrets.

Science.

Science for an architect is, after all, not a very serious affair; of course, a thorough scientific training is a very desirable thing, but "*life is short and art is long,*" and literature and history are, I firmly believe, of more importance to an architect. His mathematics may well stop short of the calculus. Physics is vital up to a certain point, but the ultimate constitution of matter will not help him to "build for eternity," as Wren expressed it, or express human sentiment in what he builds. Chemistry bears directly, it is true, on hygiene, but hygiene (from questions of pure air and pure water to those of heating and ventilation appliances) can, I think, be grasped in principle with very little chemical knowledge.

Construction.

Construction may be regarded as the architect's branch of applied science. Possibly elementary construction can be best learned by practical experience, but as it is quite as impossible to teach composition in architecture to people who do not know how roofs and floors and windows are made, as to teach literary composition to folk who cannot parse words and analyze sentences, even elementary building construction (mere technology as it

is) has to find a place in a university course. Structural design is a subject scientific enough to be admitted by a university faculty without protest. My own view is that an architect should know just enough about structural engineering to have the fear of death and judgment always by him and induce him to call in the engineer before, rather than after, things have been built. Familiarity with the stresses in a 100-foot roof truss will certainly not breed contempt for the possibilities and responsibilities involved.

Professional Practice.

Professional practice is a matter on which I should like to say a great deal, but time will not permit. To speak and write the King's English and one other language; to know how to construct a short essay, report paper or speech; to behave to inferiors, equals and superiors respectively, with courtesy, charity and dignity. These things are expected of a college man, and by hook or crook a good deal can be done even in an architectural department to justify the expectation. It was done by Prof. Ware at Columbia.

Specification writing is very badly done all over the world, and yet no better exercise in form and construction could be undertaken by a student of literature. By lectures and exercises much can be done to show how to say what has to be said, briefly and in order and once only.

Conditions of contract and building by-laws, I almost think, should form a part of any good citizen's education, while certain aspect of law which can be dealt with in university courses to architectural students should prove invaluable in later life.

Drawing.

Drawing.—In administering to the student the many subjects which fall within the six groups—design, æsthetic, archæology, science, construction and practice—one lecture to three hours of graphical work will be found to work out well.

Eye and hand, and imagination, too can, I think, be trained far more rapidly by modelling than by drawing and for the sake of this technical suavity, modelling all through the course is desirable. Freehand drawing, as such, is hardly a subject.

All sorts of drawing and sketching are connected with the work in design and rapid memory sketching, freehand and mechanical, and elaborate measured drawings, are all involved in the study of archæology.

The ornament and decoration in connection with æsthetic implies a good deal of water color work and free sketching.

Construction gives ample opportunities for practice in the preparation of general working drawings and also for steel plans.

Descriptive geometry, sciography, stereotomy and perspective, besides their scientific value, afford good practice in mechanical drawing and are essentials. in my opinion, in the work of the earlier years.

These (counting the incidental drawing as one) seven parts of architectural education can be begun in a college course, and for an ordinary general practitioner of our trade, is to be hoped that none of them would end there.

Some of these things may be held unnecessary, and I wish I could be convinced of that, for the expense of my department, where these things are all done as I have explained, is a grievous question with those responsible. Some things, such as post-graduate work in Ecclesiastical and Landscape Art, might be thought desirable, but I feel that these can only be studied on the higher plane where they exist, in merry England, happy France and smiling Italy, and this brings me to outside influences in architectural education in Canada.

Outside we have no museums as yet, but we shall have some soon, and it is devoutly to be hoped that the

nation's traditions will find adequate representation in them and that they will not degenerate into mere treasure houses of curios, bric-a-brac, pictures and things rich and rare. There is some reason to hope that at the Victoria Memorial Museum at Ottawa parallel type collections of French and British art (architectural detail and decorative sculpture that is) from 1000-1800, will be installed, together with a library of art, a collection of industrial arts, and a gallery of home industries. But all that is another story, and His Majesty's Ministers have not yet dealt with the petition concerning these things.

Outside we have few old buildings worth measuring, though quite a number that should be preserved. In Montreal there are some examples of the purest Louis XV. and the late Georgian work. Still, our architectural students must go far afield for their direct study of past tradition, and it is high time that every Province had a good scholarship to take a man to England, France and Italy for a year, and that the Dominion had a series of travelling scholarships for special study in the realms of art.

Hitherto the main outside influence in professional training has been due to the fact that at no great distance, in the cities of the United States, more work and better work was being done. Thither went, and still go, the Canadian students of architecture, to bring back second hand ideals of the Beaux Arts school, which were, perhaps, better than nothing, but very far from supplying us with national traditions. For what has Canada, either French or English, Lower or Upper, Maritime or Northwest, to do with 19th century Paris? The far flung vault of Beauvais, the jewelled walls of Blois might well inspire a Quebecer, but latter day French academic design, a petrified art lagging behind the emancipation of French painting and French sculpture and oscillating between the Neo-Grec and the Louis XIV. What, I ask, has that to do with us?

Now we are beginning at last to achieve as good work as our friends to the South, and it is the museums, libraries and design schools of the United States, quite as much as the office work, that still draws so many of our students across the line; and the libraries and museums of Canada will soon, I believe, be adequate to our needs. What about the offices?—for we can do without colleges, museums and libraries, but we cannot train architects without properly organized office experience and practical work.

In older lands, where a thousand years of architectural history stands revered and respected in every city, an apprenticeship or a pupilage system, though apt to shorten the general education of the architects, is adequate, but we, here, must rely on college education, museums and libraries, instead of old buildings, and would make a fatal mistake if we did not organize our office training better in the future than we have done in the past. Of course, supply and demand must be taken into account but I think four or five years, bound to principal, or, in case of college students, say three years, part of which could be done in the long vacation, should be made a universal requirement. The power to do this rests with the Provincial organizations. It is bad for the student to get a little experience here and a little there and it is cruelly unfair to the careful architect whose office has an educational influence, that no sooner has he taught a boy something than he is held up for a rise or given the slip.

The architect who is an artist deserves his help cheaper than the architect who is a commercial agent only, and without cheaper help the best kind of work cannot be done. When things are slack it should not be necessary, as it now is, to disband the office. By the present arrangement the art suffers, the office student suffers, and the architect suffers.

We can only make a good thing of our trade by doing far too many jobs at a time as things are. If an architect could, by exercising some restraint on his output and by doing things more to his own real satisfaction, at the same time establish a reputation for giving good experience, pupils, apprentices and improvers would help him out, provided such status were recognized and encouraged by the by-laws of the associations. The assistant paid rather more than he is worth cannot be spared to run about on the job, and cannot be expected to identify his interests with those of his master, when he only sees one end of the work.

There is a tendency among some of my friends here to have a childlike faith in what the university can do. In future let us hope to see the offices doing their full share of the teaching, the schools of architecture doing their little part, the local public their by providing museums and libraries, and the Government theirs, by endowing scholarships.

The teaching of architecture generally will, I think, undergo some drastic changes before long. The history of architecture has to be approached in a new light—it has been regarded as technical education—as a means for enabling people to forge and imitate past styles in approximate purity. It should, I think, be treated as a purely "culture subject," like Latin and Greek and Anglo-Saxon, as a means of enabling people to understand what the art of design is—the great popular art of expressing national sentiment.

The public at present suffers from that little knowledge which is such a dangerous thing. They know the difference between Norman work and Rococco in a superficial sort of way, by sight, not by feeling, and they think the greatest compliment they can offer one of us is to recognize in our performances some resemblance to past types, and "fellows of the baser sort" trade upon this poor thin semblance of culture and give them modern forgeries, more or less ingenious, of Tudor, or Francis I., or Early English, or what not. If the much abused word "style" could just be stricken from the vocabulary of every architect for a decade, the educational value of the omission to the public would be immense. We would, I think, get some real style into our work without having to break our hearts over it.

Our architecture should be "solid, proportional, according to the rules" (which means that effects should be calculated and not be accidental), "masculine and unaffected." That is how Inigo Jones put it, and "built for eternity," as Wren used to say. Our architecture should be as logical to our climate and our materials as were the flat-pitched colonaded fanes of Greece and the steep-roofed buttressed churches of England. It should be simple, natural, dignified, true to its purpose, whether cottage, house, shop, office, church or town hall;—a fruit of the glorious traditions we inherit from our fathers, with nothing of the "insolent boast" and the "slaves' nightmare" which Morris saw and fought against in the artificial art "all French and fine" which hails from the place and period most away from all our aspirations—the court of Versailles.

ARCHITECTURE AND ITS RELATION TO ART.

By JOHN M. LYLE

THE TITLE of this paper is somewhat misleading—"Architecture and its Relation to Art"—for architecture is a fine art—the greatest of all, a combination of many arts. The first question that naturally arises in one's mind is—what is architecture? There are many definitions to be found in the different text books available, but none of them quite explain the com-

plex combination that is called to mind by the word "architecture," so I have dared to suggest this definition.

"Architecture is the art of expressing in concrete form the structural needs and decorative ideals of man." When you consider the many arts which are covered in this definition, you begin to realize the complex meaning of the word "architecture," and incidentally, the demands on those who—like ourselves—are worshipping at the shrine of the Goddess of Architecture.

The late M. Paul Blondel, one of France's most distinguished architects, in speaking of architecture described her as a jealous mistress, who yielded her favors but rarely, and then only after the most earnest and persistent endeavors on the part of her devotees—the architects.

As I am addressing a meeting of architects, it occurred to me that it might be more profitable to us all, if we were to consider not only Architecture as an art—a study necessarily in the abstract—but Architecture, *the art*, which concerns us in our daily practice.

In Canada, we find a deplorable ignorance as to what architecture is; a deplorable lack of consideration for the architect; a deplorable lack of taste. In short, we have to contend with the ideals of a new country, absorbed in the development of its industrial resources, and not as yet ready to listen to the importuning of Venus. It is our duty as architects to educate public opinion to a better understanding of what architecture really is.

We ought to have a chair in architecture in every university in Canada, where architecture could be studied as a fine art. We ought to urge upon the Government the necessity of having our new cities—and our old ones too—planned and re-planned by architects and not by engineers. In my humble opinion, engineers have been the curse of Canadian and American city planning. Their laying out of our streets, avenues, and squares has been stupid in the extreme, and without any consideration of the aesthetic side nor of the practical. The plans of our cities are almost criminal in their stupidity, and worst of all is the fact that the engineers are still "on the job"—doing their best to damn the future cities of our land.

We ought to arrange lectures, illustrated with lantern slides—which would stimulate public interest in the study of architecture as a fine art. For instance, there are many men and women now taking an interest in furniture, and in decoration, as applied to the home. A series of lectures could be arranged covering the different styles of interior decoration.

Once create an interest in the decorative side of architecture, and you have the kernel of a growth that in its ramification opens up unlimited possibilities. We ought to have an architectural journal that would put before the reading public not only the utilitarian side, but also the aesthetic. A journal devoted to the high ideal of architecture as a fine art. May I presume to suggest to our architectural press that it would have the hearty support of the architects of this country in its endeavors to devote more attention to this side of architecture.

We ought by our example in the office to inspire our draughtsmen, the contractors, our clients with the idea that there is more in architecture than the mere erection of a structure to shelter their heads, and to give them the necessary accommodation for their daily wants. That the mason, the bricklayer, the carpenter, the plasterer—all should be encouraged to live up to the highest possible standard of excellence in their work.

I am quite aware that it is absolutely impossible in modern practice to obtain ideal conditions in the execution of work in Canada. On the other hand, it is certainly our duty, as architects, to raise the standard of execution by every legitimate means in our power. If I might be allowed to suggest one method of raising the standard along certain lines, it would be that the architect spend more time in studying his drawings, and also in

making more complete 3/4-inch and full size details for the contractors' use. Contrasted with the best French and American practice, with which I am familiar, I might say that there is no comparison in the number of drawings and attention paid to studying of details as between the practice of these countries and that of Canada.

We might introduce "quantity surveying" into Canadian architectural life. We often find that there is the greatest variance in prices submitted by different contractors. Time and again we are obliged to accept the lowest tender, with the result that the contractor finds out, possibly, that he has made a mistake in his quantities; consequently, he is forced either to accept a loss, or to skimp his work in order to come out even. Would it not be much better to have the English idea of quantity surveying adopted in this country; it seems to me that the introduction of this system would materially aid in uplifting "architecture as a fine art."

We ought to educate the public to the fact that it is necessary to have plenty of time for the erection of our buildings, and that speed is not the only consideration. Structures are run up here or "slapped" up at break-neck speed—the result being that woodwork is put on top of wet plaster, and everything is rushed forward pell-mell. How often we hear people say that the only way to get workmen out of a house is to move in. Would it not be well for the architects to explain to their clients the great necessity in building operations of making haste slowly. We certainly can do some missionary work along these lines to the decided advantage of architecture as a fine art.

Surely we architects have in Canada to-day great responsibilities and great opportunities. It rests very largely with ourselves what the architecture of the future in Canada is to be. Let us unite in trying to further the study of architecture as a fine art; let us by our efforts aim to uplift the architectural ideals of to-day. Surely much ambition is worthy of our united efforts from a purely patriotic point of view—aside entirely from any actual benefits that may accrue to us individually. It seems to me that at this stage of Canada's development, we are—more or less—pioneers in our own particular field; in the past, there have not been many trained architects in Canada. The unlimited wealth and the great buildings which are sure to be erected in the future ought to inspire us to more determined efforts to upbuild our profession, and to place architecture where she belongs—at the head of all the arts.

NEW ARCHITECTURAL OFFICE.

ARCHITECT HERBERT E. MOORE, Toronto, who, for the past three and a half years, has been associated with Architect John M. Lyle, 14 Leader Lane, has opened an office and drafting rooms in the Trust and Guarantee Building, where he will be pleased to receive samples, price lists, etc., from supply firms and manufacturers. Mr. Moore is a member of Council of the O.A.A. and is held in high esteem by the members of the profession in general.

A SUCTION-GAS PRODUCER BOAT has been put in service on the Rhine, according to the London "Times." It is 65½ ft. long, 21¼ ft. wide and draws nearly 5 ft. with 10 tons of fuel on board. The producers use lignite briquettes and are located forward. The gas-holder and two four-cylinder 200-h.p. engines are amidships, and the crew's quarters are aft. Each engine drives a propeller shaft carrying two screws, the blades of which can be reversed by gearing controlled from the engine room. About 1.1 lb. of fuel per h.p. hour is used.

GOTHIC ARCHITECTURE.—The Abiding Lessons Which It Teaches.—All Its Beauty and Inspiration the Outgrowth of Sound Construction.—The Early Craftsman, His Motives, and His Work.—A Resume of Mediaeval Industrial Art. By ERNEST A. BATCHELDER

While architects of the present day regard the work of the Mediaeval builder, as is still to be seen in some of the great cathedrals and buildings of Europe, with a feeling of almost reverential awe, many of them seemingly fail to appreciate the underlying principle observed in the creation of these enduring structures, or to grasp the abiding lessons which they teach. How the great structures were built, rather than why they were built; and how the early craftsman wrought with the materials, tools and processes of his time; together with how he solved his problems, met definite conditions, developed each structural feature and evolved beauty from utility, is vividly told in the following article by Mr. Batchelder, which we reproduce in full from the CRAFTSMAN, believing that it will be found of especial interest to our readers.—EDITOR.

IT IS NOT THE PURPOSE of this article to attempt anything in the nature of a history of Mediaeval industrial art. Within the limits of the space available little more could be done than to set forth in dry, uninteresting data the work of that period. There were many workers in many materials, widely separated as distances were necessarily computed in those days of insecure and inadequate transportation, laboring in different environments and under different influences. There is an abundance of literature on the subject of Mediaeval history, the life and customs of the time, the development institutions, its architecture and its industrial activities. From this material and from personal observation and study it is the writer's intention to choose certain examples of work in stone, wood, iron, etc., and discuss them from a design point of view, how they were produced rather than why they were produced, and to tell the story in a way that may be of interest to the general reader.

Indeed, the question of how things were made the study of constructive problems and the conditions under which they were solved, may after all take one nearest to the true spirit of the work. We are apt to see the craftsman of the past as a light in a mist, a vague blur without personality. A philosophy of art fails to reach him; a discussion of abstract ideals leaves him as an unreal factor in

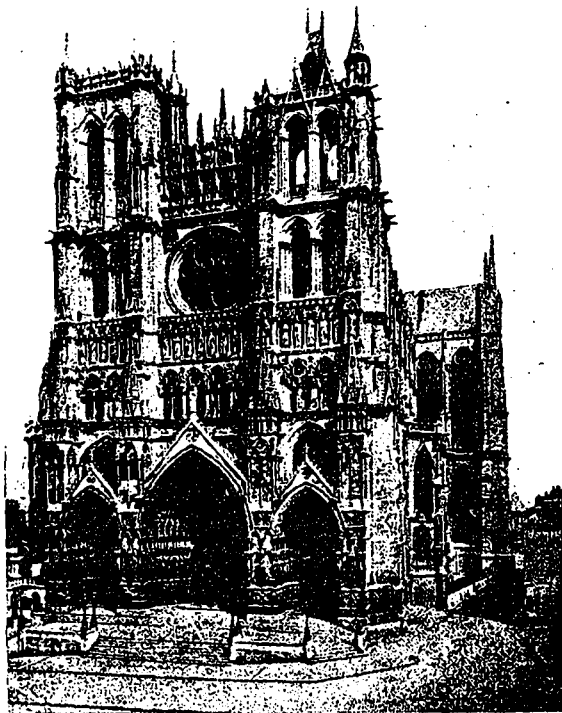
the background. We read into his work sentiments and emotions that would cause him to scratch his head in bewilderment if he were to hear them—for his work, like all true creative art, was not conceived as a conscious message to future generations; it was merely an unconscious expression of immediate needs and convictions. It was a spontaneous development. The man at the bench did not stop to analyze motives; his interest was centered upon technical problems, how to secure a given result and meet definite conditions with the materials, tools and processes at hand. To really appreciate the beauty of nature one must turn to others than the poets for an interpretation of what we find. And to understand the spirit in which Mediaeval industrial work was wrought we must push through the halo of romance and chivalry; through the abstract ideal of the philosopher, even through many of the aesthetic and sentimental motives that legend ascribes to the workers, and penetrate into the crooked narrow streets of the old-world town where the pigs roamed at will. The descent is sudden; but it is necessary if we wish to visit the workers in their shops and watch them as they hammer away at their trades quite unconscious that their product, or such scraps of it as time has spared, is to be reverently treasured under glass by a distant generation.

Now, the life and the thought of the thirteenth century have slipped beyond recall into the past. We would not, if we could, revert to the conditions of that day, nor can we hope to coax beauty back into the world by adopting its industrial methods. That art was vital, as few arts have been, because it interpreted so forcibly and clearly the thoughts that had penetrated into the lives of the people. We cannot by any conscious effort of thought put ourselves back into Mediaeval times; that is to say, we cannot look out upon the world through the eyes of the Mediaeval people, see things as they saw and understood them. Little enough remains of their activities—here a church, there the ruins of a castle, again a little cluster of half-timbered houses huddled together in some byway where the current of modern life has passed them, a few manuscripts and utensils gathered into museums where we trea-



Flying Buttresses of the Cologne Cathedral.

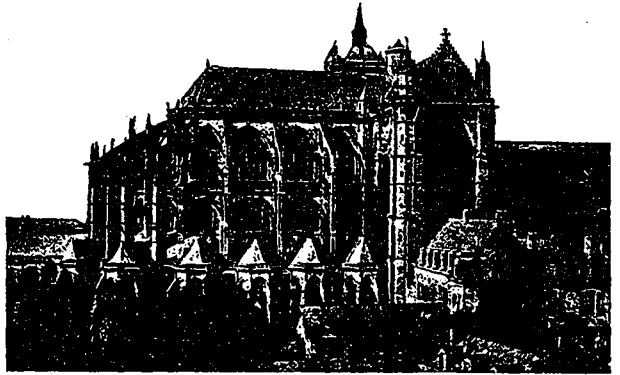
sure them as priceless relics. Scanty as are the remains, however, their art was so intimately related to their lives that we may know how they dressed and worked, how they fought and played; even the minute details of daily life are wrought in stone and wood, iron and glass; but when we think that we are getting into close fellowship with the Mediæval worker, when his personality is almost within reach, he suddenly vanishes again. For in the presence of his greatest achievement, the Gothic cathedral, he slips away into the background, a vague figure, impersonal, more inexplicable than when we first began to make his acquaintance. Here is an expression of the thought that penetrated deepest into his life, and in its presence we feel only a sense of our own littleness and insignificance. It thrusts its gray old towers and pinnacles from out of the Middle Ages above our own petty affairs, and we are almost willing to accept the legends, the stories of wonderful miracles that cluster about it. For we who order our churches ready made much as we do our clothes and groceries,



Façade of the Gothic Cathedral at Amiens.

can never hope to understand the spirit that moved men to give of their time, money and labor to the construction of the cathedral, building it and rebuilding it on nobler and grander lines whenever fire or the wanton destruction of war razed it to the ground. Of the old town then clustered about the church we know there were dark, noisome streets, unsafe and unlighted at night, where plague and pestilence often found a breeding place, dingy houses and shops. And yet from these streets, so strangely at variance with the church, came those who wrought these miracles in stone, choosing one from their number as master builder, the rest voluntarily giving to its construction and enrichment the best of their linear thoughts and efforts. The French cathedrals were, in a peculiar sense, the result of communal efforts. Nor was there any thought for fame, for very few even of the master builders are known to us, and the countless craftsmen who labored so industriously to give beauty to all the details of the fabric have left no marks by which we may speak their names. It was all for the glory of God, with an element of communal pride, a combination of religious fervor and popular enthusiasm.

To us the cathedral seems as stable and enduring as the hills or as the cliffs that rise from the sea. It appeals to our imagination so strongly that we are loath to pry into more practical questions of ways and means. We would rather turn to the poets for an interpretation of why it was done than to those practical persons who have clambered over the edifice with rule and compass to tell us how it was done. And yet, in the plain recital of the means adopted to maintain the stability of the structure is a story of absorbing interest. We may then understand



Cathedral Rosace at Le Mans.

what a French writer of keen insight meant when he said that the Gothic cathedral was more like a modern engine than a building, in the sense that it was an active thing, pushing, thrusting, filled with energy and requiring unceasing attention to keep it in working order. And we shall come closer to the builders when we examine the constructive problems that confronted them, problems that had never been solved before; when we study the conditions under which they worked in their earnest efforts to give beauty to the structure that was rising under their hands. Here were simple stone masons and carpenters building as experience taught them and clothing their work with an interest and beauty that were inevitable under conditions of true craftsmanship. And they left behind them the last word in constructive skill, combining original thought and deep artistic feeling; but withal, a structure in which every feature is organic in

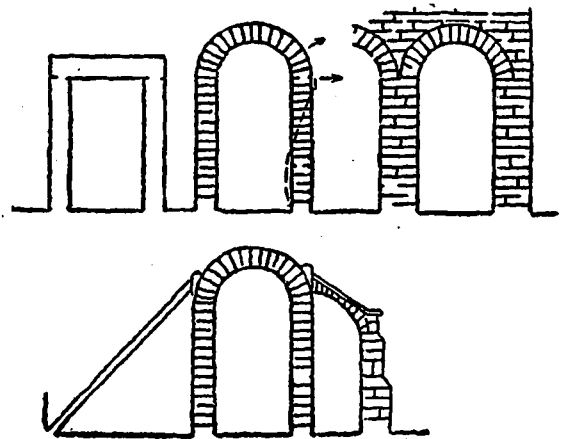


Figure 1.

character and may be traced back to its simple utilitarian origin.

The building grew as a plant grows. It was not all planned beforehand on paper to the last detail, with malice aforethought, like modern buildings. The master builder lived on the works where he was able to take advantage of every unforeseen circumstance that arose and apply new ideas that came to him as the building progressed.

A large measure of the distinction that attaches to the result is due to the shrewd common sense and orderly thought of the "master maker of churches" and to the structural devices that necessity forced him to adopt in order to hold the building intact.

An architectural "style" is very often spoken of as if it were a question of columns and capitals and moldings. There are many writers who leave us with the impression that architecture and building are two different things, telling us much about the "orders" and "periods," but little about the mechanical problems and constructive

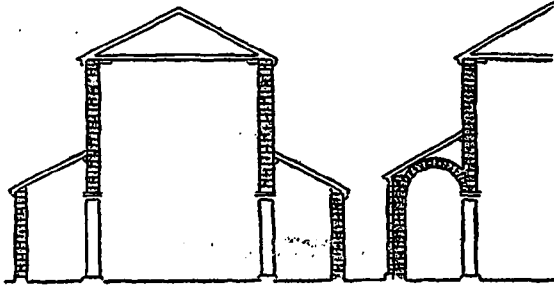
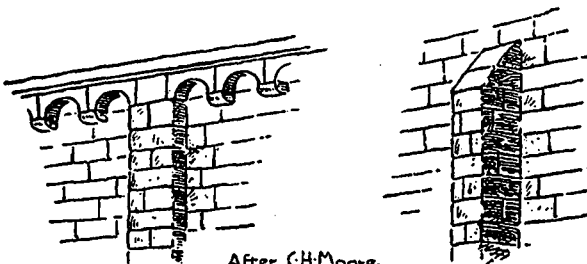


Figure 2.

methods involved, as if these were of minor importance. If, for example, we compare the outward aspects of the temples left us by the Egyptian and Greek builders, many points of difference may be noted; likewise we may have resemblances in details and in the disposition of the ornament pointing to influences extending from one to the other. But there was little difference in the constructive methods employed. On the other hand, there are constructive differences between all of those buildings and the churches left by the Mediæval craftsmen, differences in the use of materials and in the solution of mechanical problems, that place the latter in a class apart, a new principle, a new thought. And we have no sufficient clue to the radical differences in the ornamental "styles" until we have studied closely the development of construction, for in each case the ornament was a logical outcome of the structural principles employed. If the Greek builders had discovered and developed the new type of construction, even though they still remained pagans, their ornament would have undergone a complete and inevitable change. Incidentally, there is a grim, pathetic sort of humor in the effort that one finds, here and there of an architect of the Renaissance struggling to redress a Gothic cathedral in a conventional garb of classic ornament. It is difficult to believe that men could have so little understood the real points of difference. The result always looks, as some writer has put it, "like the dead branch of a tree suspended among the living branches."



After CH Moore.
Figure 3.

This last sentence describes in a few words the essential differences. In all that preceded Gothic work the principle may be stated as dead, inert, inactive; in Gothic work it may be called alive, active. Constructively, the point may be illustrated by the simple pier and lintel, as shown in Fig. 1. If a horizontal is placed upon two verticals it is readily seen that there is nothing involved beyond the downward weight of dead material. The up-

rights must be sufficiently strong to support this weight! Of such character was a Greek temple with its wooden roof. But if an arch is built over the opening between the two uprights another problem must be faced, for an arch exerts a horizontal thrust or pressure as well as a downward weight. It brings to the problem the element of unrest. If the arch is not securely braced or held in place it will spread outward, somewhat as indicated by the dotted line. The Romans held their arches and vaults intact by so building them that the thrust would always be overcome by a dead weight of material.

Now in direct contrast to this inert principle is the method so largely employed by the builders of the North. In fact, it is so primitive and obvious in its idea that none but simple-minded stonemasons would ever have puzzled it out. Why not securely brace the thing from the outside? And so in doing that which was most simple and logical, best adapted to the constructive problems that arose, they created a new style in architecture. Simple as the idea seems, however, it took many long years of patient work, many experiments, often disastrous, before it was perfected; for it leads to the active principle of construction, the nicely calculated adjustment of one thrust against another. A cathedral is no mere mass of stone; it is a veritable organism, alive with energy, pushing, straining. "Hold steady," one member says to another. "If you fail me we all go down together"—and so, pushing this way and that as the builders disposed,

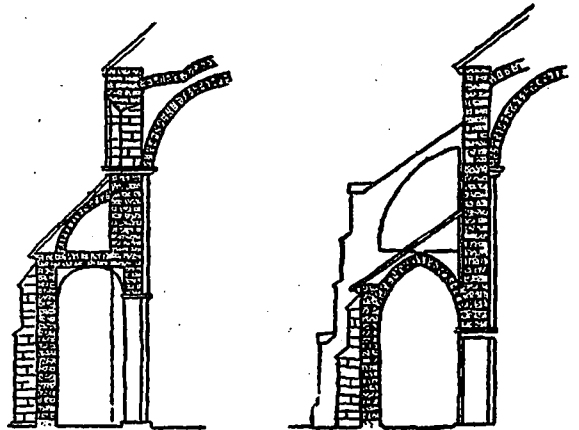


Figure 4.

the fabric has been held intact for seven or eight hundred years. The modern engineer can figure on paper exactly how it was done; but those men worked it all out through dearly bought experience in handling stone. There were many experiments and discouraging failures; but they dared to try, and try again, until the whole system stood complete. Applied to an arch the idea is of course inadequate; it was only when churches were built throughout with stone that the development of the outer bracing occurred. And in the perfection of the idea, what do we find? Essentially this: A vast, immensely heavy, vaulted roof of stone poised high in the air upon slender piers, the powerful side thrusts of the vaults caught on the outside by flying buttresses and transmitted to other buttresses with their feet securely braced at the ground. There is no use for walls; the space from pier to pier is filled in with glass. One is amazed at the very thought of such a daring concept of a building. Patience and brute strength were sufficient to build the temples of Egypt; but here are men playing with the laws of gravitation. Surely it is interesting to trace some of the steps in such development.

The earlier churches were built with wooden roofs over both nave and aisles (Fig. 2). Constructively, they presented few difficulties; their walls were heavy with small windows above the lean-to roof of the aisle, with

columns carrying longitudinal arches to separate the nave from the aisles. The first efforts of the builders to vault their roofs with stone were in the aisles where the vaults were comparatively small and exerted very little pressure. But the pressure of a vault is steady and persistent; so the outer wall was strengthened with a simple pilaster (Fig. 3). In time this developed into a real buttress of more pronounced form. Now the point to be noted is that we may already tell from the exterior of the building something of its interior construction, whether its

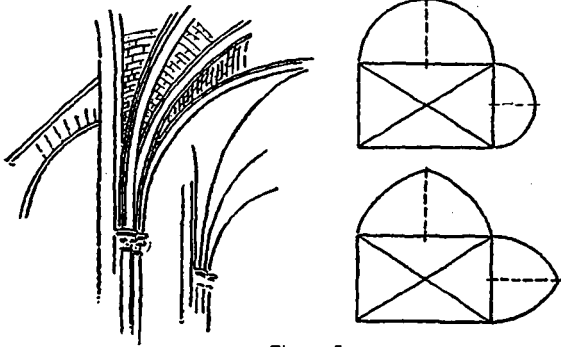


Figure 5.

roof is of stone or of wood. But this, of course, is a long way from that system which we know as Gothic.

It was when the builders sought to discard the wooden roof and vault the larger expanse of the nave that the complications began. It may be presumed that the step was taken primarily to give a more enduring form to the building, for we know that the wooden roofs were often destroyed by fire or in other ways. The early struggles of the builders to grapple with this new problem afford sufficient material for a book of intense interest. There are numerous ways in which a vault of stone may be constructed; but the subject is one of too technical a nature to follow here. In their early efforts the builders threw strong supporting arches across the nave and built vaults of the old Roman form between the arches. To strengthen the walls against the arches on the outside, buttresses of the pilaster type indicated in Fig. 3 were built; but in later years these were found to be insuffi-

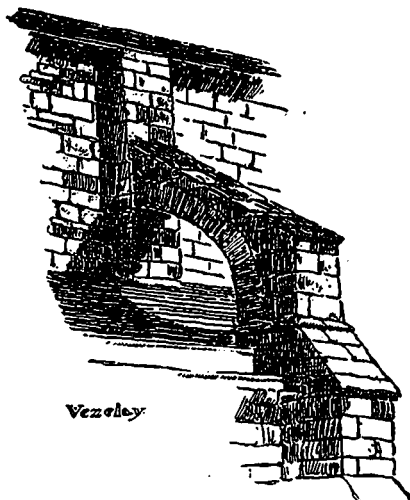


Figure 6.

cient. The roofs threatened to fall and another type of bracing had to be devised (Fig. 6). Another experiment is shown in Fig. 4, one of the abbey churches at Caen. Here the walls are very heavy and the window openings are still small. In this church one finds an apparent clumsiness in the workmanship, too; but these men were feeling a way into new and undeveloped principles. They

had no reference library to turn to; no collection of casts, photographs and picture post cards to help them. They were thrown upon their own resources and inventive skill. The roof of the aisle was raised enough to enable them to construct a long half-barrel vault against the outer wall to transmit the thrust of the big nave vault across the aisle to the strong buttresses and thence to the ground. Time showed this to be another mistake, for the vault over the aisle is too low to catch the full force of the pressure from above.

But about this time necessity compelled these persevering workers to complete another important structural device without which, even to this point in fact, progress would have ceased. It must be understood that to build a vault of stone, of the Roman type, a very expensive and a complicated framework of wood is necessary. Furthermore the vault when completed is very heavy and unwieldy, exerting powerful side thrusts. Again, with Roman mortar the vault was practically a solid when completed, and we know that the Mediæval builders had no such mortar; it may be that the secret was lost. So they attacked the problem in a different way, and after many experiments devised a skeleton of stone ribs into which the roof proper was fitted and upon which it rested.

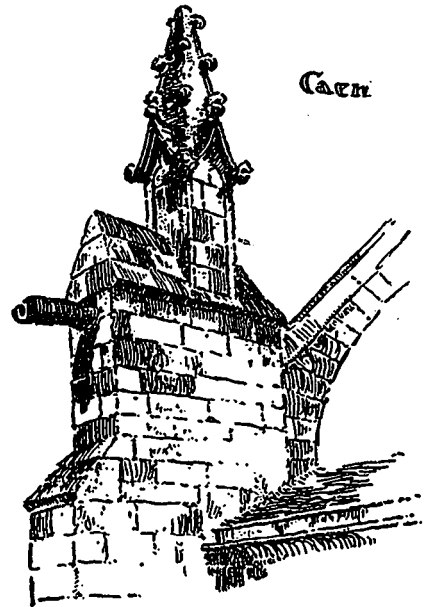


Figure 7.

And with this new device in hand they again forged ahead to the perfection of their system. The advantages were many, economically and structurally. It did away with much of the expensive preliminary work in wood, strengthened the ribs of the vault and divided the roof into sections so that a weakness in one part could be repaired without affecting the rest of the vault, it greatly diminished the outward pressure, and, perhaps most important of all, the skeleton frame of ribs, by sustaining the weight of the vault, enabled the builders to distribute the weight and the thrusts to definite points where they could deal with them in the most effective way (Fig. 5).

Now, after more than one roof fell in from insufficient external support, the next step was to frankly adopt the primitive idea noted in Fig. 1, push above the roof of the aisle and throw a flying buttress up against the point where the pressure of the big vault was strongest. There was no precedent for such a unique constructive device; but it is ever a mark of genius to dare that which others hesitate to do because no one has ever done it before. They seemed to give no heed to the odd appearance that such a feature would inevitably give to the exterior of their buildings; it was necessary for the stability of the

structure and that was reason enough for employing it—and therein is the abiding lesson of Gothic architecture; the craftsmen always accepted without reserve the clue that sound construction offered them, giving to each feature such beauty as they could. In later years more sophisticated architects, hidebound to the "true style" and the "five orders," deplored all of the above as a relic of barbarism and diligently strove to hide their construction. Not so the Gothic builders; once established the flying buttress was seized upon joyfully and given endless variations.

On its first appearance it was treated much as if it were a part of the roof itself (Fig. 6). Then the forms changed; a pinnacle was added—for beauty? Indeed no; for weight at a point where weight was needed. Again they accepted the clue and the pinnacles sprang upward into countless beautiful forms. The top of the buttress was scooped out to conduct water from the main roof, and a spout naturally appeared to throw the water away from the building in order that ice might not form on the walls. This feature in turn became a source of joy to the stone carvers and was wrought into all manner of fanciful gargoyles (Figs. 7 and 8).

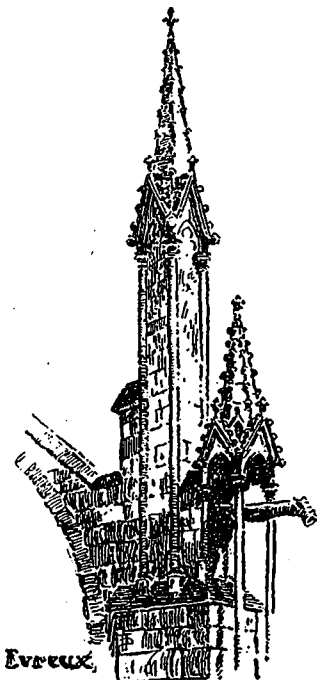


Figure 8.

Constructive logic developed another feature that is always associated with Gothic architecture—the pointed arch. Its origin, at least with the Mediæval builders, was not from æsthetic motives; clear-headed common sense brought it into general use. And here again it was a question of vaulting. A round arch vault has a very powerful side thrust; and moreover it will be noted from Fig. 5 that it is unsuited for the vaulting of oblong areas. As the height of a round arch is necessarily governed by its span, difficulties are presented which are done away with when a pointed arch is used. In the intersection of two pointed vaults the heights can be adjusted at will regardless of their respective spans. Once in use the pointed form of opening then extended to the windows and doors of the church.

With the pointed vault, the skeleton frame and the buttress system, the new constructive principle involved is apparent. It was not in those features alone, however, that the genius of the builders appeared. In the same logical way the west front was developed from a bare

wall with simple doors and windows to the magnificent portals of Rheims. The spires of Chartres, before which one feels like taking a new grip of life, arose through many experiments from a simple belfry roof. And within the church, what one might call the nervous system of the thing is so organic that a near-sighted man may hasten to an examination of the base of a pier and know almost as much about the character of the structure above as the rest of us. For every molding and rib of the huge skeleton is articulated through the piers. Indeed, the pier seems more like a bundle of withes bound together than a single piece of masonry. And as the window openings were enlarged the glass workers filled the space from pier to pier with that hopelessly beautiful wealth of color, most of which, alas! has been shattered and destroyed. With an assured construction the stone carvers multiplied; from bottom stone to topmost pinnacle they wrought with a fertility of invention and imagination that never ceases to excite our wonder and admiration. In fact, there came a time when they were lost in the bewildering maze of their own fancies and staked their skill against the material in which they worked; it seemed more like lace on a delicate tracery of cobweb than stone. And therein came the inevitable decline. For the very life and vitality of a designer's work ebbs away whenever he turns from constructive problems and endeavors to create beauty for its own sake.

IT IS NOW POSSIBLE to melt wood by heating it in vacuum, the product being a hard homogeneous substance that apparently has an industrial future before it, says the LOS ANGELES (Cal.) TIMES. Messrs. Bizouard and Lenoir, of France, after a year's experimenting, solved the problem of fusing wood, and their work has been taken up by others.

A metal receiver, a sort of boiler having a double bottom through which super-heated steam passes, is filled with bits of wood; it is closed by a lid similar to that used in autoclaves, and provided with a tube and stop-cock communicating with an apparatus for exhausting the air.

When the wood thus kept in vacuum is heated above 284 degrees F. the water and other volatile substances are given off first, and are drawn off by means of the exhausting apparatus, after which the heating is continued for about three hours. Then there takes place a complex series of reactions and phenomena analogous to those that accompany the distillation of wood in a closed vessel, and in this way all the so-called pyrogenous products are separated; these, in turn, are drawn off, condensed and separated so that they may be utilized commercially.

Then there remain in the receptacle only the fibrous skeleton of the wood and the mineral salts, which, taken together, constitute a fusible mass. This is allowed to cool slowly, out of contact with the air, and then placed in a second boiler, which, after the air has been exhausted, is filled with nitrogen under a pressure of 1.5 to 2 atmospheres.

The whole is heated to 1,500 degrees F. for two hours, and at the end of this time, the wood is melted into a homogeneous, hard mass which may be easily cast and molded into all sorts of shapes, and by adding preservatives to it during the melting process it may be rendered practically indestructible.

THE EXECUTIVE of the Ontario Good Roads Association have decided to hold the annual Good Roads Convention in Toronto on the 2nd, 3rd and 4th of March. The sessions will be held in the county buildings. All county and township councils will be asked to send delegates, also the granges and other farmers' associations, and the boards of trade.

PRIZE AWARDS IN COVER COMPETITION.—Successful Designs for “Alexandra” Ware Catalogue Cover Conducted by the Standard Ideal Co.—Designs Submitted Considered Generally Creditable.

WE REPRODUCE HEREWITH the successful designs in the recent competition conducted by the Standard Ideal Company of Port Hope, for a front cover for a new catalogue they are issuing devoted to their “Alexandra Ware.” This competition was announced in November CONSTRUCTION, and provided that the designs should be suitable for a catalogue 9 by 12 inches, and that they should be mounted on cardboard 15 by 16 inches. Each design should be such as could be

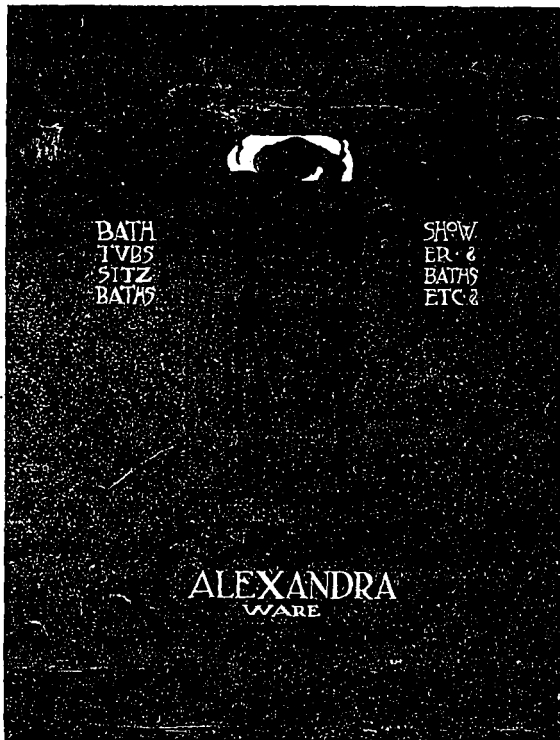
five notifications of intention to participate, and nineteen designs were finally submitted before the appointed time.

As a rule, the designs show a very fair study of the subject in hand, and, while they were not what could be expected from commercial artists, as executions in commercial work by architectural draftsmen, they were considered very creditable. Most of the competitors adhered very closely to the requirements of the competition.

The designs were displayed in the rooms of the Ontario Association of Architects, and the prizes were awarded as follows: First prize, M. McLeish, 5 Beaver Hall Square, Montreal; second prize, Hope Stewart, 1016 St. Urbain street, Montreal; third prize, Hon. C. Bekett, Hamilton, Ont; honorable mentions, Arthur J. Everett, 32 Grove avenue, Toronto; Arthwell Martin, 59 Yonge street, Toronto.

We regret very much that it is impossible for us to reproduce these designs in their original colors, as the plain black half-tone does not in any way do them justice.

The first prize design was black, bronze and white, on an olive green background. The second prize design was



First Prize—M. McLeish, 5 Beaver Hall, Square, Montreal.

reproduced by the three color process. It provided further, that the general outlines of the design should be bold in character, so that they could be reproduced for use in smaller size for a catalogue or for pamphlets. An important point that each contestant was required to take into consideration was that the word “Alexandra” should be designed in special characters and should be given prominence, as it was the intention of the company to use this special wording in all printed matter referring to “Alexandra Ware.” Another provision was that all designs should bear sufficient originality to avoid any similarity to designs that had been used or may have been in use at the time, by manufacturers of sanitary ware or any other product.

Three prizes were awarded: First prize, \$50; second prize, \$25; and third prize, \$15.

It was required that all those who wished to enter the competition, should notify the Standard Ideal Company, at Port Hope, of their participation in the competition, not later than December 15, and further, that all designs should be delivered at the Toronto office of this company, not later than December 31. There were twenty-



Second Prize—Hope Stewart, 1016 St. Urbain St., Montreal.

in black, red and white, on a grey background. The third prize design had a green and gold border, green and gold trade mark, with lettering in blue, green and gold on a grey background. The design of Arthur J. Everett, Toronto, given honorable mention, had a green border, with lettering in black and red, trade mark in green, yellow, red and purple, on a background shaded from white at the bottom to a buff tone at the top. The design of Arth-

well Martin, Toronto, given honorable mention, had white and black lettering, with shaded brown panels and a border of purple and gold on a background of white.

sity, were awarded to those which were best suited for the purpose. The judges were as follows: Geo. W. Gouinlock, O.A.A.; John M. Lyle, T.A.C. and A.L.A.; F. S. Baker, F.R.A.I.C., O.A.A., and F.R.I.B.A.; H. T. Bush, president of the Ideal Company, and the editor of CONSTRUCTION.

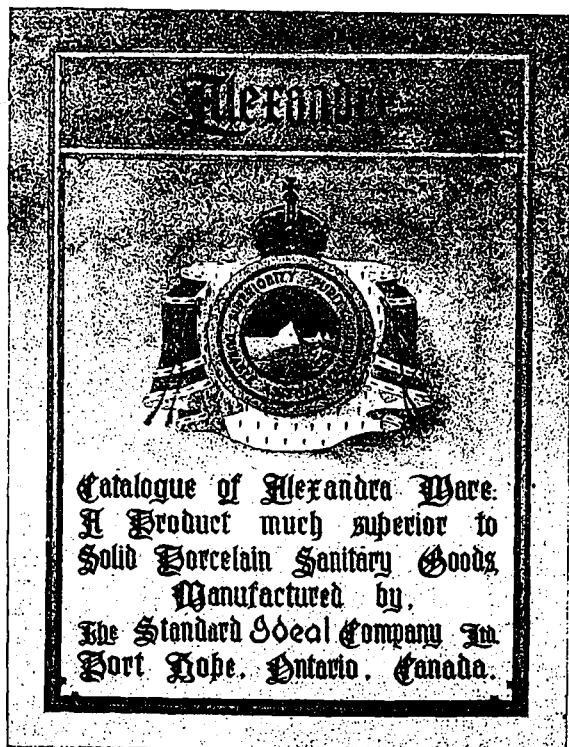
The Standard Ideal Company is to be complimented upon this innovation, and it is to be hoped that other manufacturers will follow their lead. We are satisfied that with each competition, the interest and the efficiency of architectural draftsmen in commercial design will be increased.

A DESPATCH FROM MEXICO CITY states that one of the most important discoveries which has been made in many years is the recent unearthing by Professor Ramon, Mena, the noted archæologist of Mexico, of the ancient Texcocab city of Otumba, which is located about five miles from the present city of Otumba and about fifteen miles from San Juan to Teotihuacna. Two houses



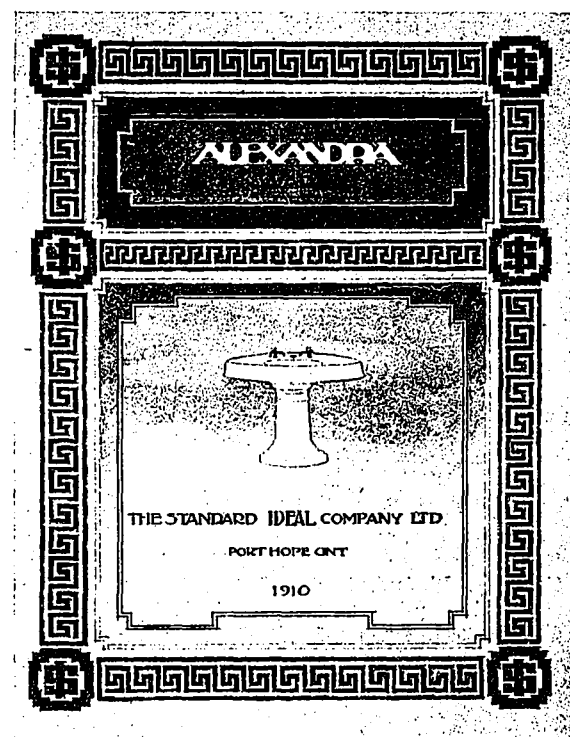
Third Prize—Harold C. Beckett, Hamilton, Ont.

The decision of the judges was influenced by the fact that it was a catalogue cover design that was required,



Honorable Mention—Arthur J. Everett, 2 Grove Ave., Toronto.

and, although many of the designs submitted, from the artistic point of view, were excellent, the prizes of neces-



Honorable Mention—Arthwell Martin, 59 Yonge St., Toronto

were unearthed, the first of which is of stone, with the stone walls, or what is left of them, about 6 feet in height. The other house, probably the residence of some priest of very high rank, was of cement; floors of cement and walls of cement, the latter being frescoed in red and blue—the whole being in a perfect state of preservation. This house contains three rooms and a cellar. The cellar also contains several rooms, all with floors of cement.—CEMENT AGE.

AT THE ANNUAL MEETING of the Quebec Branch of the Canadian Society of Civil Engineers, held recently in Quebec City, the following officers were elected for 1910: President, Capt. A. E. Doucet; secretary, P. E. Parent; councillors, Messrs. Valles, O'Donnell, Decary, E. A. Hoare and A. Leoford. After the meeting the members repaired to the City Hall, where they were entertained in the office of Mr. Leoford.

BOOK NOTICES

LIGHT AND HEAVY TIMBER FRAMING MADE EASY.
By Fred. T. Hodgson, F.R.A.I.C. Over 350 pages, fully illustrated, large mo. cloth binding. Published by Frederick J. Drake & Co., Chicago, Ill. Price \$2.00.

The author, who is the editor of the *NATIONAL BUILDER*, has, in this work, as in his previous books, taken up his subject in a most thorough and comprehensive manner. Framing in nearly all its branches is treated in a plain, intelligent manner, and the various modes of building and preparing timber are described, with a clearness and simplicity that makes his volume of great value to anyone interested in the work of this character. Apart from the easy system of balloon framing, the work explains the methods for taking hewn timber out of "wind," hewing, counter-hewing, sizing, boxing, drawboring, gaining, mortising, tenoning, kerfing, splicing, and all other details in connection with timber framing in barns, bridges, centers, shoring, needling, groins, timber houses, churches, spires, towers, factories, warehouses, and all other similar works. The principal object of this book is to elucidate the principles of heavy framing, a liberal space being devoted to designs in timber work of all kinds, including roofs, domes, framed walls, bridges, towers, centre spires and other work of a similar nature. All of the numerous types of joints employed in wood work, either heavy, or of the balloon or scantling type, of the latest and most approved form are clearly described, and illustrated. In the examples of balloon framing shown, special effort has been put forth to present the reader with the results of experiences which have proven to be the best for the purposes to which they were applied. Regarding heavy timber framing the author has followed the best known methods, to which he has added the results of his own experience of more than thirty years in the designing and erection of heavy structures in wood. The work is illustrated with over 400 examples of framing of all kinds; and the text is printed in a clear and readable type.

THE "PRACTICAL ENGINEER" POCKET BOOK AND DIARY FOR 1910.

Compiled and published by the Technical Publishing Company, Limited, 55-77 Chancery Lane, London, Eng. Cloth, price, 1s. net. Leather, gilt with Diary on ruled section paper, 1s. 6d net. Postage extra.

The need for a reliable reference manual and convenient form of record, in engineering work, is most admirably met by this handy little volume. It contains a wealth of carefully compiled data and information, dealing in a concise and comprehensive manner, with practically every phase of mechanics, motive force, pressures, hydraulics, electricity, transmission, heating surface, radiation, ventilation, construction, materials, weights, volumes, areas, and a multiplicity of other subjects included in the field of engineering activity. In undertaking this volume, the publishers' aim to produce a book that would serve its purpose to the fullest extent, has met with every success. The text of the previous editions has been completely revised, and the work brought up to a higher plane of usefulness, by additional information, comprising, among other things, notes on fuel testing, condensers, friction of air and water in pipes, alloys, table of properties of metals, pyrometry, suction gas producers, emery grinding, etc., etc. Of interest to architects is the data relating to reinforced concrete, tensile and compressive strength of materials, floor and roof loads, as well as many of the numerous tests and tables found throughout the volume. The book is a splendid time saver in either the field or shop; the subject matter is carefully indexed to admit of the quickest reference; and although the

text contains approximately 700 pages, the manual is of a convenient size to fit readily into either the coat or hip pocket.

NEW EASTERN SALES MANAGER

THE STANDARD IDEAL COMPANY, Port Hope, Ont., has appointed Mr. John J. Laferme, F.I.S.E., who, until recently, represented the company's interest in Europe, as Eastern sales manager for the Dominion, with headquarters in Montreal.

Mr. Laferme assumes his new office with a broad experience in the sale and installation of sanitary fixtures and equipment, having been in charge of the foreign sales department of the Standard Sanitary Company of Pittsburg before joining the Standard Ideal. In addition to being a Fellow to the Institute of Sanitary Engineers, of England, Mr. Laferme has also qualified himself from



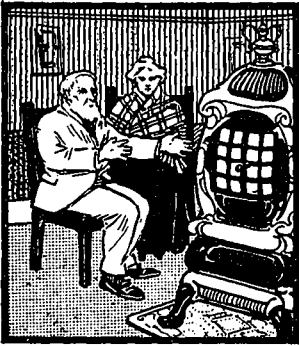
John J. Laferme, who has been appointed Eastern Sales Manager for the Standard Ideal Company, with headquarters in Montreal.

an architectural standpoint by several years' study in Paris, and is, therefore, able to offer invaluable assistance and co-operation to the architects in the East, in specifying modern plumbing fixtures, and carrying out the sanitary features of a building. Mr. Laferme has had conferred upon him by the French Government the distinction of "Officier d'Academies," for the valuable service which he rendered to that country and the United States at the Paris Exposition in 1900.

The sales department of the Standard Ideal Company in Paris, under a capable head, will continue to look after the interests of the company in continental Europe.

SEAMEN, KENT EMPLOYEES DINE

THE SEAMAN, KENT COMPANY, manufacturers of the popular "Beaver Brand" hardwood flooring, are at present formulating a co-operative plan for the benefit of those who have been in their employ for a certain period. An announcement to this effect was made by Mr. F. Kent, at the annual banquet recently tendered by the company to its employees, at Meaford, Ont. The affair was a notable one, as indicating to an unusual degree, the strong feeling of harmony which exists between the company and its men. Over one hundred and fifty of the working and business staff sat down to dinner, and appropriate toasts, songs and speeches, in capable hands,



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When you put a hot water heating system operated by a Daisy Hot Water Boiler and King Radiators into a house, you add more than the actual cost of that system to the selling value of the house.

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contributed to the zest and enjoyment of an evening that is long to be remembered. Among the invited guests who honored the occasion with their presence were: Mayor Clarke, Major Cleland, and several prominent members of the official and business life of Meaford.

The many excellent qualities of "Beaver Brand" flooring and the uniformity of output of the Seaman, Kent factories, is due in no little measure, to the fact that the company has at all times succeeded in retaining in its employ a full staff of capable and efficient hands. The new co-operative policy announced by Mr. Kent, which is to benefit all who have been in their employ for five years or more, is to go into effect some time this year. It is but another evidence of the warm interest which the company has always taken in the welfare of its workmen, and is something that can well commend itself to other Canadian manufacturers.

CALENDERS

"CONSTRUCTION" is indebted to Francis Hyde and Company, Montreal, the well-known dealers in contractors' and builders' supplies and equipment, for one of the handsomest calendars which the firm is mailing to its patrons and friends. This splendid art offering, entitled "The Parisienne," is reproduced from an original painting exhibited at the Paris Salon in 1906, by Jean Sala, a Spanish artist, where it won most favorable approval as a distinguished example of French figure painting. The picture tells a story of a fair demoiselle starting from her home and the collie who hopes to accompany her. The thoroughbred creature waits the call of her voice. Every muscle is quivering with suppressed excitement, and his wistful eyes are fixed on those of his mistress with that dumb looke which is more eloquent than words. The girl knows her power over him and for the moment, in a spirit of mischief, seems to invite him with look and gesture. The very figure is expressive. From the tilt of the hat, through the turn of the head on its slender neck, the poise of the trim shoulders and the supple grace of the body, there flows a charm of movement as eloquent as it is full of sprightly life. Not less attractive than the human interest of the picture, is the handsome composition of form and color which the two figures make against the background. Francis Hyde and Company are to be congratulated on the selection of their subject, as it makes a most acceptable wall piece for either the office or the home.

"AT THE CLOSE OF DAY," is the title of an especially fine calendar to reach our office, from The Sand and Dredging, Limited, of Toronto. It is a color photographic reproduction from an original painting by Jean Beauduin, a native of Belgium, who in 1893 won the medal of honor at the Paris Salon. It depicts an eventide scene in Flanders, where a peasant lass, seated on a stone bench on the hillside above her home, snatches a moment relaxation after a hard day's work. There is a shade of pensiveness in the maid's face, which takes a strong hold of one's feelings, and a peculiar picturesqueness in sturdy masonry and house-tops and hill beyond, which gives a striking insight into the simple and quaint surroundings of Belgium peasant life. Mr. Beauduin's work has attracted considerable attention from the critics, because of its luminosity of color and intensity of subject; and "At The Close of Day" is regarded as one of his best paintings. In the selection of this calendar, the choice of The Sand and Dredging, Limited, could hardly be improved upon, and the subject is well worth framing, after the date pad has served its usefulness,

WE ALSO DESIRE to thank the Toronto office of the Crushed Stone, Limited, for being remembered in the distributios of their annual calendar, which we might say is equal or superior, to any of the many excellent offerings of the character which the company has made in the past. The subject, that of a beautiful young woman, apparently making afteronon calls, is well chosen, and the color composition interesting as a study of delicate tints. It is something which must be seen to be appreciated. and those whose names are on the company's mailing list are indeed fortunate.

A NEW SYSTEM OF REINFORCED CONCRETE construction in which beams and girders are eliminated, and the walls and columns carry continuous reinforced floor slabs, is being introduced by Francis M. Burton, Chicago, the architect for the Royal Insurance building. The columns are formed of four angle irons which are spaced, bolted and hooped together. The columns are three storeys high set into bases which are lined up 16 feet from centers, at the height of each floor carrying rods radiate from each column and extend to the full width of the span to the next set of columns and properly anchored distributing rods are then placed over the tension or conveying rods. The columns are either wire bound or hooped. The false work consists of forms for the columns, which are enlarged in the form of an inverted bell just below the false work upon which the floor slabs are formed. Where the outside walls are in place two storeys high the concreting can be done on both storeys at the same time.

THREE HUNDRED AND SIXTY-SIX new corporations, with an aggregate capitalization of \$119,324,875, were organized in Canada during the fiscal year ended March 31st, 1909, while the capitalization of existing companies was increased by \$72,293,000.

THE KAISER'S NEW PALACE which is now being erected in Posen at a cost of \$7,000,000, follows, in style, the mediaeval fortress with characteristic ramparts, bastions and towers. It was designed by Frans Schwetens, and will be shortly ready for occupancy.

Catalogues Wanted

Owing to a fire which destroyed my office during September last, all my catalogues were burned. A new supply will be thankfully received.

W. A. La Chance

ARCHITECT

Saskatoon, Sask.

DRAUGHTSMAN WANTED

Architectural draughtsman, middle age, capable of superintending construction. State experience, salary expected, etc. Position to be filled at once.

W. W. LA CHANCE, Architect

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