THE CANADIAN ARCHITECT AND BUILDER

VOL. XVII.—No. 6. TORONTO, MONTREAL AND WINNIPEG, CANADA, JUNE, 1904 PRICE 20 CENTS $3 00 PER YEAR

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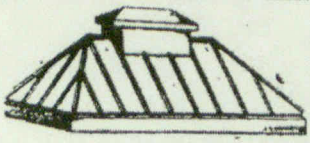

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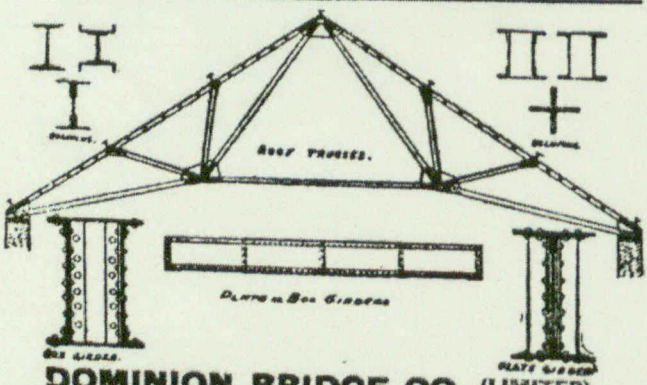

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PAGES

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The Canadian Architect and Builder

VOL. XVII.—No. 198. JUNE, 1904.

ILLUSTRATIONS ON SHEETS.

Plaster Decoration.—R. S. Lorimer, A.R.S.A., Architect.
Main Corridor, City Hall, Toronto.—E. J. Lennox, Architect.
A Corner at McGill University, Montreal.—Sketch by Gargoyle.
Old Building, Montreal.—Sketch by Gargoyle.

ADDITIONAL ILLUSTRATIONS IN ARCHITECTS' EDITION.

A Passage in the Falkland Palace, Scotland.—John Knecross, R.S.G., Architect.
House in Crescent Road, Toronto.—Sproatt & Rolph, Architects.

ILLUSTRATIONS IN TEXT.

Views of Houses in Montreal, accompanying Montreal Letter.

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SPECIAL CONTRIBUTORS.

MR. W. A. LANGTON, Architect, London, Eng.
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" Prof. Percy E. Nobbs, Montreal.
" FREDERICK G. TODD, Landscape Architect, Montreal
" W. H. ELLIOTT, Toronto.
" A. F. DUNLOP, R.C.A., Architect, Montreal.
" FRED. T. HODGSON, Architect, Collingwood, Ont.

OUR WINNIPEG OFFICE.

The publishers of this Journal have recently opened a branch office at No. 310 McIntyre Block, Winnipeg. A resident representative has been appointed who will be exclusively employed in advancing the circulation of this Journal and in keeping our readers informed regarding the latest developments throughout the west. The kind co-operation of our friends in the west is solicited in behalf of the success of this enterprise.

Window Glass

For a year past the window glass factories of the United States have been closed down, pending an agreement as to prices and wages. The supply of window glass has run very low, the scarcity being enhanced by the recent great fires. The present situation will probably lead to extensive importations from Belgium.

Building Conditions in the United States

The building season opened in New York this year without a strike, a most unusual circumstance. Among the causes which are believed to have brought about this condition are the serious defeat and loss of time sustained by the union workmen last year, the change of date of building agreements from the first of May to the first of January, and the less prosperous commercial conditions now prevailing in the United States.

A New Building Regulation.

An order has been issued by the superintendent of Buildings for Brooklyn which in future will compel the filing of duplicate sets of plans of all new buildings with the Building Department. The duplicate of the plans on file in the office of the Building Superintendent will be kept on the job for examination by the Inspector.

A Suggestion to Manufacturers.

Manufacturers of building materials in sending catalogues to architects would do well to enclose prices. As a rule this is not done, and architects are put to the trouble of writing for prices. We have lately received complaints on this head from some architects who could not understand the wisdom of sending out expensive literature which in the absence of prices is comparatively worthless and frequently finds its way to the waste basket.

A New Employment of Concrete

A grand stand with a seating capacity of 9000, built entirely of reinforced concrete, has recently been completed for Washington University. The area of the land is 450 x 750 feet. The seats and front and rear walls are reinforced with steel bars embedded in the concrete. The seats are supported by

cross-walls 12 inches thick at the base, 8 inches thick at the top and from 4 to 10 feet high. After the supporting walls were in position the seats and risers were built upon them in alternate sections. Careful attention was given to provide thorough drainage of the foundations. The total cost of the structure was about $32,000.

Plastering

Much of the plastering done in Toronto in recent years even in expensive buildings is of a decidedly poor quality. Notwithstanding that the cost of work in this line has greatly advanced, the modern work bears no comparison with the older examples. In much of the work now-a-days, sharp sand and hair —two of the requisite ingredients of good mortar— are conspicuous by their absence. A diligent search might reveal a little hair scattered through the mortar, but the quantity is so infinitesimal as not to have much value as a binding material. When to this is added the fact that the so-called sand employed is oftentimes little better than mud, it is not surprising that the lath and plaster soon part company.

Painters' Convention.

The recent difficulty with their employers having been settled the Master Painters of Montreal are now giving attention to perfecting arrangements for the first Annual Convention of the Canadian Master Painters' Association to be held in that city during the last week in July. Apart from the benefit to be derived from listening to papers and discussions on subjects affecting the painting business, and profiting by the opportunity of comparing experiences with others in same line of business, master painters' who may attend this convention will receive a hospitable welcome from the local Association in Montreal and will find much enjoyment in making acquaintance with the leading commercial and financial centre of Canada.

Elevators.

The City of Baltimore has recently adopted new regulations governing the installation and operation of freight and passenger elevators. The principal provisions are that the carrying capacity of elevators is prescribed according to the area, which allows one passenger to every 400 square inches of floor space. Operators of elevators must not be under 18 years of age, and must have a certificate from an elevator company that they possess the necessary practical knowledge. The regulations provide that stairways must be separated from elevator shafts by fireproof partitions, and in the case of buildings more than three storeys high above basement, brick walls of a designated thickness are specified. All elevators are placed under the absolute jurisdiction of the building inspector.

Fire Prevention.

The British Fire Prevention Committee have hit upon a novel method for reducing the fire risk in the future. In view of the great loss of life and property due to children playing with fire, the Committee announce that, through a generous donation from a Canadian member (said to be Mr. Chas E. Goad, C.E.), it is able to offer the Committee's gold medal and a purse of £20 for the best fable for children calculated to serve as a warning against the danger of playing with matches or fire. The competition for this prize is open to British subjects residing in any part of the Empire. Elementary school teachers are particularly invited to compete. Two silver and four bronze medals will also be given as additional awards for meritorious essays. Copies of the conditions governing the Competition and all particulars can be obtained at the Committee's offices, 1, Waterloo Place, London, S.W., England, upon application by letter only enclosing a stamped addressed envelope. The Competition will close on the 31st of October next, and the awards will be announced in the leading British and Colonial papers.

MONTREAL LETTER.

No. III.

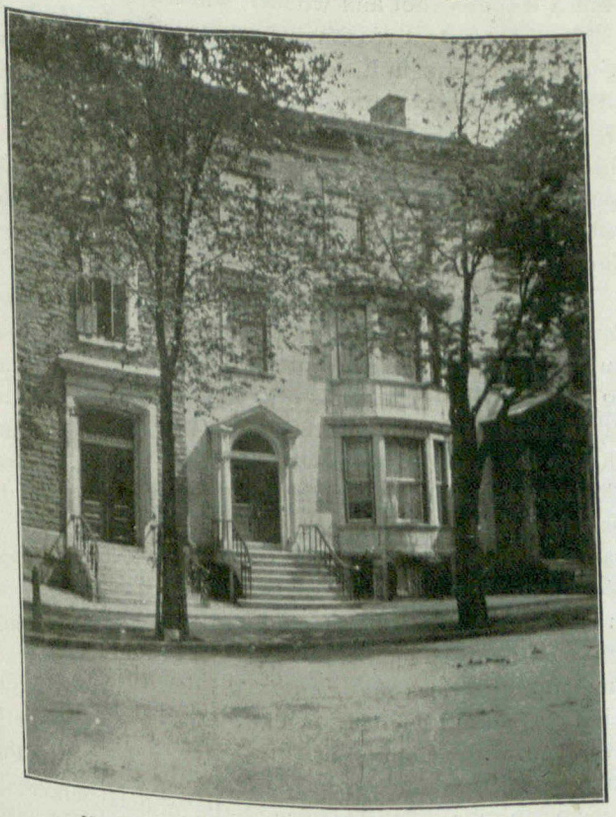
Montreal is at present looking its best in the fresh green of early summer which happily pervades all parts of the city except the docks. In many directions building operations are in full swing. The hapless remains of the old Mount Royal Club are being collected, and it will not be long before the new Club-

HOUSE ON PEEL STREET, MONTREAL.

house begins to show behind its hoarding. Messrs. McKim, Mead & White are the architects, and while it is a matter for congratulation all round that an example of that rarified classic (with all the Beaux Arts claptrap material chastely omitted), which is associated with the name of McKim, will arise in our midst, it is just a little humiliating to the profession here that the work should go to New York. True we have no one here as great as Mr. McKim, but it is a little surprising to find the Montrealers protective instincts not manifesting themselves. The fact is, art is not ruled by the usual laws of supply and demand, nor is it amenable to commercial policies—not even in this sordid commercial age, thank God! In art the supply creates the demand, which being so all things are possible. But if we pursue this vein of thought there will be no room for news, so to the next site.

The M.A.A. Clubhouse, (Mr. D. R. Brown and J. M. Miller, architects), which is situated on Peel Street, is to be completed before the end of the year, and the first brick was laid on the 4th day of June. The site is one typical of that part of the tow

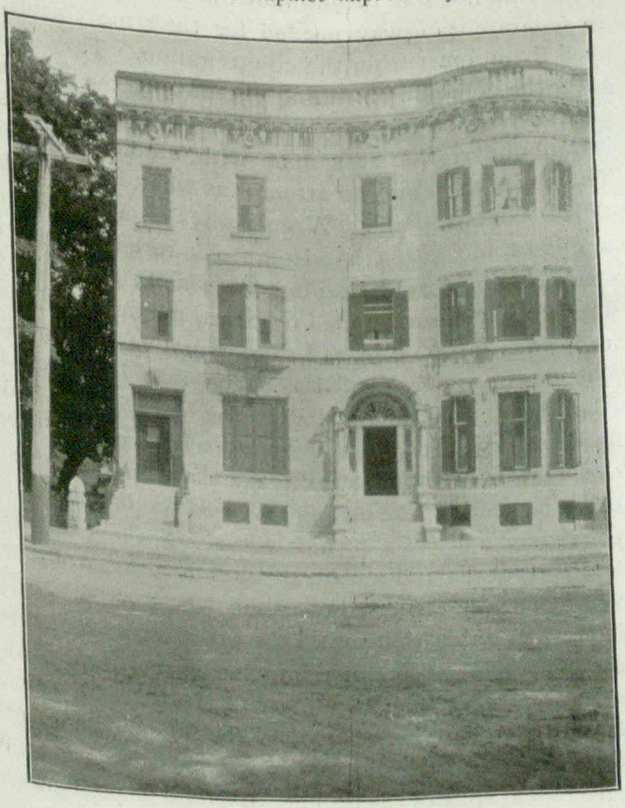
—sliding clay as soft as butter—and heavy piling and concreteing have had to be used. Brown uses as his artistic language that type of Helenized brick building which is rapidly becoming the venacular architecture of the States and which I doubt not



HOUSE ON SHERBROOKE STREET, MONTREAL.

the architectural students of the year 4000 A.D. will categorize as "American 20th Century."

Talking of architectural students reminds me that the McGill Architectural Department Pamphlet explanatory of the new de-



HOUSE ON SHERBROOKE STREET, MONTREAL.

gree of Bachelor of Architecture and the means of acquiring that high sounding title has now been published and copies are being sent to all the architects of the Dominion. In a sense this pamphlet is the "last word" on architectural education, for the scheme therein set forth is in substance a compromise between the training which articled pupils receive in English offices and that obtained in the American Schools of Architecture.

You will find herewith a photograph of a nice little building, Nos. 7,9,11, St. John Street, in brick and stone, which has been recently completed and also of two houses on Sherbrooke St.—Residences in plain gray limestone with dainty wooden porches painted white. For once in a way the porch order is of a scale and refinement which does not contradict the material facts of the case. The outside garb of a house is very like the outside garb of a man. In nine cases out of ten an accurate reflection of the life inside, in the tenth a beautiful swindle. Our respect is due to the man who puts up a wooden column and doesn't pretend it's made of granite, especially when the column is fair to look upon.

I also send a snapshot of a house on Peel Street. The worst we can say of it is that it's rather too consciously picturesque—like a girl, who, without being overdressed or vulgar, has put on she can stand. The materials are yellow brick with gray lime stone corbels and dressings, and the usual thin black slate of of the district, and the combination is decidedly charming, especially when the snow is on the ground. Although the pedigree of this house connects it with the Francis I period it is very

NO. 7-9-11 ST. JOHN STREET, MONTREAL.

near to Scotch work, the same toning down and "stolidifying" of the volatile fancies and exubrances of the early Renaissance in France.

It is extraordinary how little direct Scots and English influence there is in the architecture of Canada. Italian, French and specialized American growths are common, but the fact that in no country in the world have the private house and the parish church attained developments comfarable with the perfections to be found in England and Scotland, is not reflected in the private houses or the parish churches on this side. Readily do we yield to the French Cathedrals the first place among Cathedrals, to the Italian Palaces the first place among their kind, and to the New Yorkers the first place among the builders of skyscrapers. The domestic work and the smaller churches of England are pre-eminent among such things, and it is high time that more attention were be stowed upon them by those willing to learn from the "old fellows" what can be learned from no other source.

THE GARGOYLE.

M. Auguste Choisy, inspector general in the Seroice des Ponts et Chausees, Paris, has been selected as the recipient this year of the Royal Gold Medal presented annually by the Royal Institute of British Architects.

The Society of the Beaux Arts Architects announce that they have established a travelling scholarship with a prize of $2,000 to be paid within the next two years to the draughtsman who shall become the winner of a series of competitions to be held between April 16 and July 4th. Competitors must be under 25 years of age.

WREN'S CHURCHES.

Having fallen in love with Wren's churches, I should like to give an account of some of the reasons why they are attractive and also to give an example which seems to comprise in itself the principal practical needs of a church and to do it in a manner of design that is well suited to our conditions of building and our feeling about architecture.

In the first place, as to the style. It is impossible perhaps to enter into this question without becoming a party to a controversy which one would like to avoid, chiefly because it is difficult to know where the truth lies. Whatever may be the truth, on the side of the Gothic school, its application has not been illustrated in churches of that type, which are seldom true in design and seldom seem to be true to our own period. Wren, on the other hand, does not sham ; and his style in general is in accordance with the feeling of our times, which is for an architecture of expression rather than for one of construction. In other words to follow in the school of Wren (not, that is to say, to imitate in detail) is to design churches in the same style in which we design our other monumental buildings and even our important houses, and that is at the bottom of the attraction one feels for his churches. If the mediaevalist in religion points on the other side to the unchanged character of the Church of England, it is not necessary to enter into that controversy ; for the Church of Rome, as to the unchanging character of which there is no controversy, has distinctly abandoned the mediæval style of building without apparently bestowing a thought upon the matter. At any rate one charm that Wren's churches have for the writer of this article is that they are of his own time, and after their adaptation to modern usage in the Church of England, are so nearly our's that they are both satisfactory in themselves and suggest the possibility of building churches that do not make us feel, when we enter their doors, that we have entered upon another century and a dead one.

To say that Wren did not sham may require the support of illustration. One is given in Fig. 1. If the drawing had been labelled "ceiling" instead of "roof," it would give no handle for doubt. It is in reality a ceiling, an obvious plaster ceiling, made in barrel form and lightened (greatly to the advantage of its beauty) by penetrations for attic windows. The columns are of stone and the beams on them, which carry nothing but a wooden roof and wooden windows, are of wood. This is not only a reasonable construction but looks so. Sir Gilbert Scott in his great London church, St. Mary Abbotts at Kensington, has also a barrel shaped ceiling. It is of wood, but, if we concede that this is a more honorable material, we must stop there ; it is not penetrated and is very dull ; it springs from a cornice which is some distance above pointed windows, which look foolish in consequence.

If we approach the study of Wren's plans with an open mind, they are full of suggestion, being indeed full of variety. Wren's method appears to have been to include within the walls of a church all or nearly all of its available building area. As the lots were of all shapes the resulting form was often extremely irregular. To reduce these to practicable form there were three principal agencies—tower, vestibule and aisle. By the varied disposition of these Wren produced a series of plans extraordinarily varied, but for the most consisting in the main of a square or oblong area not recessed at the east end. This suited the manner of conducting the church services that remained through the Restoration period and beyond, as a legacy from the Presbyterianism of the Commonwealth. The "three-decker" pulpit rose from among the pews, with seats for the three performers of the service :—the minister who read the service in the middle ; below him the clerk who led the responses of the congregation ; and above, high up so as to rake the galleries, the preacher abided his time in a black gown and bands. These functionaries remained immovable throughout the service ; there was no separate gangway needed for their movements, to keep them apart from the congregation. They did not enter the communion railing except upon the infrequent occasions when the sacrament was administered ; and its administration was done with studied simplicity. There was therefore no attempt at what is now-a-days called "an east end". Wren always dignified his communion table with a handsome oak reredos ; but the space occupied by the railing was small ; it was on the floor level and surrounded by pews, making thus rather an incident in the east end than a motive in its plan. The church was regarded as a chamber in which the central point was the pulpit. The sacraments had a space reserved for them at opposite ends of the church; the font near the entrance, the communion table at the other end. The ceiling followed the floor plan and consists usually of a cornice returning along the east and west walls and a central panel or a series of panels symmetrically arranged over the whole church. This is the first thing that meets the eye now, as one enters the church, and the first impression is usually of a chamber rather than of a church. It is extraordinary how subsequent perception of the floor arrangement dissipates this first idea and how impossible it is to return to it in spite of the ceiling. It would be perhaps well to give an example here of one of the churches, plainest in plan, and reserve for a future occasion an illustration more full of attractive suggestions.

Fig. 2 is a plan of St. Nicholas Cole Abbey taken from an old plan. The pulpit as drawn is all that was shown on the plan, but the seats no doubt, as in other examples which remain unchanged, ran to the east

wall, leaving a space round the communion rail about equivalent to that between the railing and the foot of the pulpit steps.

The south side used to be blocked by a building so that there are windows only on two sides. The difference in the walls is an advantage. The order is quasi-

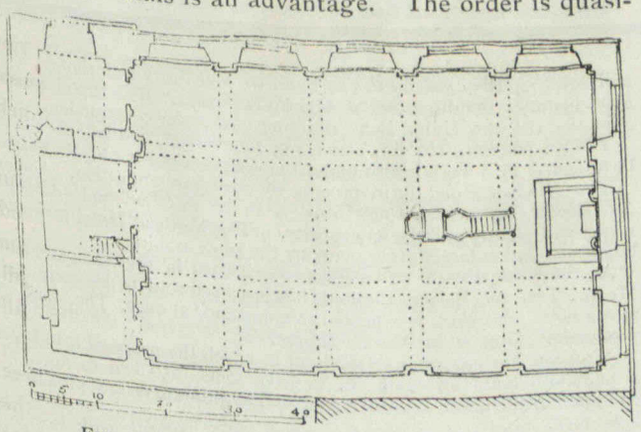
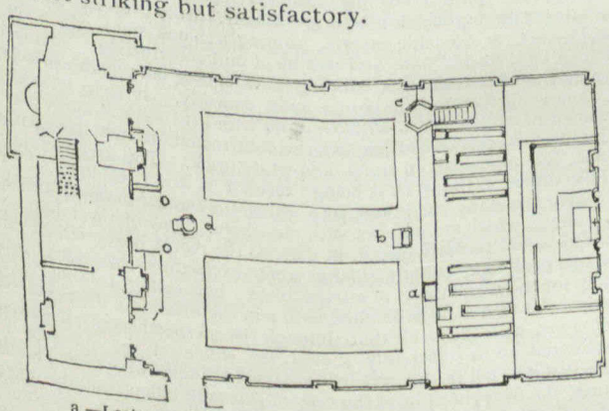


FIG. 2.—PLAN OF ST. NICHOLAS COLE ABBEY.

Corinthian; Wren was apt to use an interesting freedom in the employment of "the Renaissance box of bricks." The moulding of the ceiling beams is that of the cornice down to the bottom of the corona, and the beams, which have a soffit the width of the upper diameter of the pilasters, mitre with this much of the cornice. The result is neat but a little flat; it suggests coffered panels. The walls frieze and soffit of ceiling and beams are coloured yellow; the order (including the beam mouldings) and the dado black, touched with gilding; an effect striking but satisfactory.



a.—Lectern. b.—Litany Desk. c.—Pulpit. d.—Font.

FIG. 3—SEATING PLAN FOR ST. NICHOLAS COLE ABBEY.

In Fig. 3 is shown a modern seat arrangement compounded of St. Nicholas and other churches; that is to say, there is in St. Nicholas an eccentric massing of the choir on one side, and it seems better for the sake of a descriptive plan, to adopt the arrangement usually to be found in other churches. The dignity is apparent, obtained at the expense of a good deal of space, but it is the nature of the plain plan to get its effects by space; and indeed the lesson to be learned from this adaptation of Wren's plain plans is the excellence of the effect thus obtained. The reduced seating accommodation in a city church is never sufficiently reduced to meet the sparsity of the congregation; for further accommodation, in a church with greater need for seats, the body of the church would stand elongation. If this were done and the ceiling not returned but made to run only from west to east, reflecting in some way the subdivisions of the floor, there would be a good modern church.*

W. A. LANGTON.

*The organ in St. Nicholas Cole Abbey, as in most of Wren's churches, remains in a gallery at the west end.

BUILDING MATERIALS AFFECTED BY THE NEW TARIFF.

Among the changes in the Canadian tariff announced by the Dominion government are some which affect certain lines of building supplies. The duty on plate glass not bevelled in sheets or panes not exceeding seven square feet each, n.e.s., is lowered to 10 per cent. ad valorem. On the same material in sheets or panes exceeding seven square feet and not exceeding 25 square feet each the duty will be 25 per cent. ad valorem.

The maximum duty under the British preference on china and porcelain ware is reduced from 20 to 15 per cent. ad valorem; that on common and colorless window glass from 13 1-3 per cent. to 7½ per cent.

RADIATION OF PIPE SURFACE.*

TABLE M.

RADIATING SURFACE FOR ORDINARY BUILDINGS. RESULTS OBTAINED FROM ACTUAL TESTS.

Compare these with calculations obtained from various formulas, TABLE N.

No		Feet Super.	Feet Super. carried to Col. 1, Table N.	Water	Inside	Outside	Heat Ratio Multiplier	Decimal Equiv. Table K.
13.	Dining Room.							
	Glass	90						
	Wall	300	70	165°	60°	30°	·285	1·
	Ceiling	300						
	Cubic Capacity	3,400						
14.	Office.							
	Glass	370						
	Exposed Wall	1,530	168	171°	44°	20°	·189	·5
	Plaster Ceiling	2,130						
	Cubic Capacity	23,500						
15.	Do.	Do.	353	167°	56°	20°	·324	1·
16.	Do.	Do.	538	175°	68°	22°	·43	1·5
17	Do.	Do.	723	167°	70°	16°	·556	2·
18.	Do.	Do.	908	161°	76°	30°	·541	2·65
19.	Do.	Do.	1,093	161°	87°	42°	·608	3·
20.	Do.	Do.	1,278	157°	96°	48°	·8	3·
21.	Church, tiled roof, not ceiled							
	Glass	688						
	Wall	9,000	1,900	170°	60°	32°	·255	
	Cubic Capacity	176,000						
22	Drying Room, when empty							
	Glass	50						
	Wall	476	546	180°	100°	40°	·75	
	Cubic Capacity	4,850						
	Matchboard Ceiling	700						
23.	Laundry Drying Room, when empty							
	Glass	25						
	Wall	100	140	200°	105°	47°	·61	6·4
	Cubic Capacity	2,682						

TABLE N.

RADIATING SURFACE REQUIRED FOR ORDINARY BUILDINGS.

Calculated from the formulas of various authorities, compared with Actual Radiation used in Tests shown in Table M, showing discrepancies in the results obtained.

No	1 Actual Radiation Feet super Table M	2 A. COX G × ·87 W × ·087 CC × ·0114 × H.R. Table D	3 J. KEITH G × ·625 W × ·125 Ceiling ·062 × H.R.	4 W. J. BALDWIN G × ·85 W × ·085 × H.R.	5 PROFESSOR CARPENTER G × ·1 W × ·25 C.C × ·018 × H.R.	6 F. DYE G × ·83 W × ·083 Ceiling ·062 × H.R.	7 W. JONES Rule H G ÷ 6 W ÷ 12 C. C. ÷ 120 × Dec. Equiv. Table K
13. Dining Room	70	40	29	28	64	33	70
14. Office	168	136	104	84	222	107	177
15. Same Office	353	234	179	143	380	183	355
16. Do.	538	310	238	192	505	243	532
17. Do.	723	401	308	246	652	314	710
18. Do.	908	390	299	250	635	306	905
19. Do.	1,093	439	366	270	714	344	1,065
20. Do.	1,278	577	443	355	940	452	1,349
21. Do	1,900	863	554	344	1,557	336	1,964
22. Do.	546	105	100	61	192	92	492
23. Do.	140	36	16	17	60	17	147
Totals	7,717	3,531	2,636	1,978	5,921	2,427	7,766

*From a Paper by Walter Jones, M. I., Mech. E., read before the Institution of Heating and Ventilating Engineers of Great Britain.

NORTHWEST NOTES

Branch office of the CANADIAN ARCHITECT AND BUILDER,
310 McIntyre Block, WINNIPEG, June 14, 1904.

At the last monthly meeting of the Winnipeg Builders' Exchange it was unanimously resolved that the Exchange adopt the Uniform Contract and that members of the Exchange shall sign no other, the uniform general conditions of which are as follows :—

The Contractor will set out all the works in accordance with the specifications and drawings and have all necessary levelling carefully done and assist at any time or times that may be desired in testing any of the said works.

The Contractor is to employ a competent foreman for each different branch of the trade.

No portion of the work is to be sub-let unless by written consent of the Architect.

The Contractor is to furnish all transportation, apparatus, scaffolding and utensils needed for performing the work.

The drawings, figures and details are to be considered part of and as illustrating the specifications and must be carefully followed. The details are intended to be final concerning all sizes, lines, etc., therein set forth and are not to be deviated from without the written direction of the Architect. Figuring and notes are to be more authoritative than scale sizes, not only in the details but in all drawings, otherwise sizes are to be scaled as accurately as possible and followed.

If the plan and specifications contradict one another or are ambiguous the attention of the Architect shall be drawn to the fact and his decision obtained before the work is undertaken.

The Contractor is to be responsible for all violations of the law caused by obstructing streets and sidewalks ; to obtain correct lines (except side lines) and grades from the City Engineer ; to comply with all requirements of the building by-laws of the City ; to take out and pay for all necessary permits for all temporary obstructions and enclosures, and to pay all proper and legal fees to public officials ; to be responsible for all damages to neighboring proprietors caused by the construction and carrying out of the work in a negligent or improper manner and to hold the proprietor harmless from all claims in respect thereof, and at the completion of the work shall remove all rubbish and waste material from the building, grounds and street and leave the same clean and relay all sidewalks that may have been removed or damaged through the progress of the work to the satisfaction of the Architect.

If at any time the Architect considers any workman incompetent, the Contractor will be required to dismiss the same if requested by the Architect so to do.

Should the work run on until the cold weather, Contractor must heat the building at his own expense if necessary for the completion of the work to be done by him and to the satisfaction of the Architect.

All drawings and specifications are and shall remain the property of the Architect.

The visitor to Winnipeg cannot fail to be struck immediately with the air of prosperity with which he is confronted; on all sides he is face to face with a spirit of progress and confidence, which speaks well for its future and carries the conviction of an established prosperity, and stands in somewhat striking contrast with the deliberate steady ways of the eastern provinces. Undoubtedly Winnipeg has secured for itself not only the premier place among western cities, but fixed itself as the great Commercial City of Western Canada.

The advancement of Canada's Prairie City is clearly marked by the aspect which meets the observer on his journey through the principal streets. Side by side with the fine modern structures which are rapidly springing up on all sides, are still to be seen many of the original one and two story buildings looking strangely antique in contrast to the present-day sky-scraper which is fast gaining popularity.

Perhaps one of the surest marks of success is to be seen in the continual flow of commercial men passing through the city.

The great scarcity of hotel accommodation is another indication of the city's rapid progress. There are altogether some fifty hotels in the City, all catering for the commercial community. Until recently this was considered ample for the city's needs; now, however, hotels are finding increased difficulty in meeting the demands made upon them, and are finding it necessaay to make preparation to supplement their present accommodation.

A large block known as the Assiniboine Block, and at present used as an apartment block, has just been purchased by Messrs. McLean Bros., and is to be converted into an up-to-date hotel. The building is situated in the Main Street, and when completed is expected to be one of the finest hotel structures of its kind.

O'Connor's Hotel on Main St. is also to be replaced by an imposing new building, designed by Mr. J. Cadham, which will be fitted up with the latest improvements.

The permit for the C.P.R. Hotel and new station has been granted. Work is expected to start at once. All the details of this hotel are arranged with the greatest precision, and whilst the outward design is perhaps somewhat plain and uninteresting, it is skilfully planned in point of utility and equipment.

The Queens Hotel on Portage Ave. is to be remodelled under the direction of Mr. Sam Hooper. The plans, which have been submitted, show a well arranged building.

The Leland Hotel, which stands on one site of the City Hall Square, is also to be remodelled. A new billiard room is to be furnished, a new bar and saloon, and additional stories added, which will bring up the capacity to one hundred and thirty bed rooms. The work is under the direction of Mr. F. R. Evans. This hotel stands adjoining the new Union Bank Building now under construction.

The St. Nicholas Hotel is also being remodelled, and an annex is to be added. This work is also under the direction of Mr. F. R. Evans.

The Windsor Hotel is in process of complete renovation. Under Mr. Evans' supervision a new front is to be installed and additions which will greatly enlarge its capacity. The National Hotel is also to be altered and enlarged from plans by the same architect.

An imposing block of business warehouses in the occupation of Messrs. Tees and Persee, Limited, has just been sold to be converted into a hotel, and work is expected to commence at once. The block is prominently situated on Market Square.

A scheme has just come to the front in which the proposal is to erect a mammoth hotel on Main St. to have some 250 bed rooms, and equipped in the most approved style. The promoters are prominent local men.

It will, of course, be some time yet before all this work is completed, and, at the present rate of progress, it is not at all unlikely that the additions will scarcely meet the natural increase of business.

The building permits issued up to a recent date, and which cover in the main, either business premises or dwellings, give a total of some 1,100 buildings, at an aggregate cost of nearly $5,000,000, and it is not expected that this will materially relieve the situation. To this amount should be added the cost of the C.P.R. Hotel and station, the amount of which has not yet been published, but which is considered to be in the neighbourhood of one and half millions.

The City Hall, which occupies a fine position in the centre of the city, is attractive in appearance, is not scarcely commodious enough, although, at its erection a few years since, it was thought to have been sufficient to provide for all expected development. The insufficiency of accomodation in this building will, however, be met in a measure when the new Library is completed by the removal to that building of the present library, reading room, etc., thus giving additional space for offices.

There are quite a few fine business blocks in course of erection, prominent among which is one for Messrs. Miller, Morse & Co. on McDermott & Adelaide Streets, forming a block some 260 x 98 ft. It is to be 5 stories hign, and will be of mill construction. It is worth noting that this is the first building in Winnipeg built on this principle. A prominent feature is to be the main doorway. It is to be arched, finished in carved stone, with oak door with grill work in upper panels. The lower stories of building will be constructed of rock face natural stone, the upper part in stone and white brick. The architect under whose direction the work is being executed is Mr. J. Cadham.

There are many conditions with which the builder in this district has to contend which are not met with elsewhere. One of these has been very apparent recently owing, in part, to the recent heavy fall of rain. On one of the main thoroughfares some excavations had been made ready for the foundations of a large block, but owing to some delay were not immediately proceeded with ; in the meantime the heavy rain had come, with the result that although the perpendicular sides were considered to be sufficiently shored, the whole of the sidewalk for some distance fell in, the soil below having shrunk owing to its peculiar nature, the heavy weight of the cement sidewalk bulged out the under soil until the timber supports below were forced out. This occurrence is attributed to the peculiar nature of the soil, which carries some distance below the surface a layer of "shale," very much of the nature of quick sand, and which, when disturbed, is a great source of danger. Builders often find it necessary to provide against this peculiarity by supporting the end wall of a range of buildings during erection until the building is well pinned together and sufficiently strong to carry its own weight.

At another point in the city a similar situation exists, but of a more serious nature, involving danger to a neighboring building. In this instance the Contractor had made his excavations ready for his foundations right up to the adjoining property. During the night the whole of the wall adjoining, and which to all appearance is a most substantial one, sank bodily several inches, without previous warning or showing any sign of cracking (except at the point of parting.) The cause of this particular accident has yet to be decided, but it will, in all probability, be traced to the above mentioned cause. The subsidence caused quite a panic at the time and the building inspector, Mr. Rogers, was hastily summoned. He at once set to work to protect the building, which was done by strapping through and through at top and jacking up the wall above the foundations. By this means the building has been raised to almost its former position.

The Winnipeg Builders' Exchange held their monthly meeting on June 7th in the offices of the Association. There was a good attendance of members, and much discussion on important matters. It was reported by the Committee that the Architects had been interviewed and were almost unanimous in acceeding to the request to deposit a copy of plans and specifications of prospective contracts at the office of the Exchange from time to time. The Architects had also approved of the "Uniform Contract" which had been submitted to them. It was also resolved to draft a uniform form of tender for use by the members. and have same submitted to the next meeting. During the meeting the secretary, Mr. W. W. Daly, addressed the members on the subject of the "Aims and Purposes of the Exchange." The address was received with great enthusiasm and a vote of thanks passed to the secretary. It is proposed to have the address printed.

WAREHOUSE CONSTRUCTION.

If a furniture storage house, a prominent situation on an important street and if possible, where the passing thousands see it, is of great advantage. This need not be in an expensive neighborhood or a retail block and may even be surrounded by cheap stores or residences. But if it is a noticeable building and has substantial signs and is on a car line, or where it is sure to be seen by a great many of your city's inhabitants, you will get ten times as many personal and telephone calls for rates and information as if on a back street, and can save considerable in advertising. It is well, also, if it can be on a business street in the edge of the business district, so that a good portion of the ground floor front can be used as a sales room for second hand and new furniture, or rented out as stores to tenants. But in this connection it is essential to consider whether the patronage of the great middle and poorer classes is expected, or mainly that of the well-to-do and "tony" set, because the latter are repelled and very reluctant to trust their goods under such circumstances, and willingly pay higher rates where the building is held strictly for storage purposes, especially if it says "fire proof," and has formidable iron gates and its front is built with castillated walls and other evidences of physical and financial solidity.

If a heavy merchandise or "dry" storage house, it is not important that it be in a prominent location, or even have a street facing, but it is, of course, desirable that it have a good railroad side track and easy delivery platforms to customer's teams, and the nearer it is to the centre of the wholesale district, the better. If the city is on navigable water, it ought to have both dock and railroad platforms—but it is probably more desirable that the building be within reasonably easy reach of the wholesale customers and freight shipping depots than that it have either of these very desirable conveniences, because goods usually go out in smaller quantities than they come in and by expensive horse and truck, so that a saving of time when goods are wanted, and a long haul, is an economy to your customers which they will appreciate. This does not apply to an exclusive transfer and forwarding business where the warehouse can be located at the transfer yards in the outskirts of town so long as ample shipping facilities and equal freight rates are had. I venture to suggest if it will not be better, if on railway trackage, that it be on some large railway system not already well supplied with storage warehouses in your city, especially if such a line has equal facilities and advantages on in and out freight—because of the help you will naturally secure from the railroad directing their enquiring customers to you.

It is also wise, before announcing a settlement upon a location, to consult the officials of, say the railway company on whose line you intend building, learning what obstacles, if any, there may be in the way of good switching service to the location—and you can also sometimes secure a specially advantageous switching rate from them, which they would not make you later after you had started to build. You are also more apt to learn from them than from any other source what rearranging or large changes in tracks or railroad facilities which may effect you, are planned for the distant future.

The same general observations apply as to the locating of a cold storage warehouse. Where a considerable share of its merchandise will come from and go to the local wholesale produce commission merchants by team, it is obvious that to be within convenient reach of them is most desirable.

It would seem preferable, in all cities except of the largest class, that a storage plant embrace several lines of warehousing, as say, dry merchandise, U.S. bonded and cold storage, and I would also favor including household goods, for to some extent the advertising of one will help the other, and it is certain it will involve but a small increase in crew to perform the labor in several branches, under competent management. But these branches of storage should not be conducted in the same building, unless it be the dry storage and U.S. bonded, and then it is essential to comply with the government regulations requiring an independent street frontage with separate doors and a tight partition with locked doors separating the bonded from the free storage space.

For a practical and economical plant, I suggest an ideal arrangement would be two non-fire-proof sections, divided by a fire-proof section, and I would, in view of the only slight additional cost, even carry it as far as to make fire-proof the unloading platforms opposite the fire-proof section, and any other communicating parts. If cold storage in connection with heavy merchandise storage is to be conducted, and if it is desired to store fish, oranges, lemons and other maladorous or penetrating commodities, as well as sensitive butter and eggs, it would be well to place the merchandise section between two separate and (except for the refrigerating piping, etc.,) entirely independent cold houses. This will involve some additional cost of insulation but will avoid chance of damage by communication o the odors, and of course the division of the risks by heavy fire walls will always work to your advantage in fire insurance rate.

In a climate where a fairly cheap ice supply can be secured in mid-winter, it would seem highly economical to build your cold storage house with continuous, indirect circulation air chamber between the main insulation and the wall, through which to circulate the air from a stored body of ice, as is in successful operation now in several houses. This is found to secure at the very small expense of a fan power and without labor or handling of the ice, a temperature of about 40 degrees near the outside of the insulation, so the ammonia or ice-salt-and-chloride-of-calcium or anhidrous dioxid, or whatever system is used for the sharper refrigerating, will only have to reduce from a uniform temperature of about 40 degrees F.

There may be another important good served by this indirect circulation in the outer space of the insulation in that it would catch up any leaks of warm air from outside and carry them along back to the ice body, but in fact under reasonably still weather conditions there would probably be, if anything, a slight surplus pressure in this circulating air chamber, so that any openings through the wall would simply serve as slight out-leaks of the inexpensive ice chamber air.

In connection with an ideal arrangement, it would seem an advantage if the railway track can be at an elevation, and come at the back of the buildings on a level with the second or third floor of our, say six-story building. This would save something in elevator

service, would reduce annoyance from stragglers and danger of theft, and allow team platform and delivery access under track at the lower floor level somewhat protected from the weather.

It is unquestionably good practice where the warehouse is not large enough to require a separate delivery and receiving foreman, to have these two departments close together.

Among several reasons why it is wise to have floor strength uniform on each floor of a warehouse, is the fact that the city building inspector always accredits a floor with only the strength per square foot of its weakest part after dividing by their usually high factor of safety.

It is regarded wise to have all floors slightly inclined towards the elevator shaft so that in case of a flood of water from fire engine, or an unroofing storm, it will drain off promptly. This incline need not be enough to be noticeable in handling goods. Sometimes the ground level floor is perceptibly inclined from the rear railway track end to the front truck delivery end, to aid the movements of trucks in the easy transfer of goods directly through the house.

The number, kind and general disposition of the windows in a storage warehouse have generally not received full attention in even the newer buildings erected for this purpose. Very few windows and those placed where they can throw their light down the aisle, and high so there will be the least obstruction possible, would certainly seem good judgment. Every window exposure is a serious outside fire-hazard from an insurance standpoint, bleaches the goods which happen to be opposite it, besides heating the house in summer and cooling it in winter, and presents a vulnerable spot for storm damage and for burglars. While some daylight for handling goods is needed and is much better than to rely on lanterns, and some airing may occasionally be necessary, and direct outside access to each floor and section is demanded by the fire department—it is possible by one window at each end of each main aisle to secure all these with comparatively small [illegible].

[illegible] glass is the ordinary ¼-inch wire-glass, the [illegible] of fire from without is less and if the wire-glass [illegible] n iron or all sheet metal shod sashes, frame and [illegible] the danger from outside is reduced to a minimum, and you secure the main protection of an iron fire shutter without its disadvantages. Much help in diffusing light is obtained by having the brick walls at window openings tapered off at 45 degrees on sides and top both inside and out, so that the light can reach each side as well as straight in front of the window. Luxfer Prism glass in aisle windows is as fire resisting as wire glass, and will secure fair light for a great depth through a room, and will prove a desirable feature.

Probably the best arrangement of floors for a non-fireproof building for general merchandise storage, is what has been called the highest type of mill construction, in which only postline girders are used, the floor planking reaching in a continuous line from girder to girder and by virtue of its own stiffness holding the load. The floor planks are somewhat thicker, usually four to six inches, are tongue-and-groove matched together and are of double length reaching over two sections of floor so as to avail of the cantilever effect of the bending tendency.

The writer has devised a system of trussing by inexpensive sheet metal the entire under side of such floors, which has been highly approved by some authorities and which is designed to increase the floor stiffness sufficiently to avoid the need of extra thickness, while it also adds to the slow burning quality of the building.

The number and location of the power elevators is a subject upon which there is divergence of opinion, and many of the best architects and builders strongly advocate grouping the elevators at least two in a stack, but there seems to the writer to be formidable reasons why it would be better policy to scatter them. It is recognized from insurance reasons nowadays almost essential to enclose the elevator shaft in brick, and where the same general class of storage is conducted on both sides of a party wall there is probably no reason why the elevator stack cannot be set in the wall, half in each side, thus serving both sections. We have recently constructed a very satisfactory dry storage house in the writer's city in which, at his suggestion, the elevator was located in the aisle at the back or railway track end. This allows of directly trucking on of goods from the cars for upper or lower stories and is found to save almost a carload of the valuable room on each of the floors except the track level floor. On the latter, of course, a separate side door has to be provided for passing through goods intended for storage or handling on that floor.

The wood now largely preferred for its strength and evenness of grain is Washington fir, which can be had for posts in almost any size timbers. It has within a few years been determined that a large augur hole bored through the centre length of each post and heavy timber will result in the seasoning cracks running to the center, leaving the outside solid, and of course, adding to the sightliness and strength of the structure.

It is often dangerous to cover with oil paint stringers and other construction timbers, because of the tendency to dry-rot when the surface is thus sealed, and it has been a common experience in some parts of the country for the building inspector to make the starling discovery that some main supporting stringers so painted consisted of an inch shell with the entire centre of dry punk. This condition never results, even where timbers were somewhat green when erected, if they are left unpainted, but where a more finished appearance is desired, a coating of any of the several cold-water fireproof paints or of white-wash, will form a good surface, and at the same time add in a probably valuable degree to the slow burning qualities of your building. In this connection it is worth mentioning that these coatings are now easily applied by any large painter, with the use of a spray machine and at an expense for labor of less than one-third what it would be if done in the old way by hand and brush.

As an additional fire protection, it is wise to provide sand-fire doors covered with tinned iron and closing automatically in case of fire by a fusible plug and retaining cord at all wall and elevator openings.

Eighteen sculptors in Europe and America are said to have expressed their intention to compete for the designing of the proposed memorial shaft of the South African Memorial Association.

The Board of the United States General Appraisers are said to have just ruled, in effect, that architects are "artists," and that architectural drawings, for tariff purposes, are dutiable in the same class with "paintings in oil and water colors, pastelz, pen and ink drawings and statuary, not specially provided for."

THE MEANING OF ART.

The word "art," and its adjective, "artistic," are greatly misused, says a writer in Building News. The ordinary Englishman regards art as some sort of accomplishment or process of decoration by which an object, no matter what it is, can be made pleasing or artistic; he thinks it can be applied like a coat of paint or a wallpaper, to any portion of a building or piece of furniture, or anything else, after it is constructed or made, and that the man who can do this is one who can draw pleasing or pretty designs, and can apply his "art" to anything from a fire-grate or coal-scuttle to the decoration of a room. Such is the view of the modern Philistine in art matters. The true meaning of art or architecture is construction dominated by an idea of order or purpose, and the man who designs a building or a fitting or piece of furniture for a given purpose is the real artist. He must commence to exercise his art at the very beginning—to shape his stone, wood or iron according to the use it has to fulfil, not to leave it for others to give it an extraneous expression, or by adding to it a few ornaments. If art, as Morriss says, is "man's expression of joy in his labor," craftsmanship must be actuated by it. Art and craftsmanship must stand or fall together, and it should be our aim to bring them once more together.

INVENTOR OF PORTLAND CEMENT.

Very few of the thousands who make use of Portland cement, and still fewer of the millions who benefit by its use, have ever head of Joseph Aspdin, the inventor of a material to which we owe many of the great engineering works of the present day. Aspdin was a Leeds brickmaker who, in 1813, conceived the idea of combining chalk with clay from the river bed, drying and calcining the mixture at a high temperature. In 1824 he patented the invention, and soon afterwards opened a small cement manufactory at Wakefield, and a few years later his son, William Aspdin, established a cement factory near Chatham. The peculiar advantages of the new material were soon recognized by engineers, and Brunel, as the Builder points out, was one of the first to make use of it, employing Aspdin's patent cement in the construction of the Thames Tunnel. It is true that rival claimants have arisen to claim the honor of inventing Portland cement, but it is now recognized by competent authorities, not only in England, but also in France, Germany and Italy, that the palm belongs by right to Joseph Aspdin. The suggestion is now made that a public memorial should be rised in Leeds to the inventor of Portland cement. The movement should meet with support in America, where the Portland cement industry has shown more rapid progress and has reached greater proportions than anywhere else in the world.

The Royal Institute of British Architects have protested against the new drainage by-laws introduced by the London County Council which require, in duplicate, complete plans, sections and elevations of every floor of a building to be submitted not only in the case of new systems of drainage but any alteration of an existing system.

Mr. G. Gilbert Scott recently read a paper on his design for Liverpool Cathedral before the Liverpool Architectural Society, in the course of which he said he had dreams of quite another style; but his ideas had not had time to mature. Gothic could not go much further: it was nearly at the end of its tether, and before long would die out as completely as it did in the sixteenth century.

BY THE WAY.

A house in Nevada is said to have been constructed entirely of beer bottles and cement. I can easily conceive of many houses that might have been built but for the abundance of beer bottles.

× × ×

According to tests recently made at Kew and Chelsea by Prof. Oliver, the atmosphere of London after a dense fog contains a deposit of acids and carbon exceeding 6 tons to the square mile.

× × ×

Prof. Goldwin Smith asserts that the house in which he resides, known as "The Grange," was built in the year 1817 at a cost of only $4,000. The house is commodious in size and substantially built, in the English manor-house style. The interior is finished in oak and walnut, this material being used in abundance for wall panelling, etc. His old house serves as a concrete illustration of the tremendous advance which has taken place in the cost of building in Toronto during the last seventy-five years.

× × ×

The expected contradiction has come to the announcement so widely published in the architectural papers of the alleged discovery that by the use of 2 per cent. of tannin in the moist clay the ancients made bricks which were 350 per cent. stronger than those made by our modern methods. In recent tests by Sege briquettes composed of 2 parts sand and 1 part raw clay broke when fresh at 0.56 kilogrammes per sq. centimetre, and after having been stored for three weeks, at 0.92; briquettes containing tannin broke at 1.01, those containing starch at 0.75 and those containing dextrin at 1.71 kilogrammes per sq. cm.

× × ×

Dr. Warner, of London, is given as authority for the statement that small heads and physical deterioration are caused by living in high buildings. This conclusion is said to have been reached after an examination of 100,000 children. Unfortunately Dr. Warner has no intelligent reasons to advance why people's heads should grow smaller the farther skyward they go. Presumptuous as it may seem, I am disposed to doubt the accuracy of Dr. Warner's theory, so far, at least, as this side of the water is concerned. I have known persons whose heads not only did not grow smaller but actually got "swelled" as the result of living and doing business in a modern sky-scraper.

× × ×

At St. Augustine's Church, Elkridge Landing, a suburb of Baltimore, a mortar-eating bug is reported to have been discovered by the parish priest, Rev. Francis P. Doory. The priest noticed that the brickwork and marble facing, back of the altar, were falling to pieces and that the entire altar seemed to be in danger of collapse. He promply called in some workmen, who discovered that the cement binding the marble to the brick had been eaten away. With the removal of the first slab a multitude of cobite bugs were disclosed, hundreds of which were captured. Placed in a pail with several pounds of the dried mortar the bugs proceeded to devour what appeared to be their natural food, thus definitely establishing their destructive powers. These bugs are said to be a new thing to the naturalist, and scientific investigation will be awaited with interest.

THE ARCHITECT BEFORE THE LAW.*

II.

By S. G. Archibald, Advocate.

Mr. President and Gentlemen:—

To-night I propose dealing with the questions of servitudes in general, and more especially of mitoyen walls, and with the question of risk, i.e., at whose risk is the building before acceptance by the proprietor? Upon whom does the loss fall if the building be destroyed by force majeure before delivery? Are the architect and builder deprived of their right to recover the value of the work already done?

The question of servitudes is perhaps not one which will appear so immediately practical nor interesting as that of the 10 year guarantee; at the same time it is one with which architects ought to have a good general acquaintance. As a matter of fact, I presume that in the daily practice of your profession you have acquired a sufficiently practical knowledge of the question. I propose to put into systematic form the general ideas upon the subject which form the basis of our law, and to cite cases from our jurisprudence, which have given practical application to these theories.

In the first place, what is a servtiude? A real servitude is a charge imposed upon one property for the benefit of another belonging to a different proprietor. From one point of view then a servitude implies a right, from another a charge. The property burdened with the servitude is called the serviant tenement; that which enjoys the right is called the dominant tenement.

While a servitude resembles an obligation in almost every particular, it differs from it in this respect, that it has to do with properties and not with individuals. The right and the charge pass with the properties. The individual may be discharged from an obligation upon the payment of a certain sum of money, but the proprietor of the serviant tenement cannot liberate himself from the servitude by offering to pay its value in money. It is in reality a sort of dismemberment of property so far as the serviant tenement is concerned, and, so far as the dominant tenement is concerned it is a sort of quality in the property which forms part of it, and which the owner cannot be obliged to sell. Thus, for example, if there is a right of way in favour of my property across my neighbour's field, he cannot force me to forego my right by offering to indemnify me. If, however, my right of way has become, owing to cumstances, particularly burdensome, he can offer me another right of way over a different part of his property, and I will be obliged to accept it if the proposition is reasonable, and this will be a matter for the courts to decide.

It, of course, goes without saying, that the proprietor of the dominant tenement may sell or otherwise give up the servitude which exists in favor of his property, and, in such case, neither property will be affected with the servitude for the future.

No servitude can be acquired except by title, as the French maxim has it, "nulle servitude sans titre." It is not possible, therefore, to prescribe a right of way even by making use of i for 30 years. There must be some definite title establishing the right invoked.

There are 3 classes of servitudes: (1). Those derived from the natural situation of the properties called natural servitudes. Such, for example, as the obligation of a lower land to receive the natural fall of water from land above it.

(2). Servitudes established by the law, or legal servitudes. Such, for example, as the obligation to contribute to the erection of a mitoyen wall.

(3). Servitudes established by the act of man.

The distinction between the first two is only a distinction of words, because both classes are servitudes sanctioned by the law, and which exist independently of the will of the individual proprietor. Servitudes are really, therefore, those imposed by law and those which the individual chooses to place upon his property, and, as a matter of fact, these latter are the only ones which can strictly be called **servitudes**, because they are the only ones which really derogate from the state of **legal** liberty in which all property is a servitude, being a modification of property can only fairly be applied to those modifications made in respect of a particular property by the act of man. Our code, however, makes the division of servitudes into the classes just mentioned, and we must adhere to that division.

Under the head of natural servitudes the code treats of the obligation to receive waters from a higher level, of boundaries, and of fences. While we have no time to take up these questions in detail, it may be remarked 'en passant' that the proprietor of the higher land has no right to aggravate the servitude in any way. Thus, for example, the Privy Council in the case of Frechette v La Compagnie Manufacturer de St. Hyacinthe (9 App. Cas. 170) decided that the proprietor of land occupying a higher level who had constructed works whose effect was to accumulate the water and to deepen the channel by which the water passed to the neighbouring land, had aggravated the servitude. Numerous other cases might also be cited forbidding any such aggravation. With respect to 'bomage,' this may be demanded at any time, and the right to make such demand is imprescribable. The cost of making a bomage is borne equally by the parties, with the exception that the cost of measuring is borne proportionately. Needless to remark, if legal contestation arise in fixing the boundary, the costs are borne by the losing party.

While the right to demand a bomage is imprescribable, it cannot be exercised arbitrarily, and the law in Art. 941 C. C. P. lays down the only cases in which it may be demanded. Where a legal bomage has been demanded, the surveyor makes his report, and the Court then, by its judgment, establishes what the line between the properties shall be. The parties have a right to be heard upon the surveyor's report, and no judgment, fixing boundaries, without a surveyor's report, and, upon which the parties have had a chance to be heard, is sound. Such is the jurisprudence of our courts.

First and most important among the legal servitudes is the obligation to contribute to the erection of mitoyen walls. In general we mean by mitoyenneté the co-ownership in indivision of an intermediate object serving as a boundary and as a separation between two contiguous properties, and especially a mitoyen wall is one which belongs in common undivided ownership to two owners whose properties it separates. Each owner has thus an equal and joint right in every part of the wall.

Mitoyenneté constitutes a community of property quite different in many respects from the ordinary community of property. It differs as to proof of it, as to its duration, as to its effects, and as to the manner of its acquisition.

As to proof, Arts 510, 511, C.C. give us a system specially adapted to it. They are as follows: (510) "Both in town and country, walls serving for separation between buildings up to the required heights, or between yards and gardens, and also between enclosed fields, are presumed to be common, if there be no title, mark, or other legal proof to the contrary." (511). "It a mark that a wall is not common when its summit is straight and plumb with the facing on one side, and on the other exhibits an inclined plane; and also when one side only has a coping, or mouldings, or corbels of stone, placed there in building the wall. In such cases the wall is deemed to belong exclusively to the proprietor on whose side are the eaves or the corbels and mouldings.

As to its duration. The ordinary rule regarding property is that no one can be compelled to remain in a state of undivided ownership. He can always put an end to the indivision by demanding a partition. In the case of a mitoyen wall neither party can demand a partition unless his neighbor consent. There is, then, only one means of ceasing to be undivided owner and that is the abandonment of the common wall.

Ordinarily, when two persons are owners in common of a certain thing neither party can make any change in it without the consent of the other. Not so, however, with respect to the mitoyen wall. Each party can can use it in such a way as to benefit himself, on condition only that he does not injure his neighbor in any particular. Thus, for example, he may build against the wall, he may place beams in it to within 4 inches of its thickness, and he may raise it, if such a proceeding is useful to him.

As to its acquisition. As a general rule no one can be compelled to sell his property save for purposes of public utility. This rule, however, suffers exception in the case of a wall separating two contiguous properties. He who has not contributed to its erection may acquire the common ownership of it by paying an indemnity composed of (1) half of the value of the land on which the wall is built, and half of the actual value of the wall or part of the wall of which the mitoyenneté is acquired. It is to be remarked that this right only exists in favor of the proprietor of the land immediately joining the wall, so that if A has left ever so small a strip of land between his wall and B's

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property, B cannot acquire the mitoyenneté of the wall. This at least, is the opinion of the great majority of the French authors and of the Cour de Cassation in France, although there is a good deal to be said in favor of the contrary view. De minimis non curat lex—and if the strip be very small it might fairly be agreed that it should not be taken into consideration at all.

It goes without saying that the mitoyenneté in the wall must first be acquired before the neighbor acquiring it makes any construction upon it. Thus in a case of Joyce vs. Hart, decided in the Supreme Court (I. S. C. R. P. 371), the builder was condemned to demolish his construction built on a wall of which the mitoyenneté had not first been acquired. And in a case of Bruchesi vs. Desjardins (R.J.O. 2 C.S. page 436), it was decided that a neighbor can only acquire the mitoyenneté of a wall by conforming to Art. 518 C. C. which says, "Every owner of property adjoining a wall has the privilege of making it common in whole or in part by paying to the proprietor of the wall half the value of the part he wishes to render common, and half the value of the ground on which such wall is built," and when the wall in question is not straight and not proper to serve as a mitoyen wall the neighbor cannot without the consent of the owner or legal procedure take possession of the wall and demolish it, with a view to its construction as a mitoyen wall.

The question is sometimes asked as to whether or not a party who is building a wall which is not mitoyen can force his neighbor to allow him to take 9 inches of ground on his side of the line. There is no doubt that he can, but of course the neighbor will then have the right to acquire mitoyenneté in the wall on paying half of its actual value, and will have nothing to pay for land. It would always be prudent to notify the neighbor that you were taking advantage of your right to the 9 inches in order that he might oversee the work, if he so desired. A very interesting point has been raised as to whether one neighbor can take more than 9 inches of the other's ground when such is necessary for a footing course. The Court of Appeals in Keough and Lolin and in Rafter vs. Burland have seemed to deny that right. The Superior Court, however, in the last case upon the subject (Roy vs. Strubbe) has held that he could. This case has gone to appeal and is not yet decided. The reasoning employed in favor of the proposition seems to be irrefutable, but the points must still be considered as unsettled until the Court of Appeals shall have passed upon the last case referred to.

Walls separating two buildings, or two yards, or two gardens or a yard and a garden are presumed to be mitoyen and our courts have held (McKenzie vs. Têtu 12 L.C.R. 257) that mitoyenneté is a legal presumption which throws the burden of proof upon the person objecting to it, and the objection can only be maintained by a title or by certain marks or by legal proof. Article 511 C.C. already cited, indicates what these marks are. Of course these marks must have been placed in the wall at time of its construction or if placed later the consent of the neighbor must be proved.

Legal proof of the non-mitoyenneté may always be made, the only question that then arises is, what is legal proof? Apart from documentary proof our law allows verbal evidence to be made in certain specified cases only, and oral testimony will not be admitted to show the consent of a neighbor to the erection or placing of a mitoyen wall (Leduc vs. McShane, 29, L.C.J., p. 56). Nor will it be admitted to show the necessity of the demolition of a wall, whichhad been torn down without its insuffiency having been determined upon a hearing of both parties. This point was recently decided in a case of Tait vs. Lamothe in the Court of Queen's Bench, and shows the necessity of never touching a mitoyen wall without proceeding regularly and in order.

Those who own a mitoyen wall are charged with its repair and reconstruction, and only by abandoning all interest in the wall can they rid themselves of this obligation. If, however, the co-proprietor, wishing to abandon, have placed a building against the mitoyen wall he can only abandon by tearing down that part of his building which rests upon the mitoyen wall. Certain authors are of opinion that in order to be rid of the obligation to repair and reconstruct a fence wall it would be necessary to abandon the whole of the property in question-because this obligation is a legal servitude upon the property, and only by giving up all the property can one get rid of it.

The co-proprietor of a mitoyen wall is authorized to execute certain works and is forbidden to execute others.

1. He may build against the common wall.
2. Place beams in it to within 4 inches of its thickness.
3. Raise the common wall, upon paying an indemnity of 1/6 of the value of the superstructure.

In case the wall is not in a condition to support the superstructure, then he who wishes to raise it may demolish it and rebuild at his own cost, and if any additional thickness is required he must take the land on his own side. In this case, he will, of course, have no indemnity to pay for the superstructure. On the other hand the neighbor cannot complain of the inconvenience and sometimes serious loss and damage to which he may be put. Thus, for example, A may keep a restaurant, B his neighbor, wishes to raise the common wall, and for that purpose take it down and rebuild it more solidly. A cannot complain even though his restaurant is almost deserted on account of the dust, dirt and noise caused by B, so long as B proceeds with diligence and does what he reasonably can to mitigate the nuisance. This doctrine was laid down by the Court of Queen's Bench in a case of Lyman vs. Peck. (6 L.C.J., p. 214).

Art 517 C.C. provides for the acquisition of the joint ownership in the superstructure by paying half its cost.

Art 518 C.C. provides that a proprietor who wishes to acquire the joint ownership of the whole wall only pays half its value. He is thus in a better position than the man who was already joint owner of part of the wall. Most of the French authors, however, consider that when the superstructure is already old mitoyenneté in it may be acquired by paying half its value.

It has sometimes been debated whether or not Art. 514 and 515 gave a right which could be exercised upon simple notice to the neighbour or whether these cases did not fall into the general rule established by Art. 519, which says: "One neighbour cannot make any recess in the body of a common wall, nor can he apply or rest any work there without the consent of the other, or on his refusal, without having caused to be settled by experts the necessary means to prevent the new work from being injurious to the rights of the other."

There does not seem to me to be any room to doubt that Art. 519 should be followed. The neighbour's consent must be obtained, or experts must be called in to settle the necessary means to prevent the new work from being injurious to the rights of the other.

In the case of Stephens v Walker 6 L. N. p. 286, the court of appeals condemned a proprietor to restore to its former state a wall which he had partly pierced without the consent of the neighbour, and without following the procedure indicated in our article.

On the other hand neither of the neighbours can make any opening in the common wall of any sort whatever, without the consent of the other, and this consent is absolutely necessary, and no judicial decree can be obtained dispensing with it.

Articles 521 et Segg. deal with the question of different stories of a house, common ditches, hedges, trees growing on or near the line.

Article 532 deals with the distance or intermediate works required for certain structures.

Articles 533 et Segg. deal with the question of view on the property of a neighbour. One neighbour cannot, without the consent of the other, make in any common wall any window or opening whatever, even if it be made with fixed glass.

Article 534 provides what windows may be placed in a wall, not common, immediately adjoining the neighbour's property. In the case of Cadorette vs. St. Germain (R. J. Q. 4 c.s. 136), our courts held that windows, placed in a wall that was not common, immediately adjoining a neighbour's property, had to be furnished with window sashes (Scelles), and that it was not sufficient that they were simply nailed down. Direct views are only permitted at left from the line, while oblique views must be placed at 2 ft. This distance is measured from the outside surface of the wall, and if there is a balcony, from its outside line.

Oblique views are those obtained by openings in a wall which is perpendicular, or nearly so, to the line separating the two properties. While the question of view on a neighbour's property is a very simple one in theory, at the same time questions of a good deal of difficulty have presented themselves in practice. If, for example, there exist a mitoyen wall between the building which has windows overlooking the neighbour's property, what is the point from which the required distance should be calculated? Evidently it should be from the centre of the wall, but if the wall should not be mitoyen, the distance will be calculated from its outside edge. But what, if later on, the neighbour, exercising his right, acquires the common ownership in the wall? Must the proprietor then close his windows

which would then be within the prohibited distances? The answer would be no. A legal act cannot become illegal by reason of a posterior fact.

While the law speaks of adjoining properties, it does not mean to restrict the sense to properties immediately touching each other; and so if there were a narrow strip of ground less than 6 ft. wide, over which there was a right of view, this would not prevent the proprietor of the following piece of property from complaining of views placed at less than 6 ft. from his land. Logically the same rule would apply where two properties were separated by a public road less than 6 ft. wide. All of the authors, however, make an exception of this case.

In a case of Hotte vs. Fauteux R. J. Q. 5 B. R. 38, the question came up as to whether views could be established in a common passage when each of the neighbours had furnished half of the land required for such passage. In this particular instance the passage was 8 ft. wide, and each neighbour had furnished a strip of 4 ft. Under these circumstances the Court of Appeals decided that a servitude of right of way was created, and not a right of co-ownership, and that each neighbour remained owner of the strip of land which he had furnished. The openings being thus within four feet of the neighbour's property were ordered to be suppressed.

Again, supposing for example that the proprietor have placed in the wall, which is not common, such openings as the law allows him to place, and that later on his neighbour acquires the mitoyenneté of it, can he be forced to close these openings? The authors are divided upon the question, but it would seem fairer to consider that the neighbour acquiring common ownership should take the wall in the condition in which he finds it.

Servitudes established by the act of man.

These servitudes are divided into three classes:—

1. Urban and rural.

2. continuous and discontinuous.

3. Apparent and non-apparent.

Urban servitudes are those established for the use of buildings whereever situated. Rural servitudes are those established for the use of land.

Continuous servitudes are those which can be exercised without the actual intervention of man, such as rights of view, etc. Discontinuous servitudes are those which require the actual intervention of man for their exercise, such as rights of way, etc. Apparent servitudes are those which are manifest by external sign, such, for instance, as a right of way made apparent by a gateway.

In order that a servitude which is discontinuous and non-apparent shall be binding upon subsequent owners of the property, it must be registered in the registry office of the division in which the property is situated.

There is a good deal of jurisprudence upon this point inas much as the courts are called upon to appreciate questions of fact, thus for example it has been held that a right of way is rendered apparent by the existence of a gate in the fence which separated the dominant and servient tenements and consequently the registration of such right was not necessary. On the other hand, it has also been decided that a pipe, placed in the earth for conducting water, when it is covered with earth and especially when the earth itself is covered with snow, being non-apparent the servitude which might exist in respect of it is equally, at that moment non apparent. These questions, however, are matters of fact which must be left to the appreciation of the court.

Servitudes are established by express title or by what is called "Destination de père de famille." As we have seen, no servitude can be acquired without a title and the principle that the acquisition of a servitude cannot have possession for its basis has been affirmed in the Supreme Court as well as in our own Provincial Courts. (Jones vs. Fisher, 17 Sp. C.R 513.)

Now what is meant by "Destination de pere de famille"? It may be defined thus, the disposition and arrangement that a proprietor makes and by reason of which one of the properties or a part of one property, is destined for the service of the other. So for example, if there were two houses belonging to the same proprietor, the drainage from one of which passed over the land occupied by the other, and later on these two houses fell into the hands of different heirs, there would be a servitude established in favor of one of these properties over the other to allow such drainage to pass off in the manner in which it had done when they both belonged to the same proprietor.

Two things then are necessary, possession of two properties by one proprietor, arrangement during possession and by that proprietor, which would constitute a servitude if the property belonged to two different owners. According to the old custom this "destination de pere de famille" is equivalent to title."

Generally speaking the establishment of a servitude implies the concession of all that is necessary to put it to practical use. Thus for example a servitude of drawing water would carry with it an implied right of way. So also the owner of the dominant tenement would have the right to make, even upon the property of the servient tenement, all works necessary for its exercise and preservation, while on the other hand the proprietor of the servient tenement must do nothing which might tend to diminish the use of the servitude or render it more inconvenient; the owner of the dominant tenement must on his part do nothing which would aggravate it.

The question of diminution or aggravation of a servitude is one of fact to be determined by the courts.

Servitudes become extinct by confusion, that is to say, when one and the same person becomes owner of both the dominant and servient tenements. It is evident that a man cannot have a servitude over his own property.

Non usage for 30 years will also bring about the extinction of the servitude. In respect of discontinuous servitudes having need for their exercise of the actual intervention of man, so soon as this intervention ceases there is non usage, so that the 30 years would begin to run from this last exercise of the servitude.

As to continuous servitudes whose existence is independent of the intervention of man inaction could not constitute non usage. There must be an act contrary to the exercise of the servitude, that is to say, which would place the servient tenement in a condition of liberty. For example the servitude of right of view would not be interrupted by the fact that you kept your windows closed for it consists in the existence of these very windows. But if, on the other hand, you filled in your windows or if your neighbor built a wall which completely obstructed the view, then there would be non usage and consequently extinction of the servitude if you allowed this state of affairs to continue for 30 years without action on your part.

RISK.

The second part of our subject to-night deals with "Risk". It is hardly necessary for me to point out how important this question is from a practical point of view. For example in case the thing be destroyed before acceptance by the master, upon whom does the loss fall, or if the master become insolvent before completion of the work, in what position is his estate, or if the master were married while a building destined for him was in course of erection, does such building fall into the community or not?

The articles of our code which deal with the subject are 1683-4-5-6-7. The general maxim of law which must govern all questions under these articles is this "Res perit domino", that is to say a thing perishes for the owner. Whoever was the owner of any particular thing at the time of its destruction must suffer its loss. This rule, of course, does not deprive the owner of his recourse against him who caused the loss, if fault is attributable to him. Now article 1684 says:

(1684.) "If the workman furnish the materials, and the work is to be perfected and delivered as a whole, at a fixed price, the loss of the thing, in any manner whatsoever, before delivery, falls upon himself, unless the loss is caused by the fault of the owner or he is in default of receiving the thing."

This is practically a sale of the thing subject to verification by the owner It is a sale of a thing to be made—consequently the sale of a future thing and so a conditional sale. The sale is made under the condition that the object which will be presented by the workman will be properly made. This condition is fulfilled when the thing is verified and accepted by the master. From this moment the risk of loss falls upon the master and not upon the workman. While the code speaks of "Delivery" the authors are agreed that verification and acceptation are all that is necessary and that after that, the workman holds the thing for the account of the master.

If the master be in default to receive it the risk also falls on him, as he has prevented the happening of the condition, because article 1084 C. C. says that a conditional obligation becomes absolute, when the party bound under the condition prevents the fulfillment of it.

Articles 1685-1686 say:—

(1685.) "If the workman furnish only labor and skill, the loss of the thing before delivery does not fall upon him unless it is caused by his fault."

(1686.) "In the case of the last preceding article, if the work is to be perfected and delivered as a whole and the thing perish before the work has been received, and without the owner being in default of receiving it, the workman cannot claim his wages, although he be without fault; unless the thing has perished by reason of defect in the materials, or by the fault of the owner.

When therefore the master furnishes the materials, then cases arise. (1) The thing perishes by the fault of the workman—he will owe its value to the master and may be held in damages. (2) The things perishes by fortuitous event—the master loses his materials and the workman loses his work. (3) The thing perishes through a defect in material, the master loses his material, but the workman has a right to be paid the price of his work. We must, however, make an exception to this rule, of the case

where the workman by reason of his profession should have known of the defect in the material and should have notified the proprietor. Such for example would be the case of a builder employing defective timber where he should have known better.

Could the workman claim the price of his work done at the moment of the loss of the thing? Yes, if the accident happened after the work was accepted by the master. No, if the loss occured before acceptance. Those who support this doctrine say that the workman has only a right to be paid in so far as the work was well done and that since the thing has perished, the verification of this fact has become impossible. It is urged also that this solution is only an application of the maxim "Res perit domino", that the workman is still owner of his work until it has been accepted. He has not only promised his work, but he has promised to make it so as to be received, that is to say to deliver it to the master. Until such time he is owner of it and consequently loses it, if the thing perish.

This is the position taken by the commentators of the Code Napoleon. The commissioners who drew up our code, after careful thought, adopted textually the articles of the Code Napoleon. At the same time they have not indicated them as being new law. Now there is no possible doubt that the Roman Law and Pothier did not adopt such a solution. The Roman Law and our old law before the code, was in the sense that if the work was such that it should have been accepted, then the master must suffer the loss of the materials, and pay the price of the work. The proof of the work being well done would be on the workman, but if he could make such proof he was to be paid. Such was the law before the code. It has been urged that our codifiers intended to reproduce that law. Under the strict wording of Art 1686 and in view of the fact that it has been taken textually from the Code Napoleon, I do not see how we can do otherwise than accept it as being our law, and consequently reject the solution of the Roman Law and the old law. We have been dealing hitherto with moveables. Do articles 1684 and 1686 apply to Architects and Builders? Are they included in the term "workman?" In the cases which we have been discussing does the architect lose the value of his services and the builder his materials and labor? As is natural upon so important a question there is diversity of opinion.

The Roman Law considered that where the owner furnished the land, whatever was built on the land acceded to it and became his property by right of accession. They therefore applied the maxim, 'Res perit domino,' 'a thing perishes for the owner,' and concluded that the owner must suffer the loss of the materials which had gone into the building and must pay the builder according to the work done. This also seems to have been the view taken by the old law before the Code. Pothier, treating of this subject says, "Supposing I have made a contract with an architect to build me a house on my property, for which he is to furnish the material. So fast as the building is erected it becomes an accessory of my ground. All that results from the work of the architect, the materials furnished and the form given to them belongs to me by right of accession. The loss is consequently mine, if it perish accidentally. The commentators of the Code Napoleon have considered that these articles were equally applicable to architects and builders, and that until the building was accepted its loss fell upon them. There is no valid reason for excluding architects and builders from their provisions, and even if you did do so you would still fall under the general rule, 'res perit domino,' and then if you considered the builder still the owner of the materials until their reception, the loss would be his.

It is said in answer to the argument that the materials accede to the soil, and consequently belong to the proprietor by right of accession, that accession is not accomplished against the will of the proprietor, and that these materials are only conditionally his property, and cannot be at his risk. La Cour de Cassation, the highest court in France, has adopted the reasoning, and, so far as the Code Napoleon is concerned, such seems undoubtedly to be the law. As a matter of fact, both the Roman law and the French law have exactly the same point of departure in the maxim 'res perit domino,' the effect, however, which they have each given to it has been different. The Roman law found the owner in the master, by right of accession. The French law found the owner in the workman, by right of an implied contract by which the master only became owner after the work had been received by him, thus seeing an intention in the parties to override the general principle of accession.

Has our code adopted the solution of the Code Napoleon? We have seen that it has adopted the exact wording of its text, and it would seem to me that unless we can find some very good reason in the codifier's report for believing that they did not intend such to be the solution under our code, that we must take it as it stands and join hands with the French authors.

An examination of the codifier's report makes it perfectly plain that they did so intend to adopt the Code Napoleon.

We are therefore forced to the conclusion that the building is at the risk of the builder until its acceptation, or until the owner is in default to receive it. The principles governing the contract of lease and hire of work apply, and not those governing the right of accession.

Two cases recently decided by our Court of King's Bench leave no doubt upon the point. I refer to the case of Murphy v Forget and Lessard v Shallow. In both these cases the court decided that these articles apply to architects and builders. They adopt the Code Napoleon and say that the contract is governed not by the rules of accession but by those governing the contract of lonage d'ouvrage.

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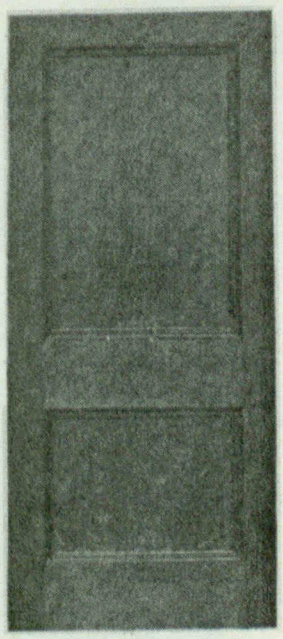

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The Don Valley Brick Works

are now manufacturing

POROUS TERRA COTTA FIREPROOFING

IN ARCHES, BLOCKS AND FURRING

in any required size.

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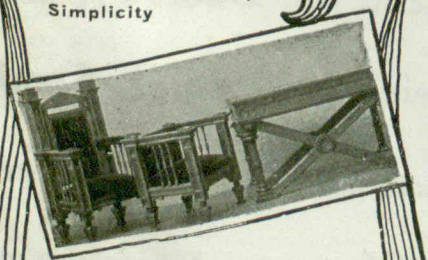

We design and manufacture Fittings for Banks, Offices, Schools, Churches, Opera Houses, Drug and Jewelry Stores. Write for further particulars and prices to

The Canadian Office and School Furniture Co., Limited,
PRESTON, - - Ont., Canada.

Established 1898.

The Hanover Portland Cement Co, L'td
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Manufacturers of the Celebrated

"SAUGEEN" Brand of PORTLAND CEMENT

Prices on application.

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Distinguished by our trade-mark the **Colored Spot.**

Warranted to be of pure Cotton, Smooth Finish and Perfect Braid. Samples Free.

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The Vokes Hardware Co. Limited, Toronto, Ont.

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Pressed Bricks, Roman Manufactured Stone and Terra Cotta, Sandstone.

Contractors' Plant, Crushed Stone for Concrete, Etc.

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CANADIAN CONTRACTORS' HAND-BOOK AND ESTIMATOR

The third edition of the Canadian Contractor's Hand Book is now on sale. The book has been revised and enlarged to upwards of two hundred pags, and the title changed to the Canadian Contractor's Hand-Book and Estimator, considerable matter bearing on the cost of performing various kinds of work having been added.

The price of the third edition, mailed free, is $1.00 to subscribers of the CANADIAN ARCHITECT AND BUILDER, and $1.50 to non-subscribers. Order from the publishers,

The C. H. Mortimer Publishing Co. of Toronto, Limited

Confederation Life Bldg., Toronto.
Alliance Building, Montreal.
310 McIntyre Block, Winnipeg.

NOTES.

A correspondent writes the London Builders' Journal to know whether he should come to Canada for employment at his trade as carpenter and joiner or join the army. The Journal advises hime to come to Canada where he will have plenty of scope and opportunity to start in business for himself.

Ochre has frequently been recommended as a primer for use under subsequent coats of white lead. While it has undoubtedly the property of holding fast to wood itself, it does not hold as well to the white lead coats, which sometimes separate from it in flakes. This could probably be avoided by the addition of a certain proportion of white lead to the ochre for the priming coat.

The Canadian Bridge Co., Limited

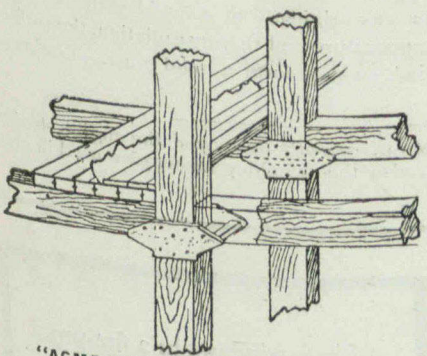
Walkerville, Ontario

··· MANUFACTURERS OF

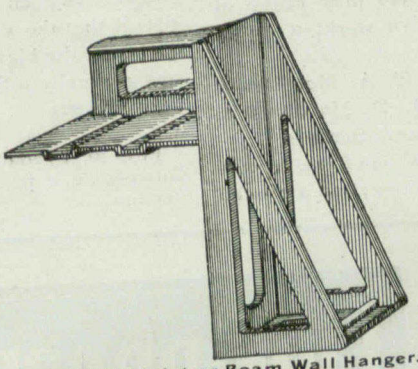
STEEL BUILDINGS, ROOF TRUSSES

Railway and Highway Bridges and Structural Steel and Iron Work of all description
Estimates furnished upon application.

BURNED OUT IN TORONTO FIRE?



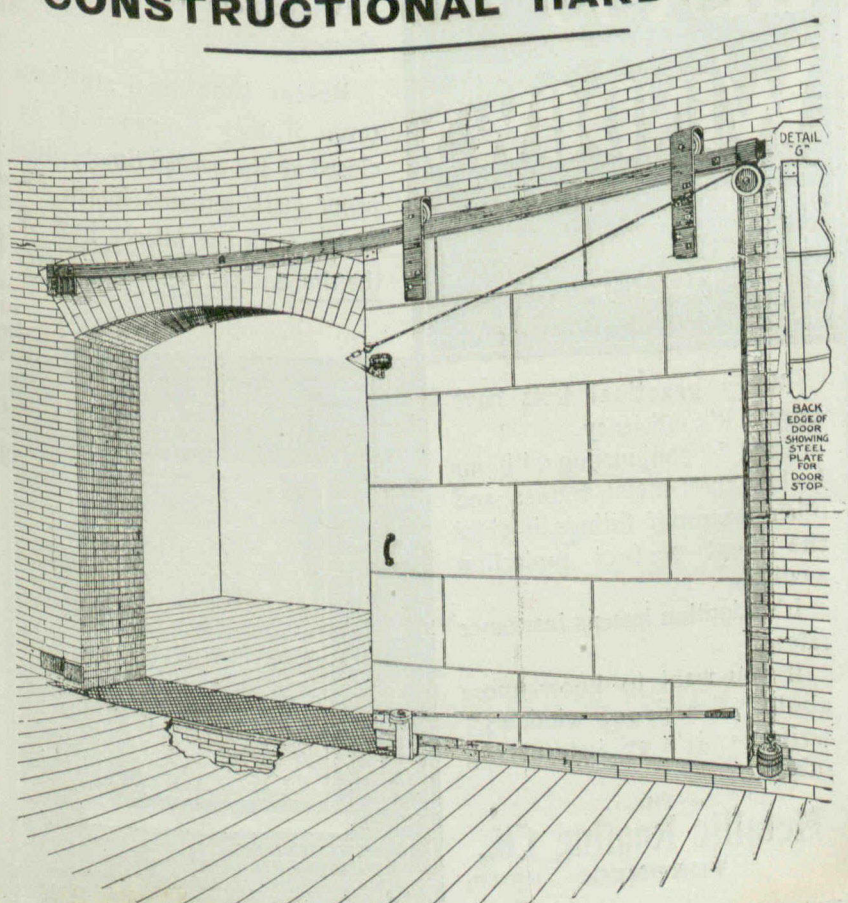
"ACME DUPLEX" Post Caps & Bases.

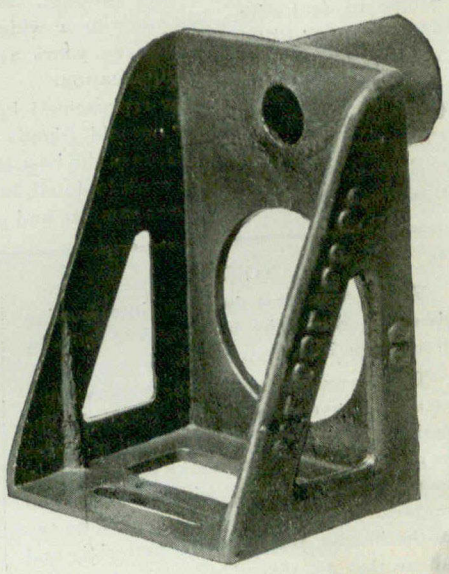


"DUPLEX" Joist or Beam Wall Hanger.

Then REBUILD your Factory or Warehouse with our Underwriters' ACME "DUPLEX" Fireproof (self-releasing by Fire) Ventilated, Up-to-date

CONSTRUCTIONAL HARDWARE.





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(UNDERWRITERS)

Fire Door and Shutter Fittings.

SELF-CLOSING BY HEAT.

ARE NOT EQUALLED BY ANY OTHER.

Install our FITTINGS and REDUCE your INSURANCE on old as well as new Buildings.

Write for particulars re our
"ACME MULTIPLEX" Ventilating Apparatus,
for Foundries, Factories, Auditoriums, Laboratories, etc.

THE
VOKES HARDWARE CO.
LIMITED.

111-113 Yonge St., TORONTO.

AN EXPLANATION.

NEW YORK, June 7th, 1904

To the Editor of the CANADIAN ARCHITECT AND BUILDER.

DEAR SIR,—As a means of justifying ourselves and correcting a false impression, we would ask you to publish this letter in a conspicuous place in your magazine.

There appears to have been circulated in Montreal a false, as well as unjust and spiteful rumor as to our standing and methods of doing business. This is evidently the result either of a row between two parties who agreed to act in conjunction as our agents there, or else the result of a spiteful feeling on the part of one of the above mentioned individuals, because of our having refused to continue business relations after our experience with his firm on the subject of payment of duties and delivering in which they were guilty of gross errors and misrepresentations too serious to cite.

We are not interested in family rows, nor do we care to slap back, for we might be able to hit too hard; but we want it thoroughly understood in Montreal in particular and Canada in general.

1st.—That we were the first to show American goods in our line, could be sold and delivered with eminent satisfaction to the Canadian market, and ours in particular, cheaper and better than any others.

2nd.—That we are in the Canadian market to stay, and to prove to the best builders and architects that we are A1 in finance, ability, delivery and product, and the right kind of people to deal with. We refer to a wide and long range of architects and builders during ten years active work, a list of which will be furnished on application.

In Montreal we are now represented by T. A. Morrison & Company; in Toronto by our old friends J. D. Macdonell & Company, both representatives of the best the trade offers.

Extensive photos of past work in detail, in album form, a practical and technical catalogue; samples and prices; and a printed and classified list of users of over ten million of our brick in the States; and a stock-list of brick, close up to two million are ready to be placed at the disposal of Canadian architects or builders who wish to be convinced of our standing. We invite inspection of our Canadian deliveries as compared with those of other manufacturers, including English and Scotch.

Very truly yours,

AMERICAN ENAMELLED BRICK & TILE CO.

J. Francis Booraem, Mgr.

SOURCES OF HEAT.

Faraday calculated that the average amount of heat radiated in a day on each acre of ground in the latitude of London is equal to that which would be produced by the combustion of sixty sacks of coal.

The heat of our globe is termed terrestrial heat. The layer of constant annual temperature is the limit to which the solar heat can penetrate below a certain internal layer. Its depth varies in different parts of the globe; at Paris, it is about 30 yards with a constant temperature of 11.8° C.

The temperature increases below the layer of constant temperature at the rate of 1° C for every 90 feet on the average. The greatest increase is at Irkutsk, in Siberia, where it is 1° for 20 feet, and the lowest is in the mines at Mansfield, England, about 1° C. for 330 feet. This central heat is confirmed by the existence of hot springs and volcanoes.

To account for the existence of this central heat, various hypotheses have been proposed. The one usually adopted by physicists is that the earth was originally in a liquid state in consequence of the high temperature and that by radiation, the surface was gradually solidified, so as to form a solid crust.—Engineering Review.

Fire at Tyndall, Man., recently destroyed the engine shed of Gunn & Co.'s quarry, also the switching locomotive used in connection.

NOTES.

Water was first brought into London dwelling houses by lead pipes in 1582, by Peter Morris, a Dutchman.

Two Canadian patents for fireproof construction have recently been granted. The main feature of one is a network of wires or rods, fastened with hooks to supporting beams, and covered with a reticulated material; concrete is then placed on top of the beams, rods and this material, and above that are placed alternate layers of felt paper and insulating material, and the floor is laid on top of them. The other patent consists of a fireproof tower containing ventilating shafts, in connection with a system of water-pipes arranged in the ventilating shafts and within recesses in the floor of the building. Other inventions are a device for removing shingles and a tiled flooring.

The Japenese houses extend from the magnificent types of towers known as 'pagodas' to the plain dwelling. Some of these dwellings, however, are exceedingly elaborate in structure, the tile roofing often being highly colored. The coloring materials are made into the clay stuffs at the works, and the color is therefore fixed and lasting, even under the influences of the sun and the rains. Many of the low buildings are erected with an unusually rigid framework, which is built in with the clay cubes, bricks and tilework. The 'cage' construction of house building is followed quite closely, and one sees many a little Japanese habitation, in which the tiny apartments are erected with heavy walls, very clumsy and thick but essentially substantial. Much of the timber work is round, and the connections are with mortise joints pinned together. The roof is trussed and commonly tiled.

FIRE-PROOF GLASS WINDOWS THAT ARE FIRE-PROOF

These windows in a fire-proof building, complete the security, and in any building will thoroughly prevent the spread and advancement of the fiercest flames.

Better than iron shutters (even if they happened to be closed at the needed time); fire-proof glass remains intact, resisting both the intense heat of the fire and the action of water.

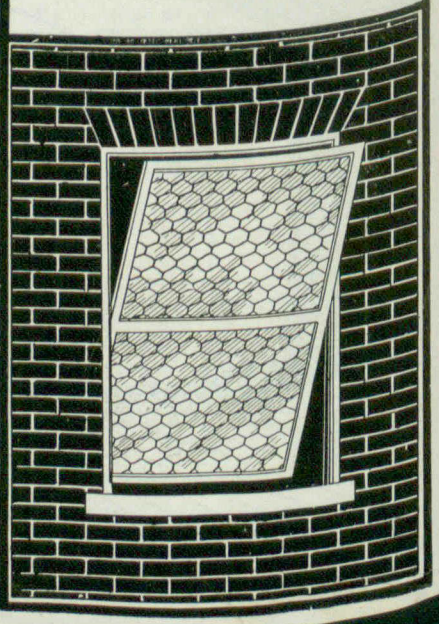
Many practical tests have proved it's efficiency.

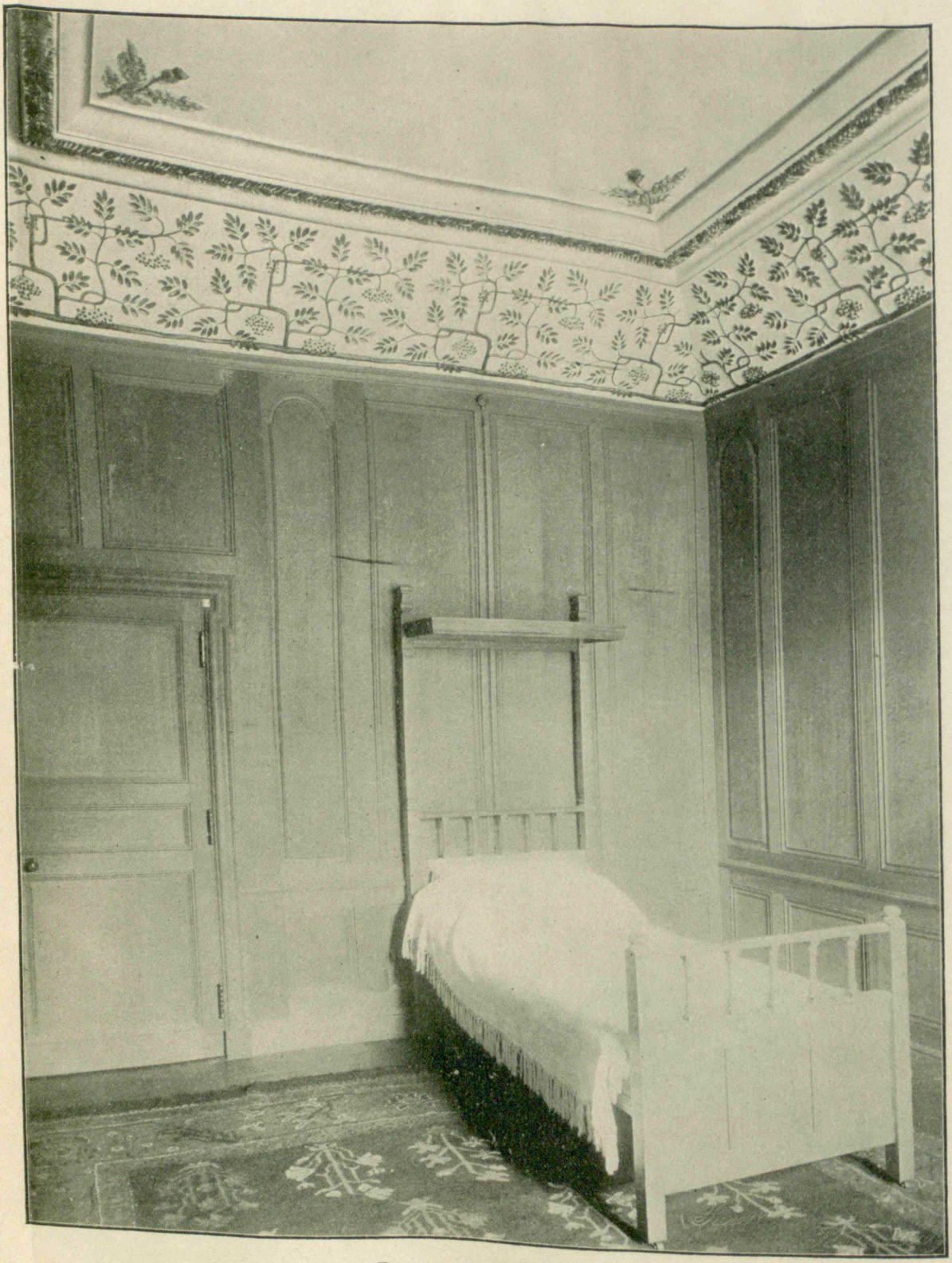
Used in conjunction with our hollow sheet-metal frames and other fire-proof fittings, it gives the most perfect protection available

It's adoption lessens insurance rates.

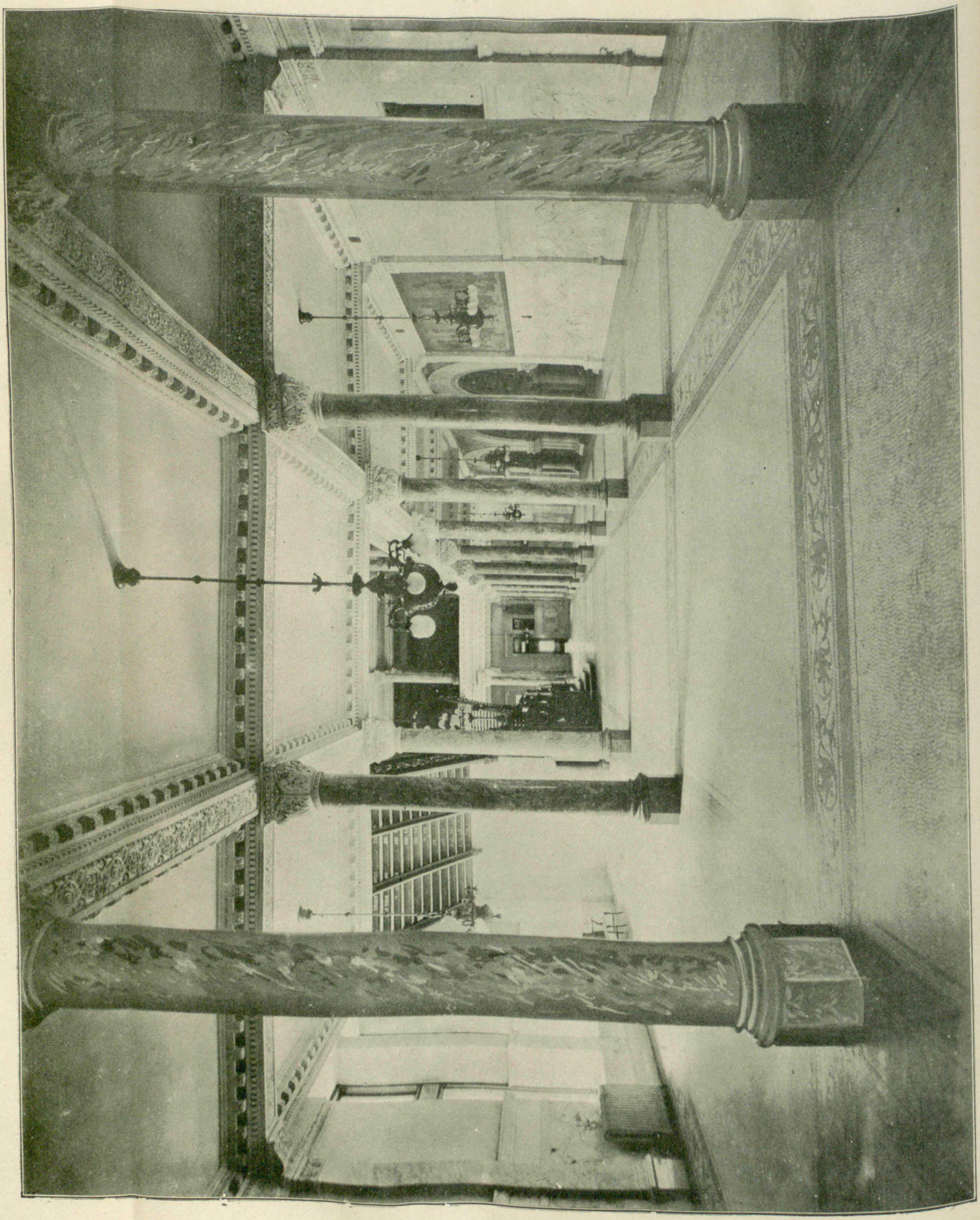
If you want to know more about "fire-proof windows," write us, it's an interesting subject.

...THE...
Metallic Roofing Co.,
TORONTO. LIMITED,



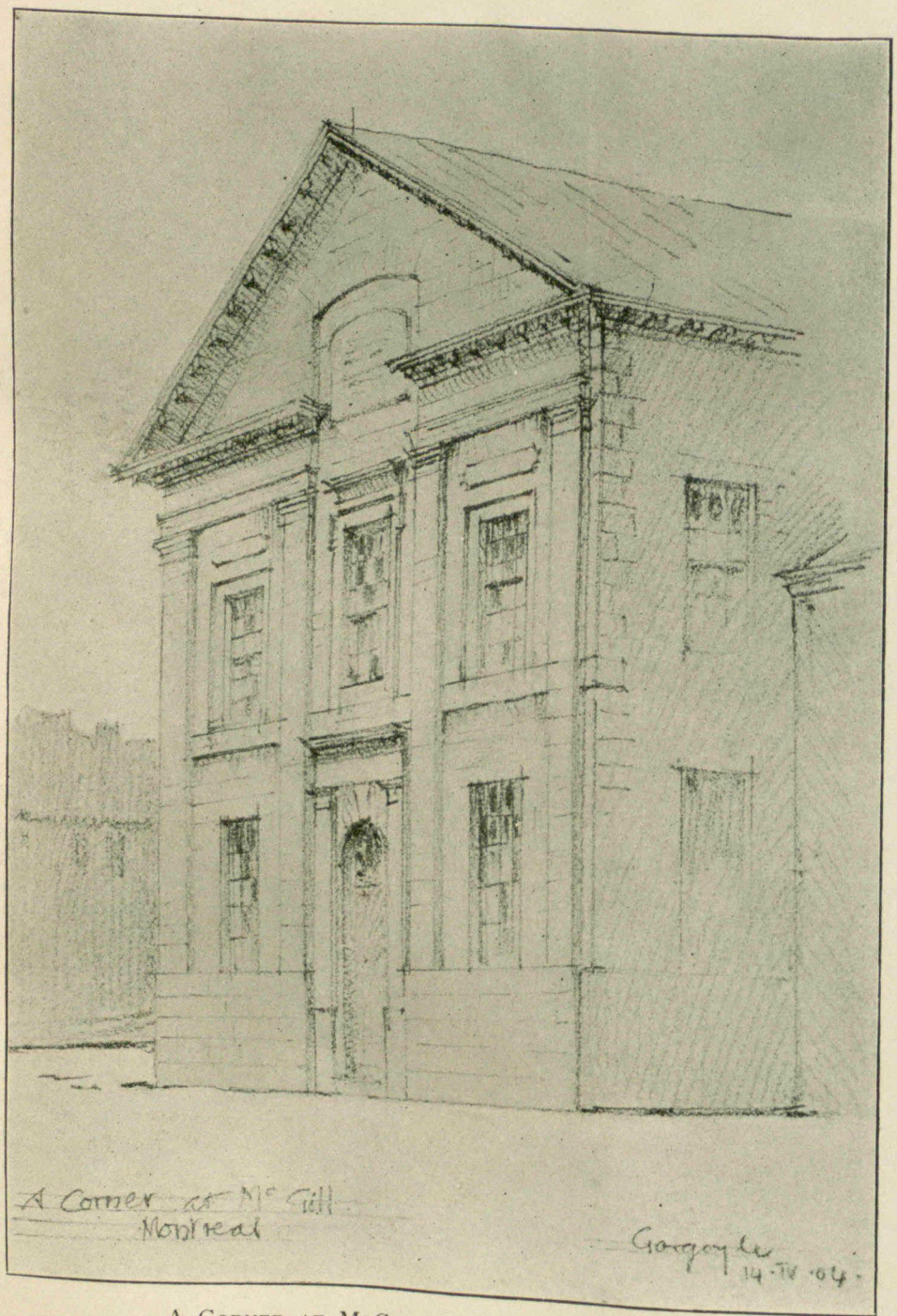


PLASTER DECORATIONS
R. S. LORIMER, A.R.S.A., ARCHITECT

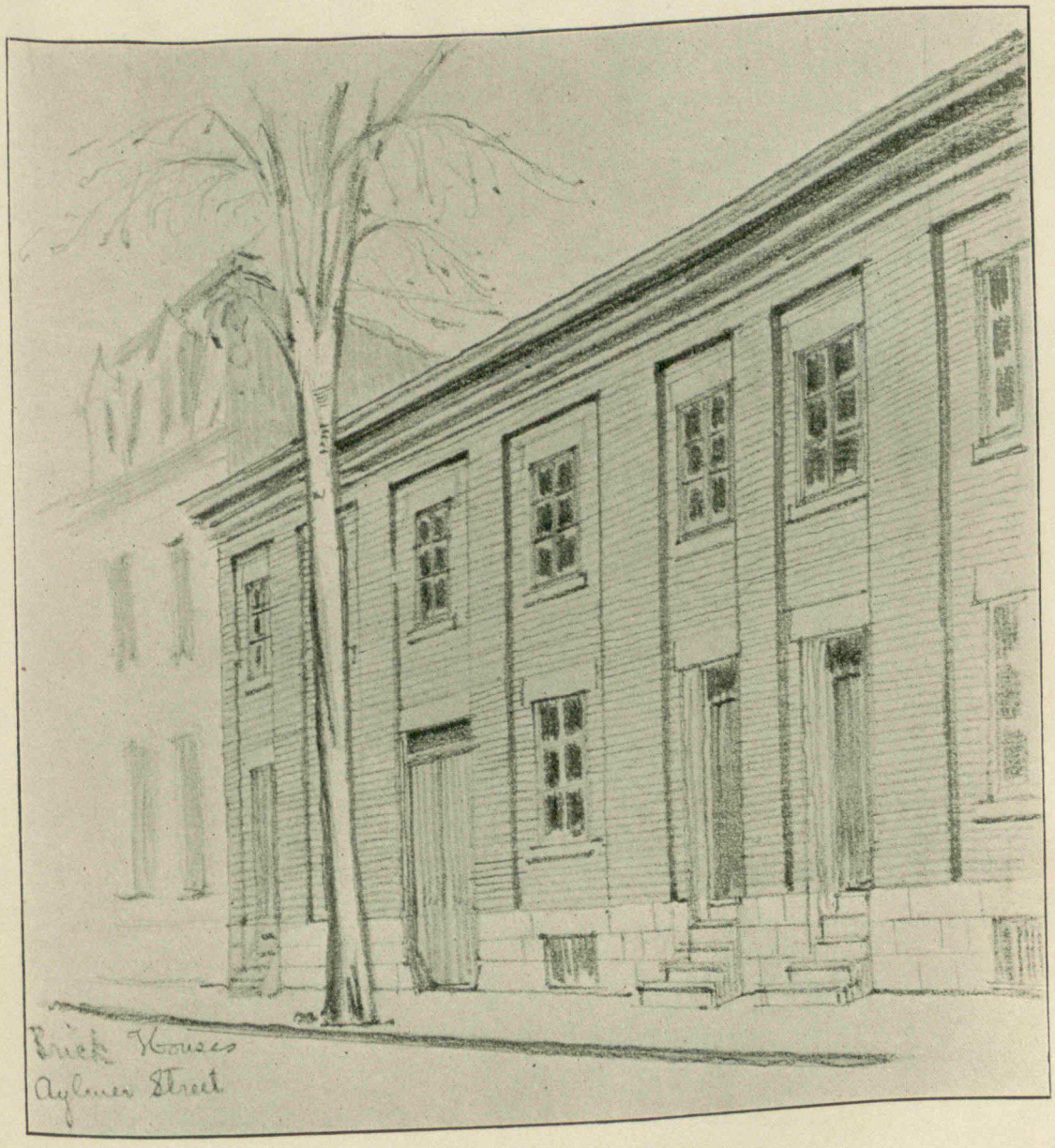


MAIN CORRIDOR, CITY HALL, TORONTO
E. J. LENNOX, ARCHITECT

SUPPLEMENT TO
CANADIAN ARCHITECT AND BUILDER
JUNE, 1904



A CORNER AT MCGILL UNIVERSITY, MONTREAL
SKETCH BY "GARGOYLE"

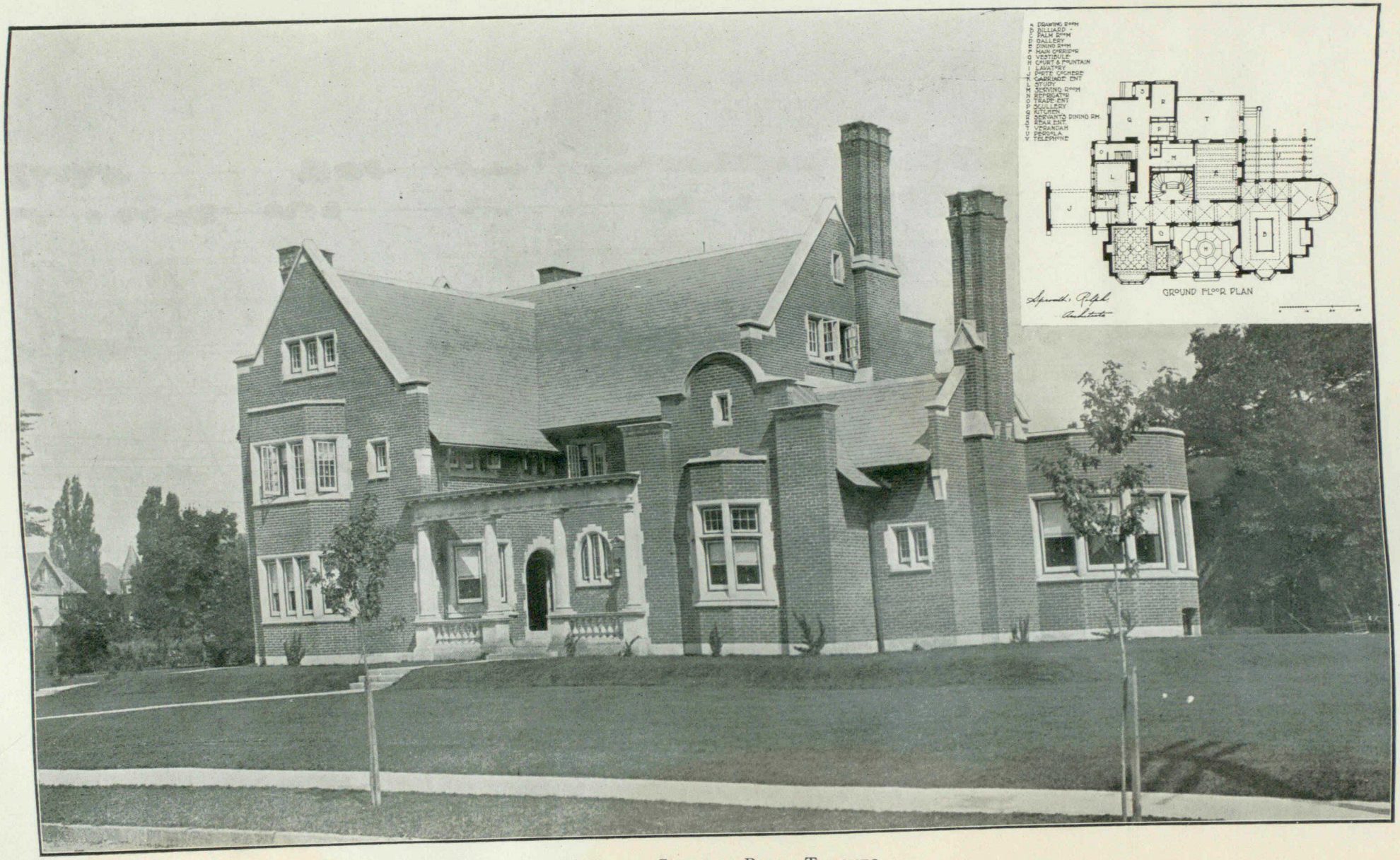


OLD BUILDING, MONTREAL
SKETCH BY "GARGOYLE"

SUPPLEMENT TO
CANADIAN ARCHITECT AND BUILDER
JUNE, 1904

A Passage in the Falkland Palace, Scotland

John Knecross, R.S.G., Architect



HOUSE IN CRESCENT ROAD, TORONTO

SPROATT & ROLPH, ARCHITECTS

SUPPLEMENT TO
CANADIAN ARCHITECT AND BUILDER
JUNE, 1904

PERSONAL.

Mr. W. W. Stewart and Mr. W. P. Witton, architects, of Hamilton have recently formed a partnership.

It is a subject of regret to many friends of Mr. Wm. Stewart, of Hamilton, to learn that he has been compelled by ill health to abandon practice. Mr. Stewart is one of the ablest and most highly respected architects in Ontario.

NOTES.

By experiment it will be found that the heat on the surface of clear glass and that of the same surface painted black on the back side, subjected to the same sun rays, will give off a much different thermal register. This accounts for the frequent cracking of glass, a part of which has been painted black to give greater prominence to signs lettered on the face.

The using of electric light in bathrooms, either public or private, so it is asserted by an English engineer, is dangerous in many cases. He says that "the electric light switches most usually employed have brass covers and brass knobs, and it is quite possible that this metal work may be in unsuspected contact with the electric supply wires. In such a case a person standing on a dry wooden floor, and using the switch, would not notice any defect, but any one in the act of taking a bath, or standing with bare feet on a wet or metallic floor, and attempting to turn on the light, would receive a very severe shock which would probably prove fatal even at the comparatively low pressure of 220 volts."

An unusual piece of repairing is being done on an old fashioned brown stone building in Warren street, New York, according to Carpentry and Building. Workmen began to tear out some of the masonry recently, removing the stone from the ground upward instead of the roof down. When the front of the first floor had been laid open workmen began to remove the old wooden beams. As fast as a beam was taken out an iron girder was put in its place. All the beams in the first floor have been replaced by steel, bolted together just as any other steel structure would be. When the five floors are done, the remarkable change will have been effected with little difference in the building, yet the structure will be a modern steel frame office building instead of an old fashioned wooden one.

Milton

DR. ROBERTSON, PRESIDENT. J. S. McCANNEL, MANAGING DIRECTOR.

ARCHITECTURAL TERRA COTTA

We make a Specialty of Ornamental Brick and Terra Cotta Mantels

High-Grade Pressed and Ornamental Bricks in red, buff, yellow, salmon, brown, and Special shades. : : :

Pressed

Our products have a wide reputation and are specified by leading architects

THE MILTON PRESSED BRICK CO., LIMITED

Bricks

Works and Head Office: MILTON, ONT.

Montreal Agents: T. A. MORRISON & CO., 204 St. James Street.

WHAT WE SAY

VELURE

A new and perfected JAPAN PAINT, superseding varnish, with remarkable spreading, elastic and weather resisting properties. One coat equals two coats of ordinary paint and one of varnish. In 120 colours. Any shade matched. Sanitary washable. Will not crack, chip, peel, blister, or fade. Twelve months' guarantee given by the manufacturer. Saves time, labour, varnish and money.

C. CHANCELLOR & CO.,

13, CLERKENWELL ROAD, LONDON, E.C.

WORTH | One Gallon will Cover about 90 Square Yards. | TRYING.

FINISHED LIKE A MIRROR.

Your white Velure is the best we ever tried on the Yachts. Two coats really finished like a mirror. It far surpassed any enamel or ivory japan we ever used. I have done all the Windows in the house with it.

HUGH DOBBIAN, Yacht Builder.

Nunsquarter, Kirkcubbin, Co. Down, June 24, 1901.

VELURE

WHAT CUSTOMERS SAY

H.M. THE KING.

I have had it used at Sandringham for H.M. the King and found it most satisfactory. It was used on some large additions last year.

C. SMEDLEY BECK, Architect.

11a, Prince of Wales Road, Norwich, Jan. 21, 1903.

ARCHITECT.

I am exceedingly pleased with the result of the Velure I had last year. Our doors look and feel like ivory, and show every appearance of great durability. I find that they keep very clean, and do not take the dirt.

A. E. PURDIE, F.R.I.B.A.

Meadow Grange, Blean, near Canterbury, Jan. 3, 1902.

IN A STEAM DISINFECTOR.

I am pleased to state that the Velure has been a perfect success so far. It has been subjected to great heat, steam pressure, and withstood the expansion and contraction of the iron, and there are no cracks or flaws to be found, the surface being perfect. It was applied by unskilled labour, the hospital porter doing the work.

J. BROOS, S.I.C., A.S.I., Surveyor, R.D.C., Stratford-on-Avon, 5th December, 1902.

UNDER WATER.

Velure gives a beautifully smooth surface, which remains hard under water, and does not foul easily.

JOHN MACKENZIE, Sail Maker.

Sandbank, Argyllshire, Sept. 26, 1901.

BETTER FINISH. BETTER WEAR. FEWER COATS. LESS MATERIAL.

STANDS ANY AMOUNT OF EXPOSURE TO SUN OR FROST, HEAT OR DAMP, WITHOUT CRACK OR BLISTER.

Agents : The Canada Hardware Co., Ltd., 10 De Bresoles St., Montreal, Que.
J. D. Macdonell & Co., 19 Yonge Street Arcade, Toronto, Ont.
R. W. Ambrose, United Petroleum Co., of Canada, Ltd., Amherst, N. S.

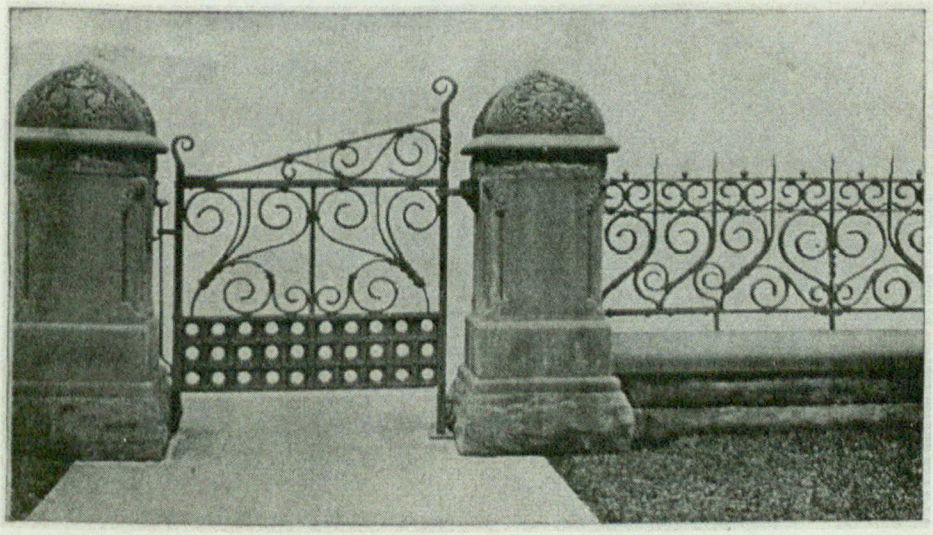
METHOD AND COST OF HEATING FROM CENTRAL STATIONS.

Heating from central stations, as a subject in the question box of a recent meeting of the Iowa Electrical Association brought out some interesting information. The Brice Gas & Electrical Company, of Mason City, Ia., which uses a hotwater heating system, wrote that it figures the amount of radiation required, according to the glass surface, wall surface and cubical contents, and makes a rate per season based on the amount of radiation required. If a consumer installs less radiation than the amount called for, he is compelled to pay for the full amount, which nearly always insures his installing it. If the radiation should be found insufficient, no extra charge is made for additional radiation installed, provided the normal temperature of the room does not exceed 70 degrees. H.C.Eddy, of the Chicago office of the American District Steam Company, contributed the following data: In a city in central Illinois the heating business is for public building exclusively, all on a meter basis of charge. The highest rate of condensation per 1,000 cubic feet of space per season last year was 10.779 pounds. The lowest was 1,650 pounds, and the average of all the customers served 5,328 pounds. A city in Nebraska heating public and business buildings gives the following figures: Highest rate, 7,475 pounds; lowest, 1,302; average of all customers served, 4,522 pounds. A city in Kansas finds the highest rate 13,709 pounds; lowest rate, 1,278 pounds; average of all customers served, 4,693 pounds. A city in Colorado: Highest rate, 24,666 pounds; lowest rate, 1,611 pounds; average of all customers served, 8,653. In a city in Missouri the average results are: Residence, 9,400; public library, 5,800; theaters, 2,900; hotels, 5,410; churches, 2,840; stores and office buildings, 7,030; average of all meter customers, 5,503; average flat rate customers of the same general class of occupancy, 19,720. In a city in Pennsylvania for the first four months of this year one customer on a flat rate used 7,800 pounds of water per 1,000 cubic feet space. Another customer under the same conditions used 7,250 pounds, and a third customer under the same conditions but for three months instead of four, used 4,250 pounds. In the first instance, if the condensation used by the consumer had been paid for on basis of meter registration at the regular prevailing rates the cost for the four months would have been $1,065.42. That flat rate for the entire season was $1,200. In the second instance, if the condensation had been paid for at the regular prevailing rate, the cost would have been $848.16. The flat rate for the entire season was $720. In the third instance the three months on a meter basis would have cost $305.22, while the flat rate for the entire season was $300. In another case where the meter customers and flat rate customers represent practically an equal amount of space, it was determined that for the meter customers it required at the plant 712 pounds of coal per 1,000 cubic feet space heated per season and for the contract customers it required at the plant 3,280 pounds of coal per 1,000 cubic feet space heated per season.

Attention is directed to the advertisement in this number of the Richmond Conduit Mfg. Co., referring to their electro-galvanized and navalite conduit tubing and fittings for interior wiring, the use of which affords safety from fire.

WROUGHT IRON FENCE

Makes a Neat Appearance
Forms a Perfect Protection and Will Last a Life Time



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FROM $1.00 A FOOT UPWARDS. SEND FOR BULLETIN NO. 17.

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