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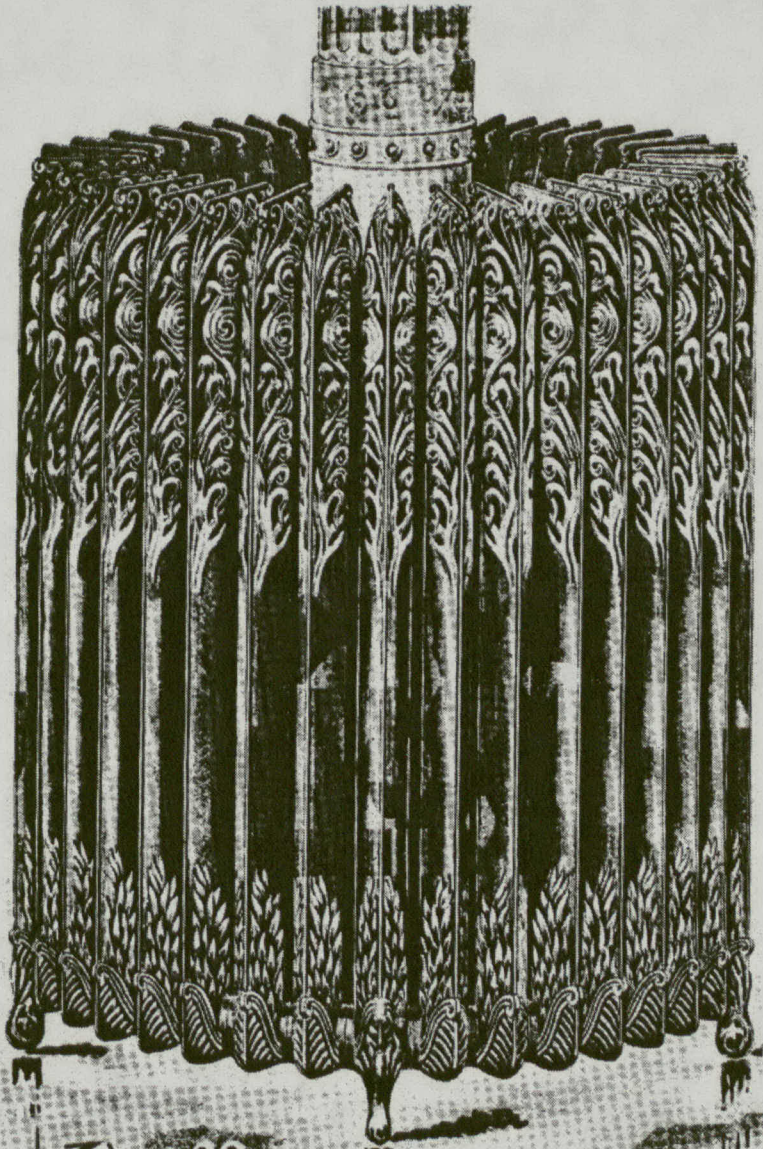
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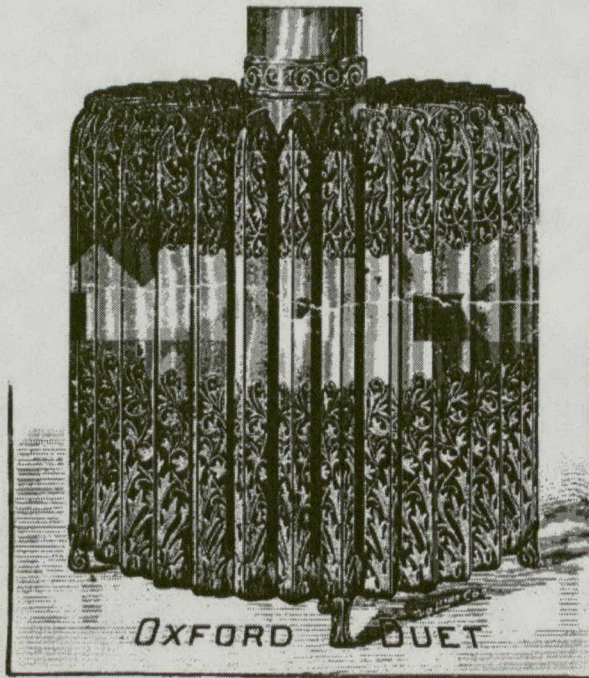
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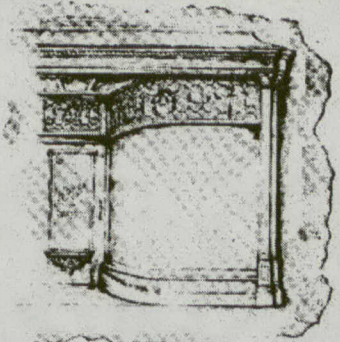
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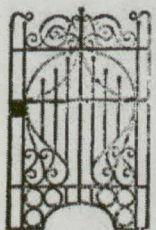
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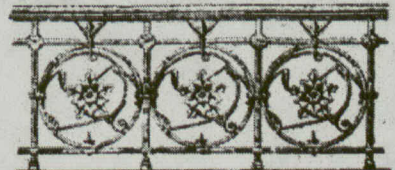
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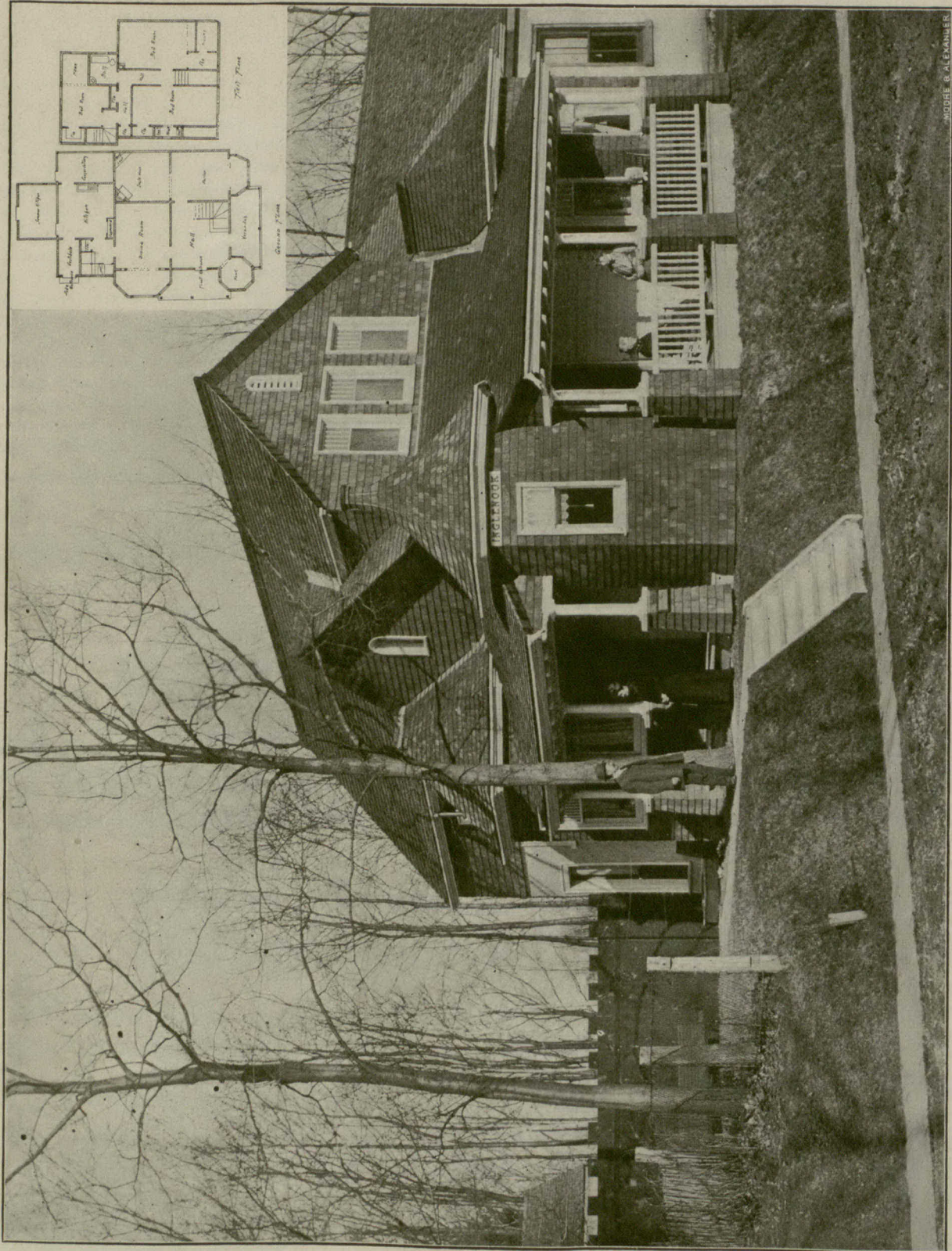
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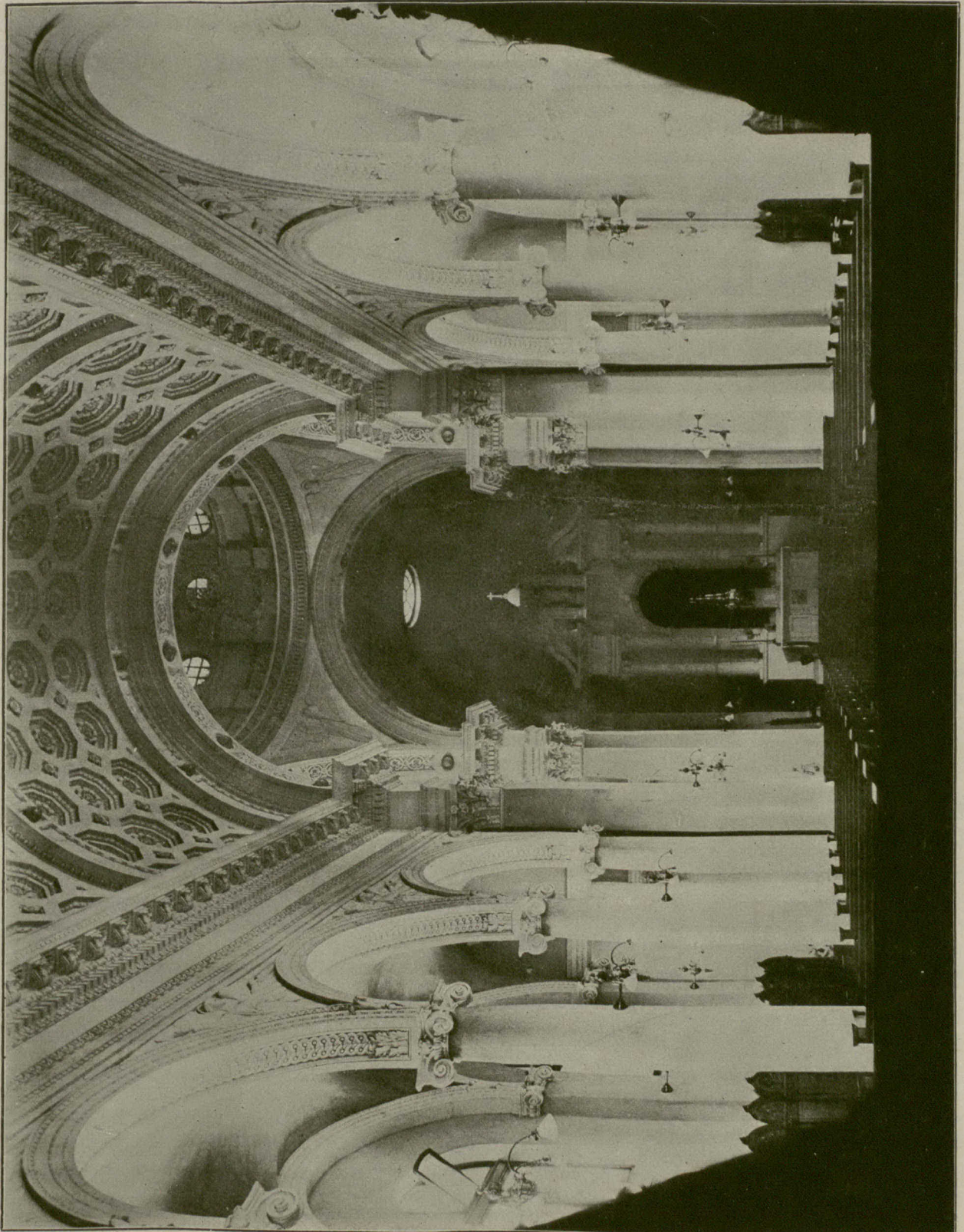


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The Canadian Architect and Builder

VOL. XIV.—No. 161.

MAY, 1901.

ILLUSTRATIONS ON SHEETS.

Working Drawings of a Suburban House—R. J. Edwards & Wagner, Architects.

ILLUSTRATIONS IN TEXT.

Design for Small Suburban House (Illustrating Paper by Mr. Searles-Wood before the London Architectural Association.)

ADDITIONAL ILLUSTRATIONS IN ARCHITECTS' EDITION.

Photogravure Plate—St. George's Cathedral, Kingston, Ont., (Reconstructed)—Messrs. Power & Son, Architects.
" Branch Bank of Canadian Bank of Commerce, Bloor Street, Toronto—Messrs Darling & Pearson, Architects.
Summer Residence, Balmy Beach, Toronto—Messrs. R. J. Edwards & Wagner, Architects.
Interior of Chapel, Loretto Abbey, Toronto—Beaumont Jarvis, Architect.

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" W. H. ELLIOTT, of Messrs. Elliott & Son Co., Toronto.
" J. C. B. HORWOOD, Architect, Toronto.
" A. F. DUNLOP, R.C.A., Architect, Montreal.

Our Students' Department.

Attention is directed to the first of a series of articles on Portland Cements, which appears in the Students' Department of this number. Mr. J. R. Gardiner, architect, of Montreal, very kindly offered to prepare these articles for the benefit of students, who will, no doubt, appreciate his friendly interest in their welfare as well as the value of the information supplied. It is hoped that that other architects will follow the example set by Mr. Gardiner, by contributing from their store of knowledge and experience to the needs of the younger members of the profession.

This forms the subject of an enquiry which is now being conducted by a special committee appointed for the purpose by the Royal Institute of British Architects. The committee invite from competent observers data relating to the effect of lightning strokes on buildings, whether fitted with lightning conductors or not. Particulars such as the following are asked for:—Description and situation of building struck, height above sea-level, position with regard to other buildings and high trees, and propinquity to wells; whether rain was falling at the time, if not, whether rain preceded or followed the stroke, and at what interval; as to the number of lightning rods on the building, giving position, height above roof, material (both of rod and staples) shape, sectional area, how finished at top and at bot-

tom, condition after flash, &c.; whether conductor was continuous; particulars of earth connection: when conductor was first examined and tested; nature of soil; the precise nature of the injury to the building; if any portion was set on fire; damage to metal work, such as bells, rainwater and other pipes, electric bells or telephones; distance from conductor of portion of building affected; materials of roof coverings, and position of gutters and down pipes; whether conductor was in contact with any other metal; particulars as to metal-cresting, weather cocks, finials or flagstaves on the building, stating distance from and the height above conductor; if conductor was struck, whether damaged portions can be obtained for examination, &c.

Housing of the Poor.

In London and New York, earnest efforts are being made to provide better living accommodation for the poorer classes, thereby making life to them better worth living and lessening the amount of disease, vice and crime. In London, the problem is being dealt with by the County Council, which, as the result of experiments on a smaller scale, has now decided to invest \$7,500,000 in the purchase of 225 acres of land on which to build 5779 workmen's cottages in Tottenham, a suburb in the north eastern district. These cottages will accommodate 42,500 persons. The rental will be \$1.50 per week for a cottage of three rooms and a kitchen and \$2.50 per week for a cottage of five rooms and kitchen.

By special arrangement with the railways, workmen residing in this district, will be carried to and from their place of employment at one quarter regular fares. The enterprise is expected to pay a small dividend. In New York model tenements have been erected by private enterprise to the value of \$1,500,000. The results have been so satisfactory that it is proposed to invest \$1,000,000 more. These model tenements, while in striking contrast to the overcrowded buildings in which the poorer classes have heretofore lived, and are yielding satisfactory returns to the investors.

An Interesting Legal Point.

The insurance companies holding policies on the Advertiser building, recently burned in Boston, contend that they are only bound to pay the amount of the policies or replace the building with one of identical character. The by-laws enacted since the time of the erection of the burned building, prohibit the putting up of such a structure. The owners of the building claim that the insurance companies are under obligation to put up a structure that shall comply with the existing law. To do this would involve a much larger expenditure than would be required to build a counterpart of the old building. An appeal will therefore be made to the Courts to decide the measure of the companies' responsibility. The verdict will have an interest for building owners and insurance companies everywhere.

THE EFFECT OF FREEZING ON CONCRETE.*

BY WALTER A. ROGERS.

With the constantly increasing use of concrete, questions as to its qualities are continually arising. It has been a commonly accepted opinion among engineers that the building of concrete masonry, especially above ground, during freezing weather is bad practice and one to be avoided if possible. The writer has frequently found it necessary to put in Portland cement concrete footings during the winter months and considerable care has always been taken to protect the freshly-mixed concrete from freezing. There has, however, been a feeling of uncertainty as to the effect of freezing if it should take place before the concrete has thoroughly set.

In order to determine as far as possible by experiment the result of freezing Atlas Portland cement concrete and Louisville cement concrete, which were taken as types of Portland and natural cements, eight 12-in. cubes of each kind of concrete were made and tested as described in the accompanying tables:

The gravel was composed of about two-thirds clean coarse sand and one-third small stones. The crushed stone was crusher-run limestone. The cubes were all made by the same man and those for the same kind of cement were made on the same or on succeeding days. The specimens were moulded in boxes made of 1-in. boards, and left in these until taken out to be broken. Two of the eight cubes of each kind of concrete were mixed with salted water in the proportions of one pint of salt to ten quarts of water. The other six were mixed with ordinary hydrant water. Two of the latter were kept in a warm office until broken; they were used for purposes of comparison. Four were placed out of doors as soon as mixed in a temperature considerably below zero, and left outside for 28 days, when two of them were broken and two taken into the warm office and left for 28 days

more before breaking. The two cubes of each test which were mixed with salted water were placed outside as soon as made, and left to freeze and thaw until broken at the end of 28 days.

Referring to table No. 1 showing the effects of freezing on the Atlas cement cubes, it will be seen that the two cubes which were left in the office, Nos. 103 and 104, developed an average strength at the end of 28 days of over 185,000 lbs.—which was the capacity of the testing machine employed; but probably the strength of these cubes did not much exceed this amount, as one of them began to fail at that load.

The two cubes which were placed outside in temperature of about 15 degs. below zero immediately after being made, Nos. 147 and 148, developed an averaged strength of 115,000 lbs. The two cubes made at the same time and left out of doors for the same length of time and then kept in a warm room for 28 days more developed a strength of over 185,000 lbs., probably greater than that shown by the two cubes left in the office for 28 days, since no sign of failure by either of these cubes was manifest, indicating that freezing of these four cubes had the effect merely of causing the concrete to harden more slowly than it would have done under more favorable conditions of temperature. The two cubes mixed with salted water and then exposed to the cold for 28 days developed a strength of over 185,000 lbs., probably about the same as that of the two unexposed cubes.

The deductions which may be made from these Portland cement tests are:—(1) Freezing before setting does not seem to injure the Portland cement concrete even if, after having frozen hard, the concrete is exposed to alternate freezing and thawing weather. (2) Exposing freshly-mixed Portland cement concrete to freezing temperature seems to affect its rate of hardening, making it slower, it appears, but eventually the concrete will be just as good as if it had not been exposed to the cold. (3) The use of salt seems to largely counteract the effect of the cold in causing slow hardening.

Table No. 2 shows the tests of Louisville cement concrete cubes. It will be seen that the cube left in the warm room, No. 119, and broken at the end of 28 days developed a strength of 43,400 lbs., while cubes No. 153 and 154, which were placed outside in a temperature of 10 degs. below zero as soon as made, showed an average strength of 33,000 lbs. at the end of 28 days. Cubes Nos. 157 and 158, made at the same time as the last two and left out in the cold for the same length of time and then kept in a warm office for 28 days longer, had an average breaking strength of 52,500 lbs. The two cubes mixed with salted water and exposed for 28 days developed a strength of 35,000 lbs., being but little more than those treated in the same way and mixed with fresh water.

The same deductions may be made from the tests of Louisville cement concrete as from the Atlas tests, with the exception that the use of salt seemed to have had little, if any, effect on the strength of the cubes exposed to the cold. The fact that the extreme cold seems to have merely caused the hardening of the concrete to proceed more slowly than under more favorable conditions of temperature is brought out in a marked manner by the fact that the cubes left out in the cold for 28 days and then kept inside for 28 days developed a strength of 20 per cent greater than those which were kept inside for 28 days and then broken.

*A paper read before the Western Society of Engineers of U. S. A.

A certain retaining wall was built of Louisville-cement concrete, faced on the top and front with Portland cement mortar. The weather was quite cold part of the time while the concrete was being mixed, and part of it must have frozen before setting had entirely taken place. The 2-in. plank form was left in position until the Spring, and about 4 in. or 5 in. of sand was placed on the top of the wall. In removing the form last Spring it was found that the body of the concrete, to all appearances, was in good condition. About six inches from the top however, the Portland cement facing was badly cracked and by sounding occasional spots were found both in the

400 feet in circumference and 25 feet wide forming a promenade, surrounds the dome at a height of about 100 feet. This balcony is reached by powerful lifts and wide stairways. A colonnade 200 feet long and 80 feet wide with floor of ornamental black and white marble, leads to the main entrance beneath the great dome.

Next to Great Britain, Russia occupies the largest amount of space. A grant of £30,000 was made by the Russian government, for the erection of buildings which are all designed in the old Russian style, put up by Russian workmen, mainly with the aid of short-handled axes.

TABLE NO. I.
TESTS TO DETERMINE THE EFFECT OF FREEZING ON ATLAS-CEMENT CONCRETE.
Concrete composed of 1 part cement, 3 parts gravel, 4 parts broken stone.

No. of Cube	Date made.	Date broken.	Variation of Temperature.		Treatment of Cube.	Crushing-stress in lbs.	Behaviour in Testing-machine.
			Max.	Min.			
103 } 104 }	*Feb. 6, 1899.	Mar. 6, 1899.	80°	18°	Kept in warm office from time made until broken.	Over 185,000	Unbroken, slight flaking, no cracks. Slight flaking, split on one side in line of stress.
147 } 148 }	Feb. 6, 1899.	Mar. 6, 1899.	57°	-24°	Placed in open air as soon as made and left to freeze and thaw until broken.	130,000 99,600	
149 } 150 }	Feb. 7, 1899.	Mar. 7, 1899.	57°	-24°	Mixed with salt water, placed in open air as soon as made and left to freeze and thaw until broken.	Over 185,000	Unbroken, slight flaking, no cracks. Slight flaking, split on one side in line of stress.
151 } 152 }	Feb. 7, 1899.	Apr. 4, 1899.	57° 85° 32° Inside.	-24°	Placed in open air as soon as made and left to freeze and thaw for 28 days, then placed in warm office for 28 days more, then broken.	Over 185,000 Over 185,000	

*Fire went out and temperature dropped below freezing for a short time on two nights.

TABLE NO. II.
TESTS TO DETERMINE THE EFFECT OF FREEZING ON LOUISVILLE-CEMENT CONCRETE.
Concrete composed of 1 part cement, 2 parts gravel, 4 parts broken stone.

No. of Cube.	Date made.	Date broken.	Variation of Temperature.		Treatment of Cube.	Crushing-stress in lbs.	Behaviour in Testing-machine.
			Max.	Min.			
119 } 120 }	Feb. 13, 1899.	Mar. 13, 1899.	85°	40°	Kept in warm office from time made until broken.	43,400 Defective	Gradually failed by splitting and flaking in line of stress.
153 } 154 }	Feb. 11, 1899.	Mar. 11, 1899.	57°	-10°	Placed in open air as soon as made and left to freeze and thaw until broken.	28,700 37,000	
155 } 156 }	Feb. 13, 1899.	Mar. 13, 1899.	57°	-10°	Mixed with salt water, placed in open air, and left to freeze and thaw until broken.	34,200 35,700	—
157 } 158 }	Feb. 11, 1899.	Apr. 8, 1899.	57° 85° 40° Inside.	-10°	Placed in open air as soon as made and left to freeze and thaw for 28 days, then placed in warm office for 28 days more, then broken.	54,200 50,900	

Portland cement facing and in the back of the wall, where there seemed to be a thin loose shell. Evidently these are surface defects, and the wall itself appears to be in good condition.

The writer believes that the foregoing tests indicate that concrete work with cement possessing qualities similar to those tested may be carried on safely during moderately cold weather by using proper precautions, such as warming the materials and the water, and by so protecting each layer of concrete that its top shall not freeze before the next layer is laid.

[NOTE.—The temperatures recorded are Centigrade.

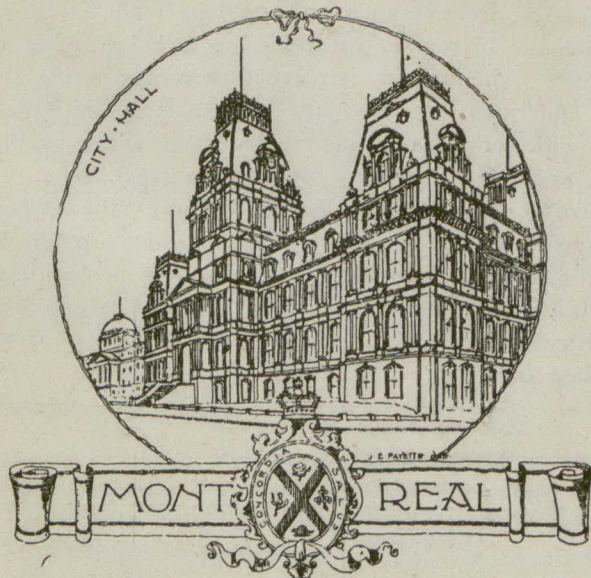
THE GLASGOW EXHIBITION.

The site of the Glasgow Exhibition comprises 73 acres intersected by the River Kelvin. The buildings, which were designed by Mr. James Millar, I.A., of Glasgow, cover an area of 20 acres. They are divided into three groups—the general industrial section, the machinery hall, and the grand hall for entertainments. They are designed in the Spanish Renaissance style, oriental coloring, the leading feature being the great dome 200 feet high and 80 feet in diameter, with four accompanying towers, each 160 feet high. A balcony

A USEFUL CEMENT TESTING DEVICE.

Mr. W. F. Goreham, an English cement works expert, has patented a device called a "Flourometer" for separating the flour from residue of cement, thus enabling the proportion of cementitious matter in the cement to be exactly arrived at. In this device, which is intended to furnish a means of test of quality of cement to architects and contractors, and other users of cement, air under a certain fixed pressure is supplied by an aerometer attached to the tube of the flourometer. The cement is placed, in a fixed quantity carefully weighed, into a conical glass, and a central tube is brought into it, with the bottom edge cut in a particular way. Air is then forced down the central tube, and rising up through the cement, lifts through the vertical tube all that is light enough to be lifted by its current, which is then deposited in a special settling chamber. About 2 to 3 per cent. of the flour is lost, but the residue always remains intact to be weighed for proportion.

The first stone of Cologne Cathedral was laid on August 15, 1248, and the body of the edifice was not opened until August 15, 1848, 600 years later to the very day. It was not, however, until August 15, 1880, that the splendid structure was finally completed, having thus occupied in building the "record" time of exactly 634 years.



Branch Office of the CANADIAN ARCHITECT AND BUILDER,
Imperial Building.

MAY 6TH, 1901.

THE NEW BUILDING BY-LAWS.

"The Montreal Building By-law of 1901" was passed by the City Council on the 4th February, and thanks are due in the first place to the committee of the P.Q.A.A., who about two years ago at an immense amount of labour studied the question and wrote out the text of the By-law, and secondly to Alderman Hart and those who worked with him for getting the by-law passed after having laid on the table so long.

We can congratulate the city in now having, in most particulars at any rate, a Building By-law that is workable and up-to-date and we trust that Mr. Chausse, the Building Inspector, will see that the various clauses are carried out. Mr. Chausse has already made great changes in his Department in the short time he has been in office and we are glad to be able to report that this Department is, at the present time on a good business-like footing. May it never be allowed to again sink to the level from which it has at last been raised, is the hope of all those interested in the City's welfare.

The By-law has been printed and it would be well for all architects and contractors, who have not already obtained a copy to do so and make themselves conversant with the various changes.

There is one good clause to which we would especially like to draw attention viz:—No permits shall be given for the erection of 3rd class buildings within the following districts bounded as follows:—

- On the N.E. by Delorimier Ave., Craig and St. Andre Sts.
- " " N.W. " DeMontigny, St. Urbain, Ontario, Berthelet St. and Burnside Place.
- On the S.W. by Mountain and Record Sts.
- " " S.E. " River St. Lawrence.

The text of the By-law was published in the CANADIAN ARCHITECT AND BUILDER for November and December, 1899, and but few alterations have been made. The portion referring to Plumbing has not been included, as it is intended to make a separate By-law of this part.

THE P.Q.A.A.

The Vice-President and Montreal members of the Council were "At Home" to the members of the Association on April 25th. Mr. Venne gave a very interesting lecture on the Certosa di Pavia, which was well illustrated by photogravures of different portions of the buildings, one of which showed the similarity between its entrance gateway to that of the Ponce de Leon Hotel in Florida erected some few years ago from plans made by Messrs. Carriere & Hastings.

The lecture was preceded by some capital selections on the violin as well as one or two songs, and Mr. Doran made a few remarks in reference to the lecture, saying that architects in the rush of every day practice had not the time necessary to work out the details of carving, etc., in such work as shown on the board and that he would like to suggest that they should be allowed to call in an artist to aid them in this class of work. This seems to us to be a dangerous idea to advance as if architects have to call in the aid of an engineer to draw out their steel construction and an artist to help them in their carving and mouldings that are a little beyond those used in every day practice, we are afraid that clients will begin to wonder what an architect is supposed to know beyond or above a contractor.

An architect from our point of view should be an artist with the practical knowledge necessary to be able to carry out his dreams on a sound constructional basis.

At the request of some of the members of the Association, a special general meeting has been called for May 8th to consider the alterations recently made in the "Schedule of Charges."

LOCAL PROSPECTS.

Nearly all the local architects appear to be busy and a large amount of work has been tendered on during the past month. The chief topic of conversation among architects at the present is the giving of the contract for the new Bank of Montreal building to Messrs. Norcross Brothers, of Worcester, Mass., and New York. Naturally all persons interested in the welfare of our Canadian builders are feeling sore at seeing the best contract given out so far handed to an American firm, even though it is one of the standing of Norcross Brothers. We regret very sincerely that the Directors saw fit to give the work to a firm not residing in this country, as their action is apt to be misconstrued as a kind of slur on the capabilities of our local men. We believe that the decision of the Board was only influenced by dollars and cents, and as the American firm was the lowest tenderer the contract was awarded to them. We feel, however, that Americans rarely, if ever, show us any reciprocity in this sort of thing and when it is a public body such as the Bank of Montreal, who are so bound up with the interests of the country, and are, we might say, a national institution built up out of Canadian enterprise, it seems a wrong policy on their part to pass by Canadian contractors. A building of this class is surely not above and beyond our contractors, for if such is the case, and we do not for one moment think so, the sooner they look into the matter the better for their own and their country's reputation. In the matter of cost, we can imagine that as certain materials must come from the United States that American firms may have been able to make better terms in certain cases than our local men—"Alas! now this way and now that turns fortune's wheel." Some of the other buildings already tendered on are: The new building for the Royal Insurance Co., which will form an addition to their present building on Place d'Armes, from plans by Messrs. Hutchison & Wood; a large factory for Messrs. Gault Brothers, on Hay Market Square, in the office of Messrs. Finley & Spence; College Buildings for the Grande Ligne Mission at Grande Ligne, from designs by J. Rawson Gardiner, and a warehouse for Jesse Joseph, Esq., to replace the buildings recently burned in the Board of Trade fire at the corner of St. Peter and Lemoine streets. This is the first attempt at rebuilding in the burned district, and the men are now clearing away the debris in the cellars of the burned structure. Mr. Coristine has had plans prepared for a large office building to replace his buildings burned in this district, but no contracts have so far been given out. The Council of the Board of Trade have done nothing definite, so far as we are able to ascertain, in preparing plans, though it is generally considered that some decision will have to be arrived at shortly. The C.P.R. Telegraph building is now nearing completion but the Grand Trunk Building does not show signs of being completed before the autumn. There should be no good draughtsmen idle at the present time as from word received both from New York and Chicago, there is great scarcity of good draughtsmen in both those cities.

THE PAN-AMERICAN EXHIBITION.

No doubt many of our local architects are looking forward to a trip to the Buffalo Exhibition. The various buildings have all been designed by eminent architects, and as colour has been extensively used in the general scheme, the result, no doubt, will be interesting. Colour has generally proved somewhat of a "bete noir" to architects in a northern atmosphere so that it may lead to further endeavors in this line, but so far any attempt beyond what is sometimes called the sombre has usually been unsuccessful, even if not verging on the disastrous. The Exhibition was to have been opened by May 1st, but the weather has been very unpropitious the last month so that the opening day has had to be postponed. A list of the chief buildings with the names of their designers is given here, as it may prove of interest to those considering a trip to the Exhibition:

Liberal Arts and Agriculture	Shepley Rutan and Coolidge.
Horticulture, Forestry and Graphic Arts..	Peabody and Stearns.
Machinery and Transportation.....	Green and Wicks.
Administration Building.....	Babb, Cook and Willard.
Mines and Ethlogy.....	George Cary.

Electric Power..... Howard, Cauldwick and Morgan.

Landscape Plan, etc Carriene and Hastings.

The board also retained the services of Mr. Carl Bitter for the sculpture and Mr. Turner for the mural paintings and decorations

These Exhibitions seem to be annual affairs now and soon we will be able to use them as Experimental Stations for our architects.

STUDENTS' DEPARTMENT.

NOTES ON CEMENT.

By J. R. GARDINER.

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The following notes on "Cement" are intended as a short synopsis of what others have said with an attempt to place them in a clear and concise manner capable of being understood by the student and not in any way as an addition to the already voluminous literature on this subject.

CEMENTS.

As cement can be considered one of the most important building materials that an architect uses and furthermore one that is being used more extensively every day it is necessary that the student of architecture should understand in outline at all events the chief distinctive characteristics as well as the mode of manufacture of the various types in order that he may use them intelligently.

The basis of all limes and cements is Carbonate of Lime and in order that lime may contain hydraulic properties it is necessary that it be chemically combined with some form of Silica—usually clay, which is a hydrated Silica of Alumina. It is largely the proportions in which these two materials are mixed that constitutes the type of cement to which it will belong. There are two heads under which cements are usually classified:—

1. NATURAL CEMENTS.
2. ARTIFICIAL CEMENTS.

Under the heading "Natural" cements is usually included all so-called Roman cements as used in England, the hydraulic limes as found in France and Belgium, and the natural rock cements used so extensively in America.

Let us first take the industry in America:—

1. THE NATURAL CEMENT INDUSTRY IN AMERICA.

Large deposits of Hydraulic Limestone, capable of producing good natural cements, are found in the United States, chiefly in New York, Maryland, Pennsylvania and Kentucky—and also in the Province of Ontario in Canada.

The natural cements produced from these limestones differ from hydraulic lime in that they do not slake at all, their bulk and temperature remaining the same during both mixing and setting. They also set very rapidly either under water or in the air. The most distinctive feature of these cements is the marked difference in the amount of magnesia they contain and they are on this account usually divided under the two headings:

1. Lime Cements or those containing from 2 to 4% of magnesia.
2. Magnesian Cements or those containing from 12 to 30% of magnesia.

The larger part by far of the deposits worked come under the latter category as they contain all the well known "Rosendale" brands. These magnesian cements set and acquire strength rather more slowly than the lime cements but eventually equal them. They do not heat on mixing with water and do not withstand frost as well as the lime cements when first mixed.

The lime cements gain their strength very rapidly but they have to be very carefully prepared as they have a tendency to heat if too rich in lime and to blow if too strong in silicates.

By the following tables it will be seen that the chemical composition of the various brands found in different parts of the country varies considerably. Great care has to be used also in the same quarry as different strata produce varied results so that analyzing has to be resorted to continually if the best results are expected.

	Rosendale.	Milwaukee.	Louisv lle.	Fort Scot.	Round Top.
Ca. O.	34.64	33.40	46.64	49.80	45.66
Mg. O.	14.82	22.60	12.00	12.20	2.80
Si. O ₂	16.48	13.80	20.40	17.60	21.70
Al ₂ O ₃	10.93	4.00	4.76	4.00	8.30
Fe ₂ O ₃	4.65	2.80	3.40	5.00	4.15
Na ₂ O + K ₂ O	1.80	2.50			
SO ₃	1.04	2.59	2.57	2.04	1.30
CO ₂ + H ₂ O	4.50	9.50	6.75	4.50	8.20
(Silicates undecomposed.)	12.40	11.20	3.74	4.20	8.00

The "Rosendale" cements, of which there are several different brands, are the best known natural cements in America. They are the standard of the magnesian variety, and form nearly half of the total production of natural cement in America. The "Round Top" is usually taken as the typical lime cement. The supply is somewhat limited, and is therefore chiefly used in its own district, supplying Washington, Baltimore and the more southerly cities. The manufacture of these cements is similar with either variety. The hydraulic limestone is usually burned in a draw kiln which contains enough stone to make from 400 to 600 barrels. The stone and coal is laid in alternate layers, and is usually drawn twice in twenty-four hours; but this depends largely on the variety of stone. It is carefully sorted, and all under-burned portions and clinkers are then removed. In the case of lime cement it is then either sprinkled with water or steamed, in order to slake any excess of lime. It then passes to the mill, where it goes through the process of being crushed and carefully ground, and in the better cements screened.

The cement is then packed in barrels, which in the Eastern States contain 300 pounds, while in the West 265 pounds is the usual standard. In regard to fineness, which in late years has been receiving a good deal of attention, both from engineers and manufacturers, the best cements are expected to pass the following test:

Residue on 200 mesh, 10 per cent.			
" 100 "	6	"	
" 50 "	2	"	

Although a large proportion of cements tested will no doubt be found to leave 20% residue (at least) on a 200 mesh. As to strength and reported tests of natural cements one is as far from arriving at a certain goal as in Portland cement testing. There are so many pitfalls one can stumble into in testing cement that one is apt to feel disheartened with the numerous tests showing almost any result one could wish. However, the following table prepared by Mr. Clarke for the Boston Main Drainage work from over 25,000 tests and made with great care to show the result of comparison between Natural and Portland cements will no doubt be of interest:

NATURAL CEMENT.

	Neat	1 cement to 1 sand	1 cement to 2 sand	1 cement to 3 sand
7 days	92	56	24	14
28 days	145	116	60	35
6 months	282	190	125	80
12 months	290	256	180	121

PORTLAND CEMENT.

	Neat	1 cement to 1 sand	1 cement to 2 sand	1 cement to 3 sand
7 days	303	160	126	95
28 days	412	225	163	140
6 months	468	347	279	198
12 months	494	387	323	257

These tests shew the average of several brands and give a fair idea of the proportional value of the two varieties.

The American Society of Civil Engineers gives the following table as approximate tests of the two cements, natural and artificial:

NATURAL CEMENT.

	Neat.	1 Cement 1 Sand.
7 days.....	60 to 100	30 to 50
28 days.....	100 to 150	50 to 80
1 year.....	300 to 400	200 to 300

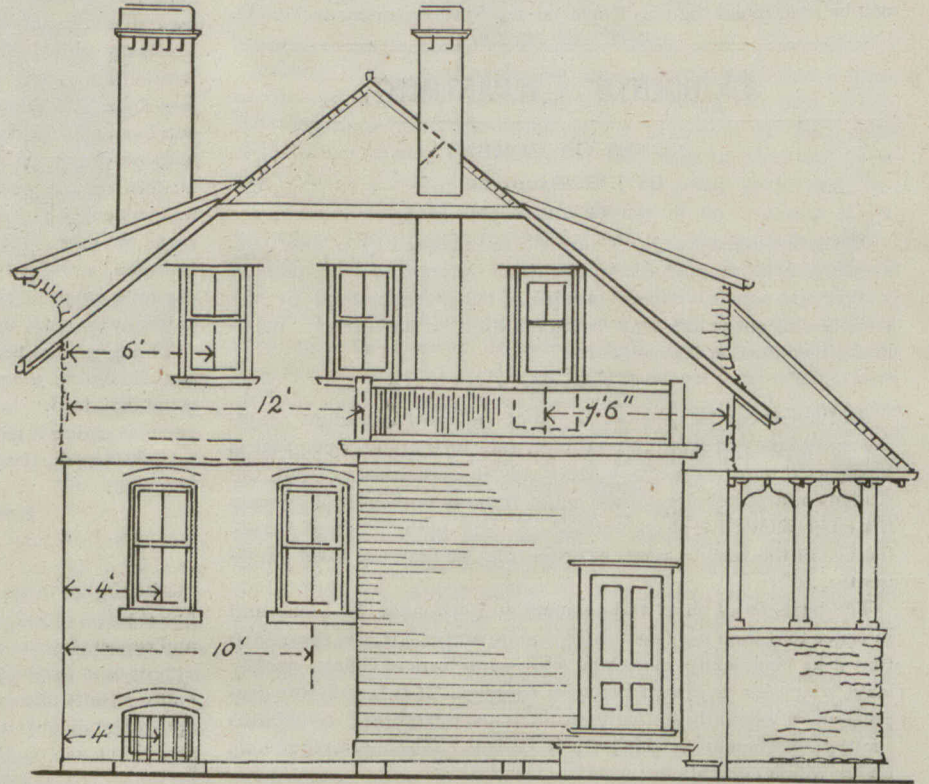
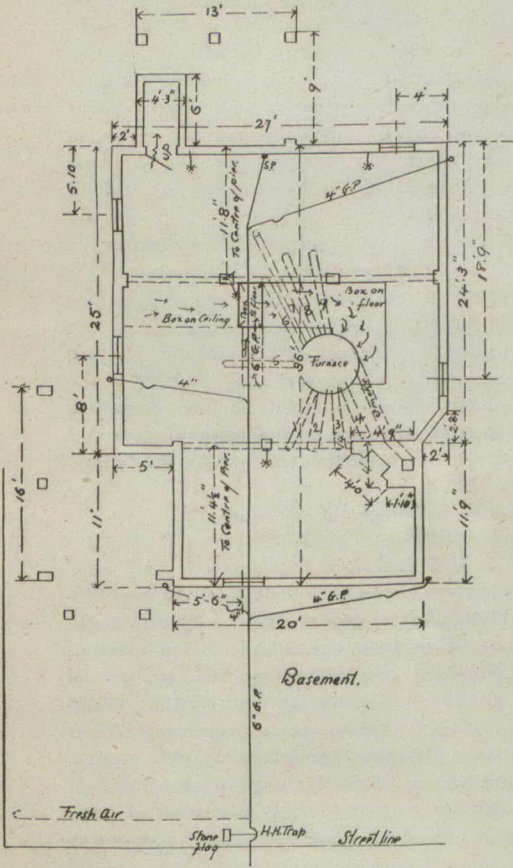
PORTLAND CEMENT.

	Neat.	1 Cement 3 Sand.
7 days.....	250 to 550	80 to 150
28 days.....	350 to 700	100 to 200
1 year.....	450 to 800	200 to 300

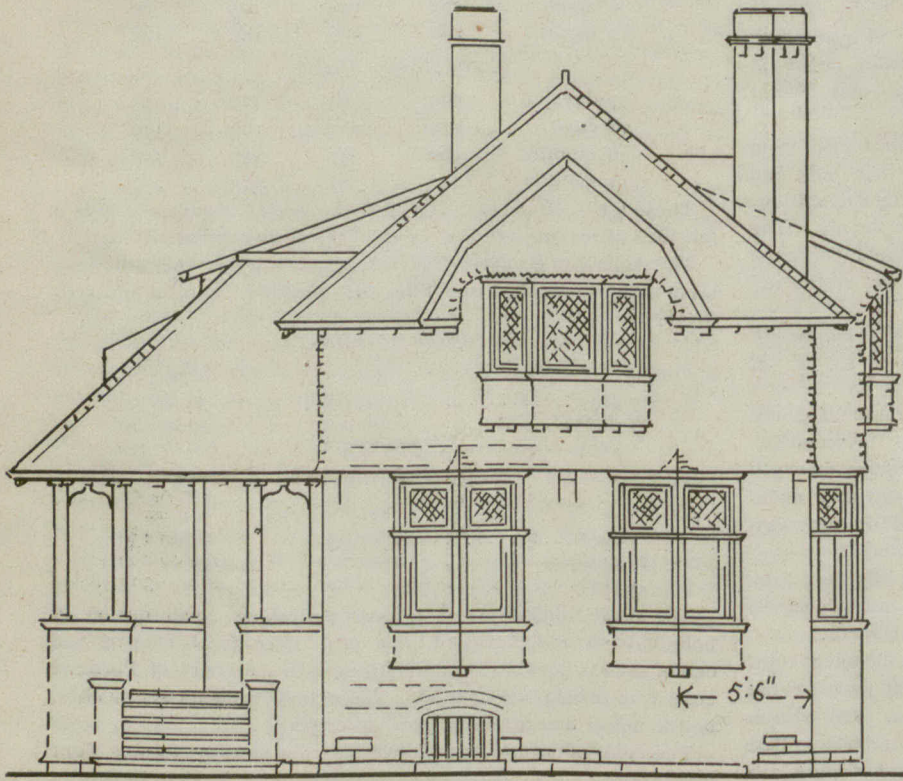
The above tables shew that, as a rule, taking equal quality in both natural and Portland, one part of natural cement and one of sand is equal in ultimate strength to one part of Portland cement to three parts of sand. The natural cements set quicker, but do not at first attain so great strength.

The color of natural cements varies considerably from a light buff through a gray resembling Portland to a darkish brown as most Rosendales. This variation in shade is due to the proportion of oxide of iron contained in the stone, and has in no way any effect on the value of the cement, although two barrels of the SAME brand of different shade would probably indicate that the lighter one was of unburned rock.

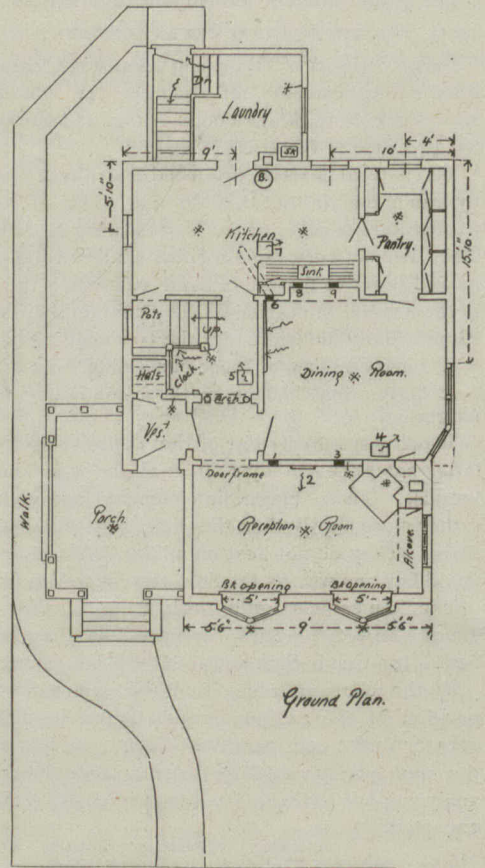
In regard to weight, the American Society of Civil Engineers in their report on cement tests, say: "The relation of the weight of cement to its tensile strength is an uncertain one. In practical work, if used alone, it is of little value as a test; while in connec-



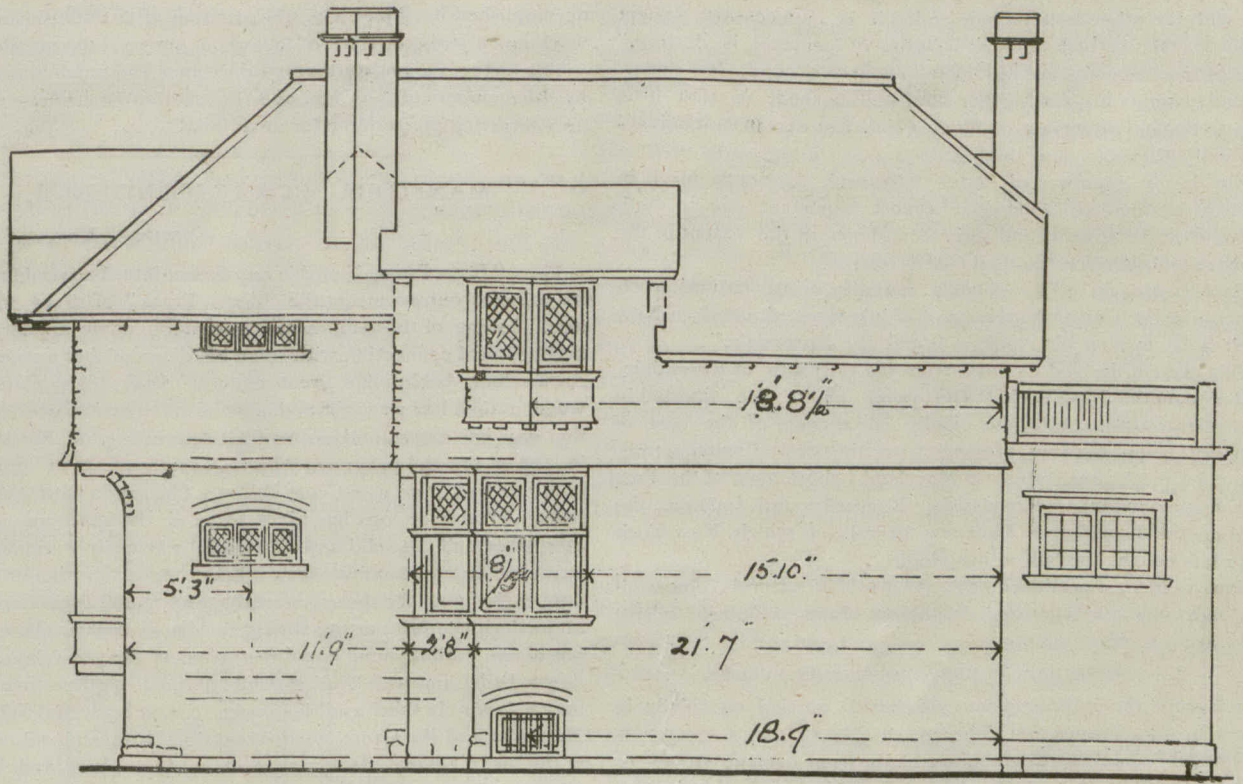
East.



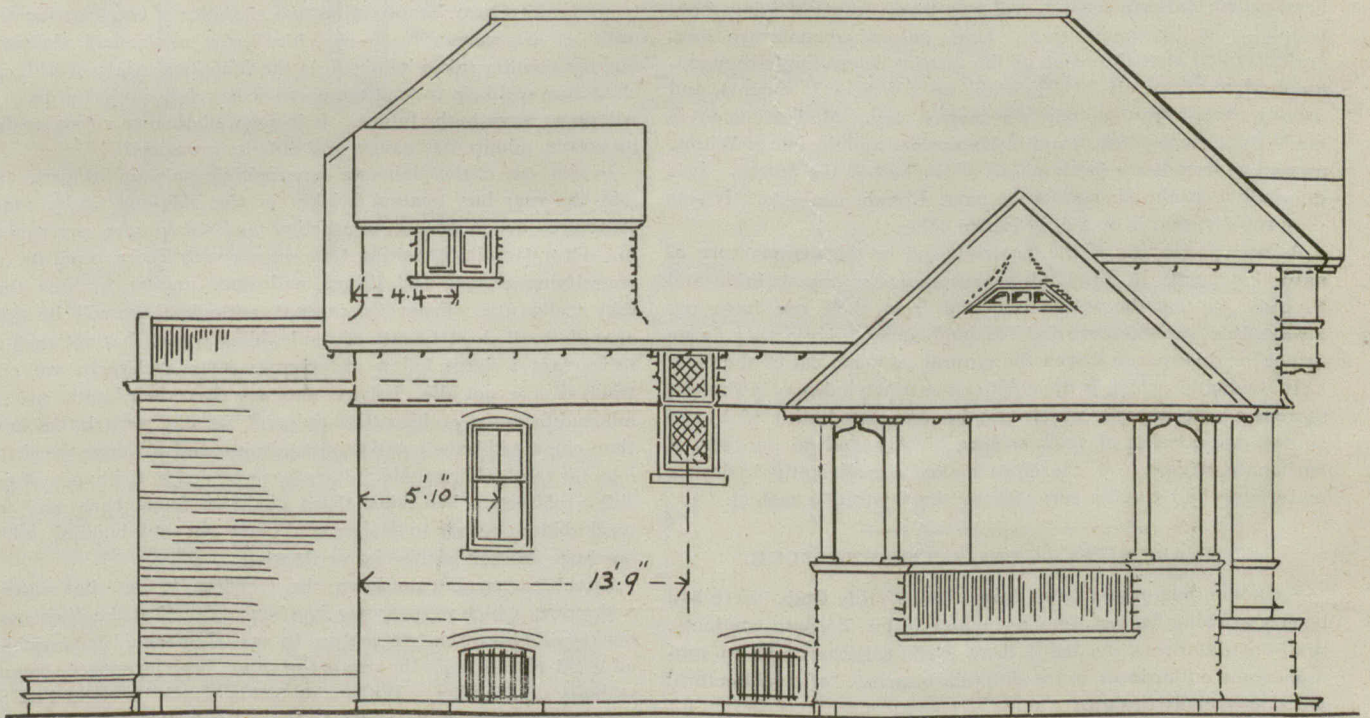
West.



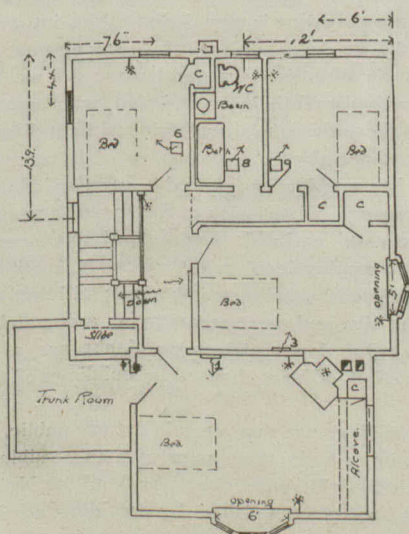
Ground Plan.



South.



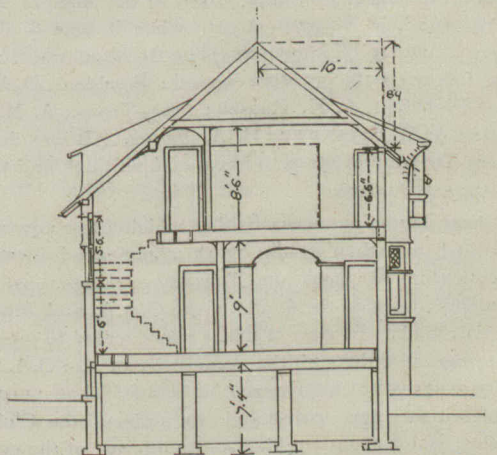
North.



First Floor.

WORKING DRAWINGS
FOR
MODERATE COST
SUBURBAN DWELLING.

R. J. Edwards & Webster,
Architects.



Section

tion with the other tests recommended it is unnecessary, except when the relative bulk of equal weights of cements is desired." Fine ground cements are lighter than coarse ground, but under-burned cements are also lighter than well burned, so that it is hard to depend on weight alone as a sure test except in conjunction with other means of testing.

The large quantity of these "Natural" cements used in America has made this material a most important one to both architect and engineer, and a cursory glance at the extent of the industry will therefore no doubt be of interest.

There were, in 1898, 76 mills manufacturing natural rock cements in the United States, 29 of which were situated in New York state, turning out chiefly a brand of "Rosendale."

This cement derived its name from the township of Rosendale, Ulster county, New York. The other plants are situated in almost every other state, due chiefly on account of the cost of shipping being high in proportion to the cost of manufacture. The chief producing states are Maryland (where most of the lime cements are made), Pennsylvania, Kentucky and Indiana, the total output being over 8,400,000 barrels, of which New York state has nearly one half to her credit.

Canada in 1900 produced 125,428 barrels of natural cement all of which was manufactured in the province of Ontario where there are 4 separate plants.

2.—THE NATURAL CEMENT INDUSTRY IN EUROPE.

In Europe the natural cement industry is carried on chiefly in Great Britain, France and Belgium.

Natural cements in England are made from cement stones or nodules found in thin strata among limestone and also in the London clay. In 1796 Mr. Parker took out a patent for what he called Roman cement, and which has for this reason sometimes been called Parker's cement, and was made from calcining these nodules from the London clay. These natural cements are generally termed after the name of the district where they are manufactured, as "Sheppy," "Harwich" or "Whitby" cements, and usually contain from 30 to 40 per cent of clay. Medina cement is made from the septaria found in Hampshire and the Isle of Wight, as well as from those dredged out of the bed of the Solent. It is generally considered superior to most Roman cements. It sets very rapidly, and is of a light brown color.

A large proportion of the material used in the manufacture of natural cements in England is unfortunately very variable and irregular, so that the results obtained from their use have not always been satisfactory, and Portland cements have to a large extent for this reason driven the natural cements out of the field.

At Boulogne, which is the chief centre of the industry in France, there is a soft deposit which can be excavated with pick and shovel, and consists of 22.6 per cent of clay and 76 per cent of carbonate of lime. It therefore makes a sufficiently hydraulic material to be termed a very slow setting hydraulic cement.

THE ARCHITECTURAL STUDENTS' CLUB.

For some time prior to the formation of this Club, there had been a growing feeling amongst many of the Toronto students, that something was needed to draw them together, and to promote some enthusiasm in the different branches of architectural work, especially design.

When, therefore, Mr. D. W. F. Nichols, who is now president of the Club, proposed its formation, he met with vigorous support from a majority of the students. On his invitation a number met on the evening of Jan. 29th, 1901, at the office of Messrs. Burke & Horwood, 28 Toronto street, when it was finally agreed to form a club to be known as "The Architectural Students' Club." The following officers were elected: President, D. W. F. Nichols; Vice-President, A. H. Russell; Sec.-Treas., A. M. Weir; Committee, J. M. Crysler and H. A. Payne. It was decided to meet every Tuesday evening to have competitions and talk over any matters of interest.

Several meetings were held at which a few new members were enrolled, but when studio work commenced it was found impracticable to meet on Tuesday evenings, as some of the students attended the studio of the O.A.A. and others that of the T.A.E. Club. In view of this it was decided to meet on Saturday evenings, and through the generosity of the O.A.A. their rooms at 96 King street west were obtained for that purpose. Several professional men consented to address the Club on different topics, which greatly added to the interest of the gatherings.

This season has been to a great extent experimental to the Club, but its officers and members feel fully satisfied that it has

accomplished its object, viz., the creating of an enthusiasm in the work and a stronger spirit of fellowship amongst the members.

The lectures given were very interesting and much appreciated by the members of the Club, and the committee expects to have an interesting programme for next fall.

MANITOBA CORRESPONDENCE.

WINNIPEG, MAY 13, 1901.

The "Free Press," of this city has of late been publishing in its columns extracts from the "Free Press" of 18 to 20 years ago. In one of these extracts the writer's name appears in an architectural connection with some buildings of that ancient time. As we look back, what great changes have taken place, what wonders time has wrought, and how the small and scattered city of that day has grown and grown till it now is a good city to dwell in, full of life and progress, where all the comforts of life may be obtained and at no great cost either. The crude store and warehouse of frame or logs has given place to the handsome and palatial shop and the solid and substantial wholesale warehouse; the small cottage or humble home without fence, garden or trees is now exchanged for the comfortable and picturesque home with all modern comforts or the stately residence rearing its well proportioned outline amid the forest trees of by-gone days, or the flower beds and well kept grounds of more modern times. We may ask why is this? and the answer comes back that Winnipeg, Manitoba and the Great North West does now, and will more so in the near future, occupy a most modern place and wield a mighty influence over the prosperity, progress and grandeur of our noble Dominion.

In this procession architecture takes a prominent place, for is not architecture beauty of outline, stability of construction and utility of arrangement? As our cities grow in size and richness, and the country takes its place in the functions of the world, architecture will help to lead the way; it has done so in the past, it will do so more in the future. Is it not well then to acknowledge its power, admire its beauty, and note its progress?

In this city of the plains we are making substantial progress, and the year has opened briskly in the building trade; many structures are in course of erection and many more are spoken of. Of a truth in the spring time we are very likely to put on our magnifying glasses and things and times appear greater than they really are. From the present outlook, there will be work enough in all departments of the building trade, but not such as to warrant a large influx of artisans. Our architects and contractors are not idle, but we may say that their hands are not full, and from the architects' standpoint we may remark that more than one could have found time to design and arrange the drawings for the buildings which have been placed in the hands of outside architects. We think there could be found here architectural ability enough to design and carry out any building which has been erected in this city or Province.

Could our architects have the freedom to use the material and money which we presume has been placed at the disposal of our outside brethren, we venture to say, they would have achieved good results from the use of the same, both as regard beauty, stability and utility. While this holds good in regard to our Canadian architects it particularly applies in the case of commissions placed in the hands of a foreign architect.

An architect from Minneapolis has designed on apartment building for which the excavation is now being taken out on McDermott avenue. While we have not a word to say against this gentleman either as an architect or a gentleman, still we think our citizens might have placed their commission with some of their fellow-citizens in the architectural profession without disadvantage to themselves or to our city.

This incident has a wider range and a greater influence than might at first appear. If we wish to foster architecture in our midst and encourage national architectural advancement, we should be ready to employ local talent where it is obtainable.

In regard to apartment buildings, we may add that there are several now in the city and there seems to be a demand for such accommodation. Our long winters no doubt are a factor in deciding the question of being housed in buildings of this character.

While these buildings are to a certain extent public, we think it should be the aim to make them as private as possible. In one instance to which we will refer, The "Avalon," on Notre Dame avenue, this has been accomplished by providing a private hall

(Continued on page 115.)

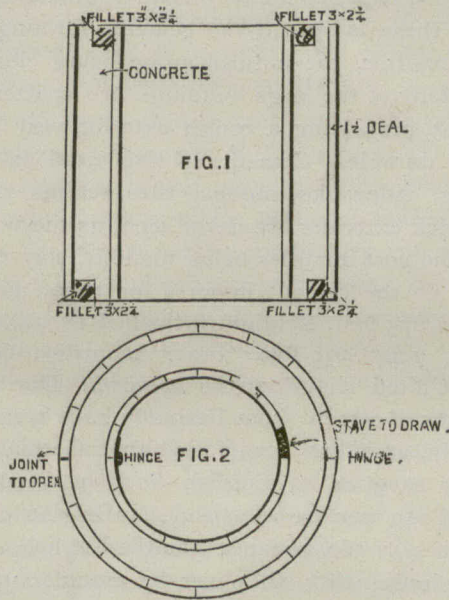
INTERCOMMUNICATION.

[Communications sent to this department must be addressed to the editor with the name and address of the sender attached not necessarily for publication. The editor does not hold himself responsible for the expressions or opinions of correspondents, but will, nevertheless, endeavor to secure correct replies to queries sent in. We do not guarantee answers to all queries, neither do we undertake to answer questions in the issue following their appearance.]

Wm. L. C. :—Wishes to know if large pipes can be made by using Portland cement either neat or mixed with sand. "I want the pipes to have socket joints, and to be not less than three feet long," he says, "and I want a large number of them of various sizes."

Ans :—Concrete pipes of large diameter are frequently made and used in England for many purposes. In one instance, at least, pipes 2 feet 6 inches in diameter are in use in one place as a flume to carry water to run a large mill. The methods of making such pipes differ, but here is one of which the writer has some knowledge.

In diagrams, figs 1 and 2, which are drawn to a scale of 1/4 inch to the foot, make moulds out of 1 1/2 pine with joints like staves of a barrel, with hardwood dowels in the joints. Make one of the staves of



the inside mould fig 2, shaded, with square joints so that it will draw out towards the hinge. Hinge it as shown; you can trace the draw out stave from the opposite side when you are filling in the concrete, so as to keep it in its place. Hinge the outside mould, also shown in fig 2, and have the mould to open on the opposite side. Nail a circular batten, shown in fig 1, 2x3 inches around the bottom of the outside mould, and another on the top of the inside mould, which will form flush sockets in the pipes leaving a half inch space for cement jointing. Let the battens be about a quarter of an inch short at the draw out stave, in order to allow the mould to close. Lock the joint of the outside mould with a couple of hooks, tack hoop iron around the outside mould, the inside will not require it. Cast the pipes standing in a large tank, for they must be left in water for at least five days. The cement or concrete used for this purpose may be composed of two parts of Portland cement, two parts clean sharp sand, and three parts of fine gravel or crushed granite, granite not to be larger than a white bean. When removed from the tank, the pipes should stand in some shady place for a week or so before they are used, they will then give good satisfaction.

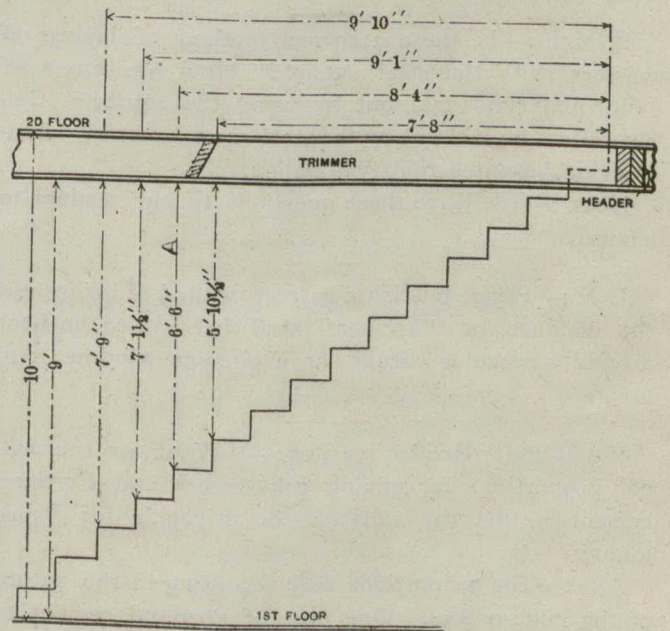
J. O. writes :—I have a sink in which the waste from the kitchen runs into a 4 inch tile pipe to a cesspit over 200 feet from the house. In that distance the pipe has a fall of nearly 15 feet. The cesspit is walled

up with dry masonry. A very disagreeable odor emanates from the sink, and it is worse in winter than in summer. I have ventilated the cesspit, and put a ventilator over the sink, but the odor still continues. Can you suggest a remedy?

Ans :—We suspect you have no trap in the waste pipe, and because of this omission, the warmth of the house in the winter increases the draft through the open sewer pipe, and thus increases a nuisance and danger that should not be tolerated under any plea. Put in a good deep trap as close under the sink as possible and as large as the waste pipe. Give it an occasional flush with hot water, and you will have no further trouble with sewer gas. If there is a good plumber in the neighborhood, it will pay you to have him examine the plumbing and to put in the trap.

Jas. D. writes :—I have a circular head door frame to put in a 9 inch wall, the jambs of which are splayed outwards. The head is to be splayed in the same manner; how can I lay out the head piece?

F. H. :—Answering a "young carpenter," in your last issue, I would say that the best thing for him to do is, to obtain one of the cheap works on stairbuilding, where he will find all his questions answered, and many other things about stairbuilding that he ought to know. I would especially recommend "Stairbuilding Made Easy" price \$1.00, which I presume can be got at the office of THE CANADIAN ARCHITECT AND



BUILDER. It would take up more space I am afraid than the Editor would permit me to occupy, to give a full answer to "a young carpenter," so I will confine myself to describing the way to find out where to place the headers and trimmers to give sufficient head-room. When possible, there should not be less than 6 feet 6 inches between the tread and the back trimmer, though I am aware that sometimes the stairbuilder is compelled to move his trimmer over the well-hole to meet conditions on the second floor, but, when this can be avoided, it always should be. Sometimes, the trimmer is canted to give a little more head-room as shown in diagram, fig 3, but after all, this is only an expedient, and should be avoided. The diagram shows a stair rising for a 9 foot ceiling, which makes 10 feet, from top of lower floor to top of second floor. This requires 16 risers, each of which will be 7 1/2 inches high. The treads will

be 9 inches wide. To find the point to place the cross-trimmer, go up 3 risers, at which point there is 7 feet 9 inches from top of tread to ceiling. If we go up another riser we get 7 feet, 1½ inches and if we measure from the fifth tread, we get 6 feet 6 inches, as shown at A, A. This should be the limit, but, as said before, it is sometimes necessary to take in another riser. This, I think, will meet "young carpenter's" requirement. If the Editor will permit, I will gladly answer all the other questions at length, asked by our young friend.

N. P. K. wishes to get a receipt for taking off varnish from furniture and woodwork without burning it off.

ANS:—Use a solution of about 3 pounds common washing soda to a gallon of water. Apply this to the work with a common paint brush, and after allowing it to stand for a short time, the varnish should be scrubbed off with an ordinary stiff scrubbing brush. If all does not come off, apply the soda solution again, making it hot before application.

R. V. W.:—Wants to know the proper height to set up a kitchen sink.

ANS:—The usual height for a kitchen sink is 2 feet 6 inches from the floor to the rim of the sink, and when there is a drip-board, there will be about 7-8 of an inch cap around the sink, which mitres into the drip-board. The sink should have a slight inclination towards the waste outlet, so that it may drain clean.

P. McF:—Is there a correct method of laying off degrees with the steel square? How are bases of "unequal run" laid out by using the square? Can hip-rafters be laid out by the steel-square alone? Answers to these questions will oblige.

NOTE:—We leave these questions to our readers to answer.

J. N:—Please publish a correct method of laying out the distance for "kerfing" stuff that has to be bent around a circular corner, or a circular window, and oblige.

"A Regular Reader" writes:—"What are the proper proportions for mixing coke-breeze and Portland cement so that the nails can be driven in for fixing jointry?"

ANS:—The proportions vary according to the nature of the coke-breeze. One part of Portland cement to five of hard breeze, and one part of Portland cement to seven of a soft breeze giving good results. If there is time for the mass to set before being moved from the moulds the addition of an extra two parts of breeze, soft or hard, may be safely used. The breeze should be crushed before use.

A NEW PORTLAND CEMENT MANUFACTORY.

The new company recently organized to establish cement manufacturing works at Durham, Ont., is about to begin the construction of its works. Several of the directors are connected with the Peninsular Portland Cement Co., of Jackson, Mich., which is said to have one of the most perfectly equipped factories in the world. It is claimed that at this factory the materials are entirely handled by automatic appliances from the point where the marl and clay are dug out of the

ground to the turning out of the finished cement. The works to be erected at Durham will be planned on similar lines, with the object of reducing to the finest possible point the cost of production.

CEMENT IN SOUTH AFRICA.

United States Consul-General J. G. Stowe writes from Cape Town:—"No country is a better customer for cement than South Africa. The public buildings, warehouses, stores, and residences are built of brick, cemented on the outside. No wood, or frame houses are seen. The expert Malays, the masons in this country, are adepts in producing very pleasing effects with cement in the outside finish of buildings. The bricks used in South Africa are two-sevenths larger than the American bricks, and are laid up principally with "mud," the inferior clay found here, instead of mortar (lime) or cement. Over the whole surface cement is laid. Bricks of different shapes form the window sills, caps, columns, pilasters, mouldings, &c., and over these is spread the cement, forming a very pleasing exterior, the natural stone being closely imitated. Many of the large buildings are spattered with the cement, presenting a rough exterior very striking, and even durable. Cement is also used in making drainpipes, sidewalks, stoops, tiles, chimney-pots or tops. Brick exteriors are never seen, as the bricks are inferior, the best qualities being made of clay and coal cinders. Of the cement imports for 1899, amounting to 126,672,875 lbs., Belgium furnished 18,423,628 lbs.; Germany, 7,448,395 lbs.; other countries, 605 lbs.; and the United Kingdom the balance. During 1900, the imports of cement from Germany have been increasing rapidly, as it has been found that German cement is equally as good as English Portland, and can be bought at 24c. per barrel cheaper. Belgian cement is good, and sells 36c. cheaper than the English. Cement of the desired quality will never be manufactured here, as the ingredients do not exist.

USEFUL HINTS FOR THE PAINTER.

A stencil, to work effectively, must be kept in such condition as to be soft and pliable, so that when you come on to it with your brush or roller it gives under the pressure, let that pressure be ever so light, clings close to the wall and allows no colour to run in under the edges.

The prevailing fashion for white ceilings may be attributed to the result of a superstition that they look higher from being white; but all colours are relative, and a light tinted ceiling entering into the general scheme of colour looks far more comfortable than the unsympathetic white.

To know what is being done, the way to do it, and the probable destiny of the product he is using, is to the painter one half the battle. Too much attention cannot be given to the causes of the many little troubles that confront the painter from time to time, particularly in varnishing.

Messrs. Gordon & Helliwell, architects, have removed their offices from the third to the fifth floor of the Confederation Life Building, Toronto.

Effective advertising is the kind that is always fresh and interesting. If there are several things to talk about, talk about one at a time, and talk about it so that it will make an impression. Don't say the same old things over and over in the same old way.

SETTING-OUT WORK AND BUILDING

BY-LAWS.*

BY J. BARTLETT, M.S.A.

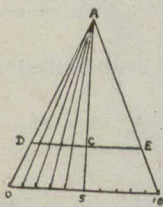
Passing to the general building plans with which you will no doubt have more to do than with survey plans, we find that for general building purposes the scales mostly used are in contract plans, sections, and elevations either a scale of 8 ft. to 1 in. or 4 ft. to 1 in., while for details we have as a general detail 1/2 in. to a foot and 1 in. to a foot. These scales have been found to best meet the several requirements, and are most generally used in practice. With the 1/8 inch scale, which is mostly in use, it is not possible to show the internal finishing of the building to the extent of the 1/4 in. scale, but we have for these purposes the specification and the enlarged details to supply the information required. Every set of plans should have a sufficiency of sections.

The War Office adopt as general scales for building plans the scales of 1-5 in. and 1-10 in. to a foot. These scales are very small and do not allow so much detail to be shown as the 1/8 in. and 1/4 in. scales adopted by the profession outside their influence.

With the great strides lately taken by photography and lithography you may find it necessary to produce a scale by which to read plans prepared by these processes. In the case of photography, with a knowledge of perspective drawing it will be possible for you to find the centre of vision and produce some object in the picture to the edge of the picture plane and thus obtain a definite measurement. Or the presence of brickwork will enable you, by counting the courses, to obtain the heights and lengths.

In the case of plans reduced by lithography the scale may be arrived at by reducing in the same way as you can produce a 1/10th inch scale from a 1/8 inch. The most accurate method is as follows:—

Set up to any scale larger than the plan to be dealt with a length of, say, 10 feet, shown on the accompanying illustration as 0 to 10. At right angles to this from its centre produce a line to any point A: join A to 0 and 10. Take from the litho plan for which the scale has to be prepared the length of any portion which should scale 10 feet. Divide it into two equal parts, and



from the line A 5 at C erect the parts at right angles to A 5, so that the distance DE is equal to the 10 feet on plan. Produce from the points 1 to 10 respectively lines to the point A, cutting the line DE, which is now equally divided and can be increased to prepare the scale required.

Next, your scale, if of feet, should have a section of 10 at the left hand side divided up to assist in measuring uneven lengths, or when the scale is a building one and is dealing with feet and inches it should have a similar length, namely 1 foot with the division of inches.

A word or two as to the coloring of plans. Drawings should show by their grades of color the several parts that are in section, plan or elevation. The tints should graduate alike as regards density of color, work in section being darkest; plan or horizontal section a tone lighter; elevation very light. It is misleading on small scale plans (as 1/8 in. and 1/4 in.) to make distinction of colors in woodwork for one wood as against another.

*From a paper read at Carpenters' Hall, London.

Drawings of old work should be shown in black to the walls, but the floors should not be colored.

CALCULATION OF AREAS AND CUBIC SPACE.

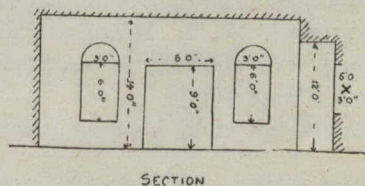
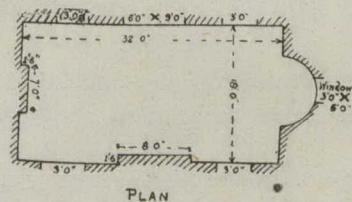
We will now take a simple example and work out:— (1) area of floor; (2) area of straight walls without windows; (3) area of circular walls; (4) cube of room.

Area of floor:—

Ft. in.		
32.0		
18.0		
<hr/>		576.0 main floor.
1/2 / (10.0)		
	39.3 bay.	
	615.3	615.3
8.0		22.6
1.8	12.0 deduct.	592.9 ft. super
7.0		
1.6	10.6	
<hr/>		22.6

On walls:—

Ft. in.		
106.9		
14.0		
<hr/>		1,484.0 walls.
10.0		32.0
12.0		32.0
<hr/>		18.0
6.0	12.0 deduct bay.	1.6
9.0		1.6
<hr/>		1.6
4 / 3.0	54.0 deduct door.	1.6
6.0		16.0
<hr/>		72.0 part W.
4 / 1/2 / (3.0)		
	14.2	1,484.0
	26.0	260.2
<hr/>		Feet 1,223.10 on walls



Circular walls:—Circumference of 10 ft. circle = 31.416; 1/2 = 15.708.

15.708	
12.0	ft. in.
<hr/>	
	= 188.6 wall = 188.498
3.0	
6.0	
<hr/>	
	18.0 deduct.
<hr/>	
	170.6 super

Cubical contents:—

Area of main floor = 576.0
less 22.6
<hr/>
553.6

1.0	
553.6	
14.0	
<hr/>	
	7,749.0 cube of main room

1.0	
39.3	
12.0	
<hr/>	
	471.0 cube of bay.
<hr/>	
	8,220.0 feet cube.

Cubic feet of space per head.

London Board School.....	130
Board School (Educational Dept.).....	80
Common Lodging-Houses ".....	300 to 400
Army Permanent Barracks ".....	600
Prisons with separate cells ".....	800
Army Hospital Wards (per bed).....	1,200
Stables, open-roofed (per horse).....	1,200
Stables, with men over ".....	1,300
Army Infant Schools (per seat).....	96
Army Chapel Schools (per seat).....	200

In the setting-out of works it is essential that proper projection be left on the several walls for the footings.

Where works are set out on vacant land it becomes necessary to have a good square.

Next be careful to level up to some recognized point as the ground-floor level, and fix it in some convenient point or points from which the level may be checked. It is advisable to have a second point, as when the building is kept waiting for stonework the work is often carried up, and so the levels are inaccurate.

A storey rod should be kept and on it should be marked, on one side, the main projections, sills, cornices, &c., while on the other should be the courses of brickwork. In laying the concrete for the trenches the level of the top should be indicated with pegs carefully levelled. The footings are often a source of trouble, owing to the bricks being rougher, and so putting levels out. The position of the top of the damp course should be marked on the storey rod, and no work should be allowed to proceed beyond that level until it has been thoroughly checked as to its levels. In large works a dumpy level on tripod is used, but in ordinary works the straight-edge and hand level are sufficient. A good foreman when upon the works will readily detect any work out of the perpendicular or laid to improper levels, as when the building is in carcase nothing is easier than to range the lines of brickwork with timbers, and the lines of one opening with another.

NATIONAL PLUMBERS' ASSOCIATION OF CANADA.

The dates selected for the annual convention in Toronto of the above association are June 26th, 27th and 28th.

A committee to make the necessary arrangements for the meeting has been appointed, consisting of H. Hogarth (chairman), W. S. McGuire, K. J. Allison, James Wilson, J. E. Fullerton, James Sherlock, Alex. Purdy and Geo. Clapperton.

A profitable and enjoyable meeting is anticipated.

NEW AGREEMENT GOVERNING BUILDING IN WINNIPEG.

The following important agreement has recently been signed at Winnipeg :

1. Articles of agreement between the Masons Builders' Exchange and Journeymen Bricklayers' and Masons' International Union No. 1 of Manitoba.
2. In the following M. B. E. will refer to the Masons Builders' Exchange and the B. & M. I. U. will refer to the Journeymen Bricklayers' and Masons' International Union No. 1 of Manitoba.
3. There shall be a permanent committee of three members of each organization hereto, five to form a quorum, to be known as the Conference Committee of the M. B. E. of Winnipeg, Manitoba, and the B. & M. I. U. No. 1 of Manitoba, to whom all matters of dispute arising between the parties hereto shall be referred for settlement and their decision shall be binding on both organizations. The committee shall have power, if in their judgment it is necessary, to compel any member who is a party hereto to make affidavit.
4. All expenses of the Conference Committee shall be borne equally by both organizations.
5. The Conference Committee shall meet at the call of either party to this agreement, but a yearly meeting shall be held the last week of January, at which time changes in this agreement shall be considered.
6. All members of the B. & M. I. U. No. 1 of Manitoba, who desire to do contracting in this city, hereby agree to become members of the M. B. E., and contractors returning to journeymen's work also agree to join the B. & M. I. U. No. 1 of Manitoba.
7. The minimum rate of wages shall be fifty cents per hour, payable every two weeks not later than Tuesday and before 5 o'clock p.m. When a journeyman is discharged at completion of

the job (when the contractor has no more work), he shall receive his pay in full forthwith, and also if he is laid off more than one day he shall receive his pay if he demands it, except when lay off is caused by bad weather.

8. Any member of the M. B. E. offering to pay or paying less than the minimum rate of wages shall be fined not less than \$25 by the Exchange for each offence. Any member of the B. & M. I. U. No. 1 of Manitoba offering to work for less than the minimum rate of wages shall be fined not less than \$10 for each offence.

9. No strike shall be ordered on the work of any Master Builder signing this agreement, nor shall any number of men leave his employ before the matter in dispute shall first be brought before the Joint Arbitration Committee for settlement.

10. That no laborer is allowed to set brick upon the wall or do any mason work in any way, shape or manner.

11. No Shop Steward shall be discharged for examining the cards or permits of the members of B. & M. I. U. No. 1 of Manitoba when they begin to work or at any time when in his judgment it is necessary, but as far as possible without inconvenience to the employer; nor will the business agent be interfered with when visiting any building under construction after conferring with the contractor or his foreman.

12. It is agreed that the members of the B. & M. I. U. No. 1 of Manitoba will use only material supplied by those supply men who are affiliated with the Masons Builders' Exchange, this not to apply to city quarry stone.

13. Supply men who desire to do contracting shall be allowed to do so, provided they employ members of the B. & M. I. U. and otherwise comply with the rules governing the Masons Builders Exchange.

14. Neither party to this agreement shall be allowed to take or work on any sub-contract.

NOTE.—Sub-contracting to be understood as tendering on work after the work has been awarded.

15. All applications for membership in the Masons Builders' Exchange shall be referred to the Conference Committee before action is taken on same, and the Secretary of the Masons Builders' Exchange shall notify the secretary of the Conference Committee of the applications in the above-named Exchange.

16. Should any member or members of the B. & M. I. U. No. 1 of Manitoba take a contract to exceed one hundred dollars, including material used in said contract, he will be requested to take a withdrawal card from this union, and should he wish to be reinstated, his application shall be referred to the Joint Arbitration Committee and, if satisfactory, he will be accepted.

17. All shoddy stone, whether local or imported, must be dressed by union men, and no brick will be laid on walls built by non-union men.

18. All hammered and joint-out shoddy shall be controlled by members of the B. & M. I. U.

19. No member of this Union shall be allowed to work on any brick or mason work done by scab or non-union men unless settled satisfactorily to the Union.

20. Except in cases of extreme necessity no work shall be done between the hours of 5 o'clock p.m. and 7 o'clock a.m. All work done between 4 o'clock p.m. on Saturday and 7 o'clock a.m. Monday, and on the following holidays: Labor Day and Christmas, shall be paid for at double time. All work done between 5 o'clock p.m. and 7 o'clock a.m. on all other days of the week shall be paid for at time and half time. Working on Labor Day is strictly prohibited.

21. No member of the Bricklayers' and Masons' Union will be allowed to work for any contractor that refuses to become a member of the Mason Builders' Exchange, this not to apply to corporation or municipal work, or where a man is building for himself.

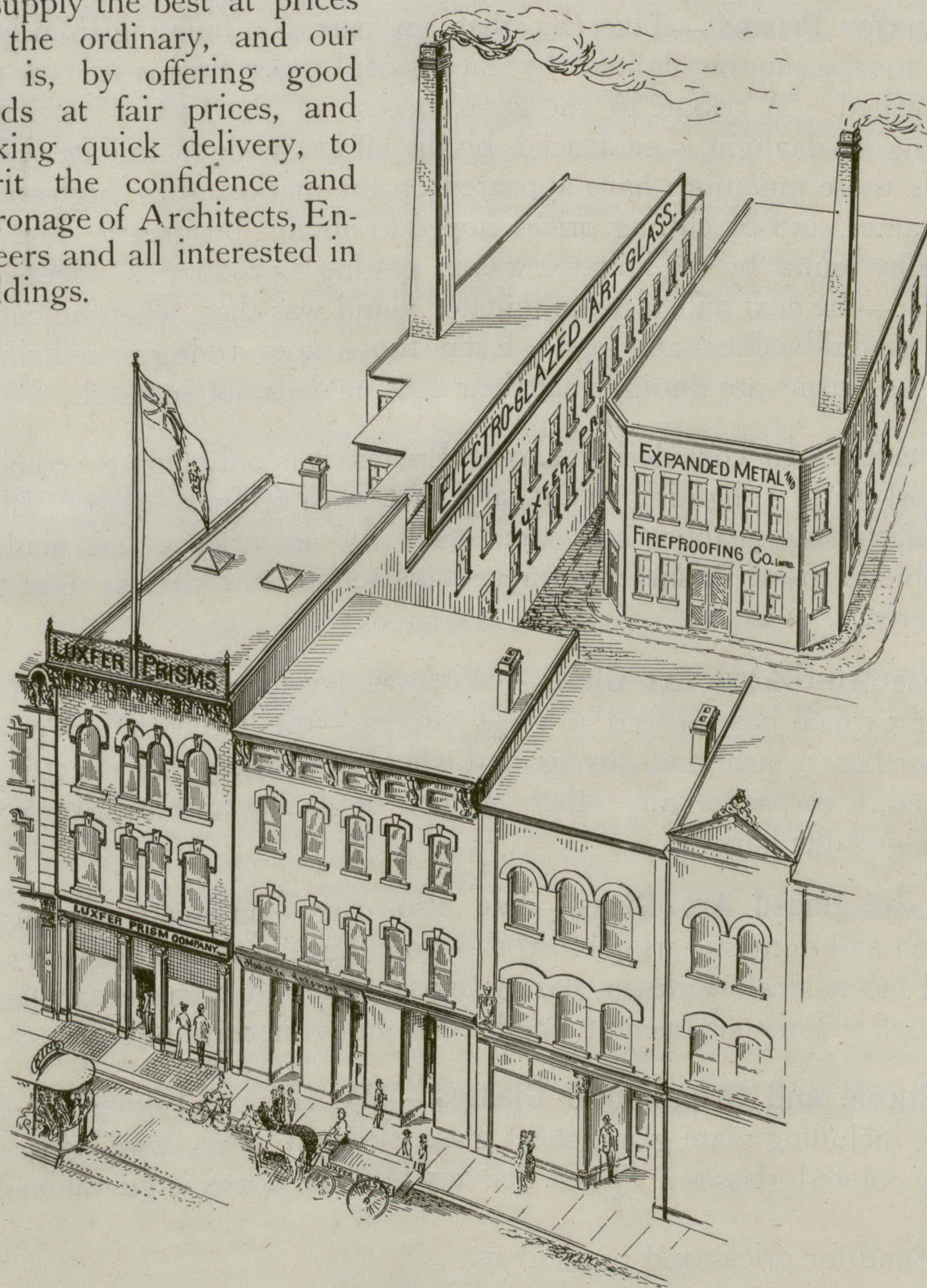
22. It is hereby understood that each and all parties to this agreement shall report to their respective bodies any known violation of any article in this agreement.

QUARRIES OF THE PTOLEMIES.

The stone for the great dam across the Nile at Assuan is being obtained from the quarries of which the temples of Philæ are believed to have been built—the unhappy Philæ which, when the dam is completed, will be submerged and partly disappear from sight for the first time in its 3,000 years of existence. The granite blocks that are being quarried for this, the first great engineering achievement of the twentieth century, bear the marks of wedges used 30 centuries ago.

LUXFER SUPPLEMENT.

In all lines we are able to supply the best at prices of the ordinary, and our aim is, by offering good goods at fair prices, and making quick delivery, to merit the confidence and patronage of Architects, Engineers and all interested in buildings.



HEAD OFFICE AND WORKS :

LUXFER PRISM COMPANY, LIMITED,
 98-100 KING STREET WEST,
 TORONTO.

LUXFER SUPPLEMENT

Luxfer Prisms.—The fact that any part of a building from basement to attic can be lighted by means of Luxfer Prisms is now well established. A tribute to the great success of the Luxfer device for lighting by daylight is evidenced by the efforts made to imitate. One by one these imitations have appeared on the market, with high sounding names, and by cutting prices hoped to obtain business. The first difficulty found by the imitator was in getting a product as effective as Luxfer—the next difficulty the imitator found was that when he cut the price he did business at a loss. Even those now trying to sell ribbed plate as prisms are finding that their scheme does not succeed.

Prices.—In considering Luxfer Prisms it is only fair to compare the cost with a lighting plant and not with ordinary glass. Better manufacturing facilities and the result of experience has made it possible to instal Prisms with more satisfaction and at less cost than formerly.

Electro-Glazed Art Glass.—We have developed a new system of glazing which has proved a great success—the electrically deposited copper bar is neat and strong and where the heavy bar effect is not wanted, it surpasses any other system of glazing and is cheaper than other metallic bars.

Lead-glazed Art Glass.—We also carry on lead glazing for church and domestic art glass work—good taste in selecting glasses and good mechanical work in glazing must result in a more satisfactory product. This has been attained without any increase of cost.

Staple and Ornamental Glasses.—We carry full lines of stock glass, including plate glass, sheet glass, skylight glass, wire glass and fancy colored glasses. Quick delivery at close prices is guaranteed.

Send for prices and particulars.

Luxfer Prism Company, Limited

98-100 KING STREET WEST,

Toronto

LUXFER SUPPLEMENT

Architectural Terra Cotta.—As a building material, Terra Cotta dates back to the early centuries, but it is only in modern times that color effects, artistic modelling and the other elements have been commercialized and developed so as to give Terra Cotta the prominent position it now holds as a staple building material. Where ornate work is required, the cost of stone is practically prohibitive, whereas Terra Cotta is as permanent as stone and in both appearance and utility it is the equal of stone. Terra Cotta has the one most important advantage, it is infinitely cheaper than stone.

Samples of the best Terra Cotta products on exhibition.

Pressed Brick.—Like Terra Cotta, the manufacture of Brick comes down from the Ancients. It is, however, only recently that perfect machinery, scientific knowledge of clays and burning has made it possible to produce the perfect article now on the market. The essential for a first-class Pressed Brick is primarily—the right quality of clay. This, with up-to-date plant and skilled workmen, will produce the highest standard of Brick.

Samples of these on exhibition at prices of ordinary brick.

Ornamental Iron.—Artistic work in metal is coming more and more in demand for modern commercial and public buildings. In all kinds of ornamental iron for stair work, railings, etc., we show very fine specimens. Machinery and brains have reduced the cost of producing really artistic work so that it can be introduced in all classes of buildings.

Samples of different classes of metal work on exhibition.

Mica Boiler Covering.—The science of economizing heat has led to the scientific investigation of different classes of materials to ascertain which is the most perfect nonconductor of heat or cold. Probably the most thorough test to which materials are put are those employed by the British Admiralty. Mica Pipe and Boiler Covering has been thoroughly tested, and as an evidence of it having proved superior to all other materials, the British Admiralty have adopted Mica covering as its standard covering. In commercial buildings Mica Covering has proved a success, both on heating plants and refrigerating plants. For brine pipes no other material has been found to stand, and in every way Mica has proved to be the very best insulating material in the market, and is the only covering that can be guaranteed to remain dry and sound on refrigerating pipes.

SAMPLES ON EXHIBITION.

Marble Mosaics.—For a permanent, clean and in every way satisfactory floor, nothing can equal Marble Mosaic when properly put down. All porcelain tile devices have their defects—the chief being the difficulty of getting sufficient adhesion between the tile and cement. Marble Mosaic in its different standard forms, viz :—Roman Mosaic, Irregular Roman Mosaic, and Terrazzo, are, each in its place, a perfect floor. On a proper concrete bed, reinforced with Expanded Metal, and when put down by skilled labor, a Mosaic floor will positively not crack.

SAMPLES ON EXHIBITION.

SPECIAL SALES AGENTS:

Luxfer Prism Company, Limited

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LUXFER SUPPLEMENT

Expanded Metal.—It is safe to say that no material has met with such general approval as Expanded Metal. It comes on the market just at the time when concrete is claiming recognition in every branch of structural work. A concrete slab is very strong in compression, but lacks tensile strength. Expanded Metal cures this defect, and concrete reinforced with Expanded Metal is destined to be a standard material in all building and engineering works. An eminent scientist has said: "The twentieth century will be known as the concrete age, just as the nineteenth century is known as the steel age."

Fireproof Construction.—Expanded Metal and Cinder Concrete makes a fireproof floor, having in it four most important points of excellence, viz.: minimum dead load, maximum strength, minimum cost, and maximum fire resistance. Because of the economy in the construction of Expanded Metal and concrete floors, from the fact that the dead weight of floor is less than any other construction, it can readily be seen that there is a saving in the cost of a building in foundations, steel work and walls. The saving in insurance will soon pay for the extra cost of fireproofing.

No Longer Experimental.—Expanded Metal fireproof construction has been used for several years in the United States, England, Germany, France and other countries. In Canada it has been on the market about two years, and in that short time, so patent are its advantages, the following leading buildings have been fireproofed with Expanded Metal and cinder concrete: La Presse Building, Greenshields' Dry Goods Warehouse, Birk & Son, Jewellery Factory, Guaranteed Milk Co. Dairy Works, Redpath Library, C. P. R. Telegraph Building, Dominion Oilcloth Co. Factory, Dominion Transport Co. Stables, and several others in Montreal. National Trust Co. Building, Sunlight Soap Co. Factory, City Dairy Co. Factory, T. Eaton Co. Warehouse, and others in Toronto. Wood's Dry Goods Warehouse, Conroy Power House, E. B. Eddy Co. Paper Mills, Ottawa Dairy Company, Bronson Co. Buildings, and others in Ottawa. Clarified Milk Co. Factory, Kingston, Sanitary Dairy Co. Factory, London, Lake Superior Power Co.'s Office Building, Sault Ste. Marie, Ont., and several other buildings throughout the country.

Expanded Metal Lath.—Since the introduction of Expanded Metal Lath on this market, it has met with the unqualified approval of architects and plasterers. This is proved by the fact that although less than three years on the market, there is more Expanded Metal Lath used than all other metal lath put together. The excellence of the key, the facility with which the lath is put up, and the facility with which the plaster is put on, all combine to make Expanded Metal Lath the best metal lath on the market.

The following may be mentioned amongst the many buildings in which Expanded Metal Lath has been used:

Government Buildings

Militia Stores Building, Ottawa.
 Custom House and Post Office, New Westminster.
 Custom House, Hull.
 Custom House, Picton.
 Custom House, Brockville.
 Armory and Drill Hall, Sarnia.
 Armory, Kingston.
 Armory, Woodstock.

Commercial Buildings

Canadian Pacific Telegraph Building, Montreal.
 La Presse Building, Montreal.
 National Trust Building, Toronto.
 Sunlight Soap Co.'s Offices, Toronto.
 E. B. Eddy Mfg. Co.'s Buildings, Ottawa.
 Capital Power Co.'s Building, Ottawa.
 Lake Superior Power Co.'s Offices, Sault Ste. Marie.
 Dominion Iron & Steel Co.'s Building, Sydney.

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The Latest Improvement in Plaster Work.

Pulp Plaster.—There have been many Patent Plasters put on the market of late years—all having some merit—but none have met the full requirements until the production of Elastic Pulp Plaster.

In Elastic Pulp Plaster, a distinct innovation is established. Sand and lime are completely abandoned and a compound is produced composed largely of wood pulp, combined with cements and other plastic materials, which has many advantages over the common sand and lime plaster.

In its production, the plastic art is brought abreast of the advances in other departments of the building trade, and we feel confident that this will be appreciated by the public generally and that Elastic Pulp Plaster will soon become known as superior to all the other plasters in use.

ARCHITECTS specify it

Because it is quick-drying, light in weight, and will not crack or crumble.

Because it has no lime or acid to destroy the color in paper, paint or kalsomine.

Because it is waterproof and fireproof and a deadener of sound.

CONTRACTORS use it

Because it works cool, spreads freely and can be trowelled smooth for papering or coloring in ONE COAT.

Because it adheres equally well to brick, stone, metal or wood lath.

Because it is tough and elastic, and needs only very small key to hold to the lath.

Because it can be used in cold weather without damage by frost in green state.

Because they can save HALF THE COST OF LABOR, as compared with ordinary plastering.

Because it will cover 140 to 160 yards per ton.

OWNERS want it

Because it makes a dense, hard wall, that will not crack, crumble or discolor.

Because it is a perfect insulator and prevents escape of heat through the walls, saving one-third of the fuel to heat a building.

Because paper or paint can be applied immediately without damage to colors.

A factory for the manufacture of Pulp Plaster has been established in Toronto with a first class equipment of machinery and appliances for compounding.

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ADVERTISEMENTS.

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EDITOR'S ANNOUNCEMENTS.

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

Subscribers who may change their address should give prompt notice of same. In doing so, give both old and new address. Notify the publishers of any irregularity in delivery.

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LEGAL.

J. and C. Low, contractors and builders, of Ottawa, were defendants in an interesting action, in which judgment has been given. Defendants had the contract to build a summer cottage on Rabbit Island in the St. Lawrence last summer. They sub-let the contract for plumbing to King & Burnette, of Lansdowne, for \$500. The cottage was destroyed by fire when almost completed. The sub-contractor sued the contractors for \$488, claiming that amount of work was done when the cottage was destroyed. They were allowed this amount by the Jury at the Brockville Assizes. Chancellor Boyd reserved judgment on a legal point raised by defendants' counsel. He however, gave judgment in favor of plaintiff.

WHERE DOES A BUILDING BEGIN?—An exceedingly novel point under the Workmen's Compensation Act was raised before Judge Parry at Manchester County Court. Christopher M'Grath, while bricksetting on a warehouse that was being erected by Messrs. Neill and Sons, was thrown from the second story to the basement by a plank suddenly tilting up. He therefore claimed damages for injuries sustained. The question at issue was one as to whether the height of the building should be calculated from the street level or from the level of the cellar. It was argued that if the street level were to be taken the 30 feet required by the Act would not be obtained, and the action could not succeed. Judge Parry expressed his opinion that the only way of measuring was to begin at the bottom of the brick, inasmuch as a builder began at the bottom, whether it was above or below the street level. As the point, however, was a very important one, he would reserve his decision.

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MANITOBA CORRESPONDENCE.

(Continued from page 104.)

to each set of rooms leading from the main entrance hall, so that when the hall door is closed the suite is quite shut off from the rest of the building. The question of good ventilation and plenty of sunlight are matters which the designers of such buildings should well consider. Disease may lurk more in structures of this kind than in private houses if the question of sanitation, light and air is not well considered and provided for in the construction.

An attempt was made some time ago to form an architectural association here but for one cause or another it fell through. An association of this kind is much needed and might be made very useful. We can all learn very much from one another and a general rubbing up of ideas at monthly or other meetings would do any of us good and add much to our usefulness. One thing we might consider is that there should be some standard by which any one desiring to practice as an architect could or should be measured.

Some contractors are in the habit of drawing sketches or getting plans and then offering to put up the buildings. This is a bad practice, and as a rule it leads to a poor class of buildings (architecturally speaking) being erected, and is a loss to the legitimate architect who would be commissioned in most cases to

prepare the plans and superintend the work. We have known cases where buildings designed by an architect have been almost duplicated in the way referred to. Imitation may be the sincerest form of flattery, but it is not a paying thing for the architect, nor is it fair or right.

It seems a very difficult matter to get the architectural profession placed on a proper basis. The members of other professions such as Lawyers, Doctors, Dentists, etc., are allowed to protect themselves and the public, while architects get no protection or legalized standing. Combines seem the order of the day but an architectural combine seems to be out of the question up here, for the present at any rate.

The Parks Board have taken charge of the City Hall square and are planting extra trees and intend to lay out flower beds. This is a move in the right direction. They have also charge of all boulevarding in the city and will plant trees on a definite plan, charging the cost up to the owners. This will beautify and improve our streets, as trees add much to the appearance of street architecture.

NOTES.

The foundation for J. G. Hargrave & Co's store on Main st. is well under way.

Progress is being made with the foundation of the new Merchants' Bank building and some good work is being done.

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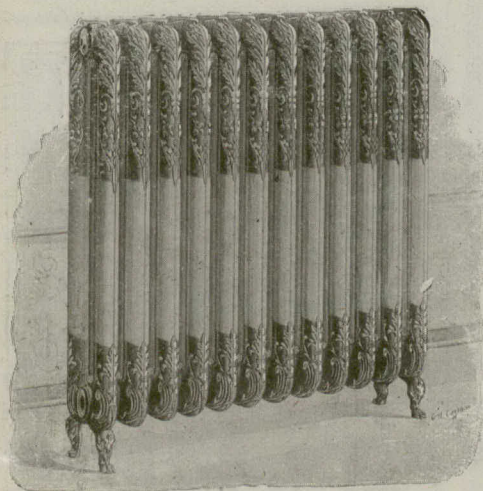
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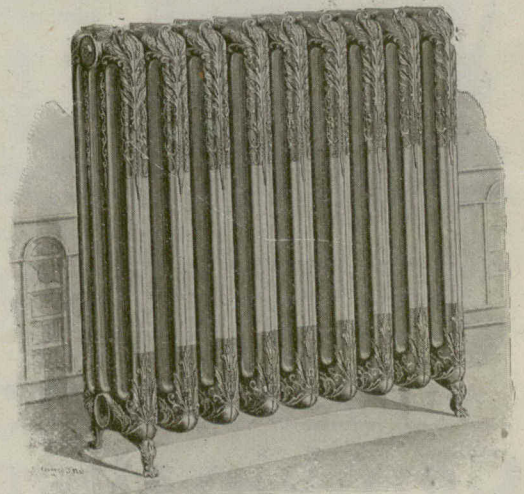
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CATALOGUE FOR THE ASKING

BUILDING IN CHICAGO.

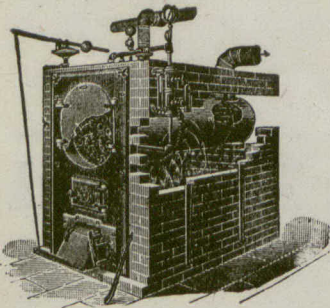
The Chicago Building Contractors' Council, which recently cast off the yoke of the Building Trades' Council, celebrated the victory by holding a banquet. Since the deadlock in the building trades in Chicago was broken, building activity has been so great that supply firms are finding it difficult to meet the demand for certain kinds of materials.

A dispatch from London states that a few weeks ago a small marble shaft fell from one of the windows in St. Andrew's Chapel, in Westminster Abbey, the iron pin that had sustained it for 600 years hav-

ing become corroded. Iron pins are doing the same duty in innumerable places throughout the Abbey and further dilapidation is apprehended. To overhaul and renew these pins would be a superhuman labor. Professor Church says that the use of gas as an illuminant in the Abbey, which is a limestone building, sets up a chemical change which is followed by disintegration. It has been suggested as a means of checking further decay that the Abbey be lighted by electricity, as is St Peter's at Rome.

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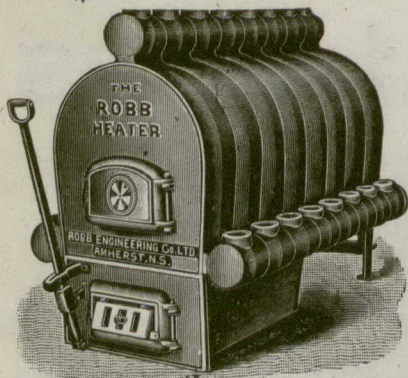
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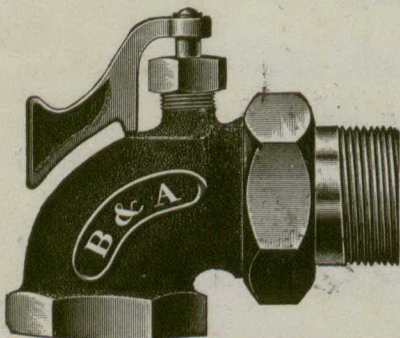
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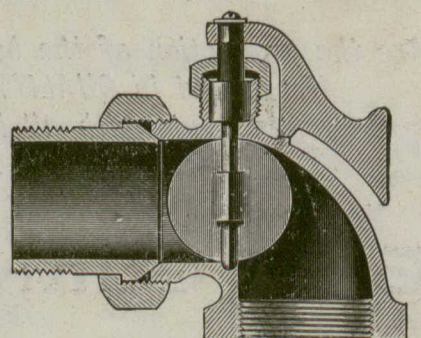
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PERSONAL.

The sons of the late Thos. Haskins, who was for many years city engineer of Hamilton, have recently had erected a memorial window in St. Thomas Church.

Mr. Thos. C. Sorby, architect, of Vancouver, B.C., is writing a series of articles on "Domestic Architecture in England During the Middle Ages," for the American Architect.

Mr. W. H. Law, late chief engineer of the Hamilton Bridge Company, has been placed in charge of the structural iron department of the Canada Foundry Company, Toronto.

Mr. J. O. Marchand, of Montreal, who has just completed a course of study in architecture at the Ecole des Beaux Arts, Paris, has distinguished himself by winning a competition in design over the heads of 400 rivals of all nationalities. He has been awarded a first-class medal, and his work has been purchased for the library of the school.

Mr. Henry B. Gordon, of the firm of Gordon & Helliwell, architects, of Toronto, has gone to Corea, having received a commission from the King, to supervise the erection of a new palace, hospital and other important buildings. He expects to be absent at least a year. Previous to his departure his many friends tendered him a complimentary banquet at McConkey's and presented him with an illuminated address.

Mr. G. F. Todd, landscape architect, of Montreal, spent a few days in Toronto recently, and was a guest at the weekly luncheon of the Ontario Association of Architects. He had also an interview with the Mayor regarding the improvement of the Industrial Exhibition grounds on the lines suggested by the O.A.A., and the laying out of central squares, and such like methods of improving the appearance of the city.

An English paper states that Mr. Edwin O. Sachs, the architect under whose direction a series of valuable tests of fire proofing materials is being conducted in London, is not yet thirty years of age, but has already started four times at the lowest rung of the ladder—not as a necessity, but as a means of instruction. As an architect, he started by working as a bricklayer for four months. As an engineer, he worked in the smithy. To understand stage construction he became sceneshifter at half-a-crown a

night for four hours' labour; and, lastly, to learn everything connected with fire and its prevention, Mr. Sachs joined a fire brigade for six months in Vienna, afterwards serving in Berlin.

SASH CORD.

Too little attention is paid to the small item of Sash Cord. A poor quality rough cord wears out in a very short time, and requires the services of a carpenter, while a good smooth solid braided cotton cord wears for many years.

In order that users of sash cord may always feel sure of getting a first quality cord, having the very best reputation for many years, the Samson Cordage Works adopted some years ago as a trade mark the "Colored Spot," appearing at intervals in the cord. This is used only in their first quality cord, which should be specified as "Samson Spot Cord." The manufacturers will be glad to furnish copies of tests made by the Massachusetts Institute of Technology, and full information together with samples.

Mr. W. F. Tallman, who for some years was engaged with his father, in the manufacture of brick, at Beamsville, Ont., has gone to Edmonton, N.W.T., to assume the management of a brick-making plant about to be put into operation there by Messrs. P. Anderson & Company. It is expected that the plant will commence operations this month. It will be located between Strathcona and Edmonton, on a line of railway now surveyed. The plant will be quite extensive, having a capacity of 50,000 bricks per day, and although there are three other plants in the town, it is anticipated that all the brick manufactured by the different plants will be required for construction in Edmonton and vicinity. No stone is procurable within a distance of one hundred miles, and as a result brick is used for foundation purposes. In the town of Edmonton alone it is estimated that 4,000,000 bricks will be used this year. It is probable that, in addition to common brick, the company will manufacture sewer pipe, sidewalk brick, and if the clay should be found suitable, pressed brick also. In Mr. Tallman, the company have secured a manager whose ability and experience warrants the prediction of successful operations.

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LEGAL.

BLAIS VS. THE GURNEY-MASSEY Co.—This case came up before Justices Gill, Mathieu and Loranger of the Court of Review, Montreal, on the 9th inst. The defendant inscribed in review from a judgment which maintained the plaintiff's action and condemned the defendant to pay \$400 damages. The case arose out of the purchase by the plaintiff of the defendant, in the fall of 1899, of a steam-heating apparatus, styled in the defendant's catalogue, "Gurney's Bright Idea Water Tube Steam Boiler." The plaintiff had entered into a contract with the Fabrique of the parish of Ste. Martine, district of Beauharnois, for the installment of a heating apparatus, to heat the parish church. The defendant published a catalogue in 1897 in which the particular apparatus purchased by the plaintiff was represented as having a heating capacity of 2,400 square feet of radiating surface, equivalent, as appeared by the evidence of experts, to 7,200 linear feet of one-inch pipe, the price of which was \$686. In 1899 the defendant published another catalogue, in which it appeared that the heating capacity of this apparatus was reduced to 1,800 square feet, equivalent to 5,400 linear feet, and the price was reduced to \$600. After the apparatus was installed it was found that it would not heat the pipes and the rest of the system with which it was connected. The plaintiff protested the company defendant, and called upon it to replace the apparatus with one of a capacity of 7,200 linear feet, as stated in the catalogue of 1896. The de-

endant refused to do this, alleging that it sold the apparatus according to the catalogue of 1899, wherein the capacity was guaranteed to be only 1800 square feet; that the apparatus had that capacity, and if it did not heat the pipes of the church sufficiently, it was owing to their too great extent. The court below decided in favor of plaintiff's pretension as to the catalogue, but rejected his claim for damages to reputation, and reduced his demand of \$647, for replacing the heating apparatus, to \$400, and this award appearing to the Court of Review to be well founded, the judgment was confirmed.

A prominent insurance adjuster makes the statement, that a large majority of the recent fires in the city of New York have resulted from imperfectly insulated electric wires. He says that this is due to the fact that the contractors for electric wiring employ boys and inexperienced men to do the work, rather than be obliged to pay for the services of experienced electricians, and that the vibration and settlement of walls frequently destroy the insulation where proper preventives have not been employed. He adds: "It, therefore, behooves architects to specify that none but thoroughly competent and experienced workmen shall be employed, and they must not trust entirely to the electrical contractor, but examine the work themselves with the same exacting care that they devote to work done by other builders."

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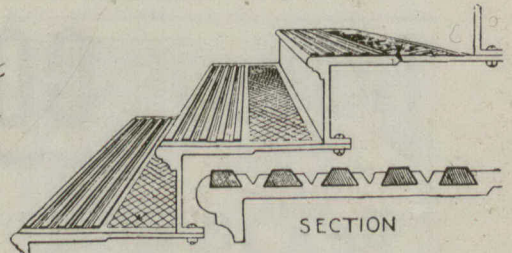
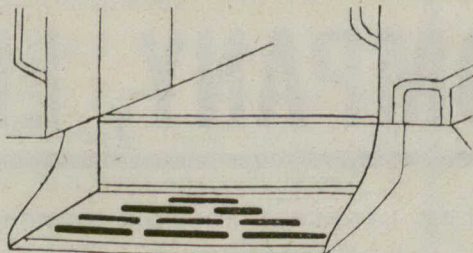
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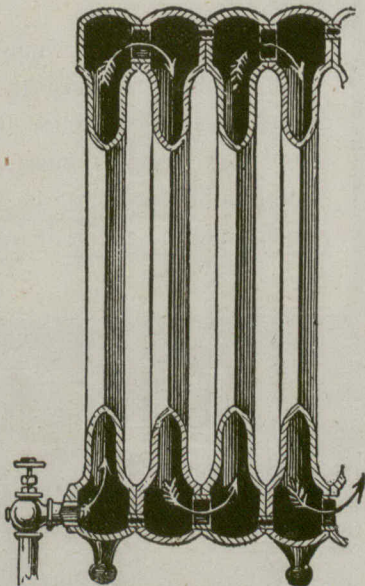
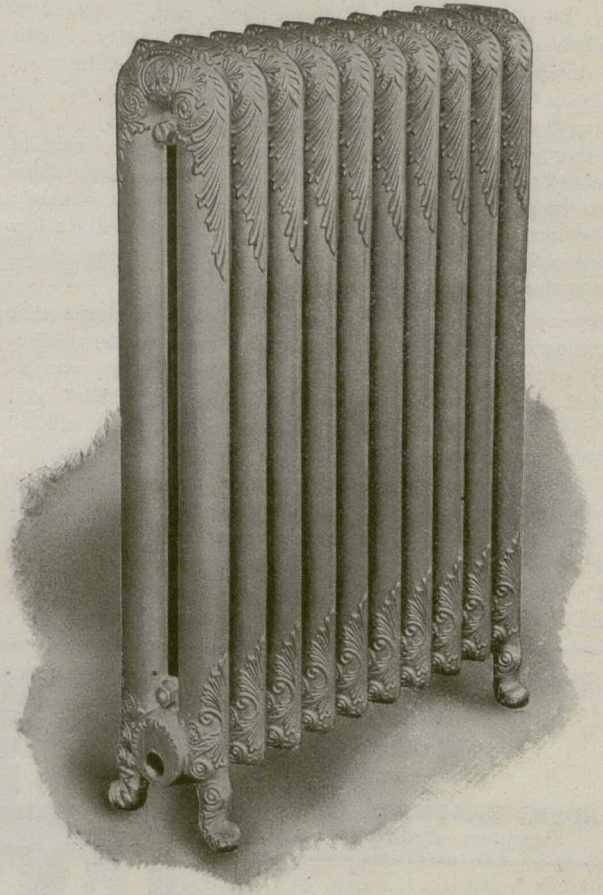
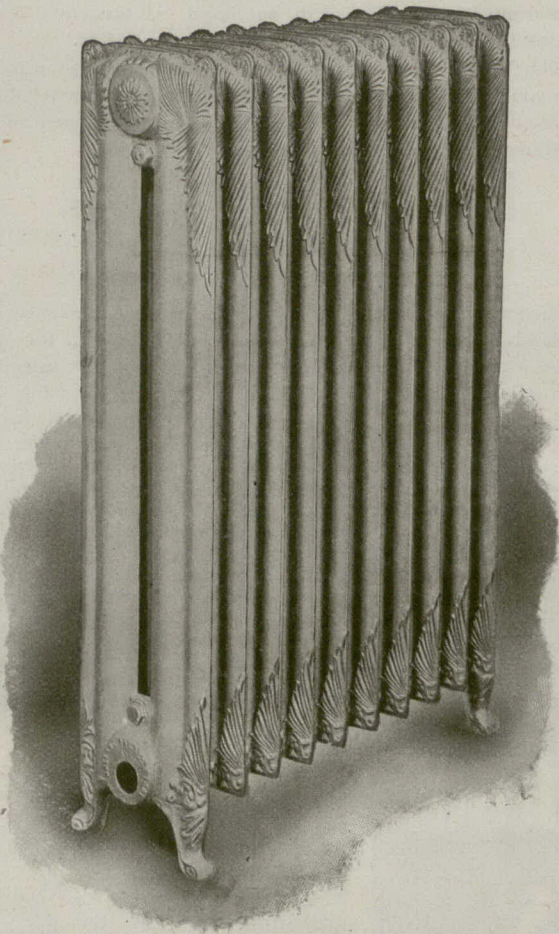
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LETTER FROM THE TORONTO ARCHITECTURAL
EIGHTEEN CLUB.

Publishers CANADIAN ARCHITECT AND BUILDER:

DEAR SIRs:—We received your communication of the 8th ult., informing us that a certain local architect and some others have strongly objected to one illustration page of your journal being reserved for our Club, with that fact printed on said reserved page, as has been the case for some months past; and further that if such "distinction thus given to us be not removed, they will in future decline to give" you "drawings and photographs of their work for reproduction."

We beg to say that our idea in introducing this innovation was that our Club would be enabled thereby to exercise strict censorship over the published work of its members, and, at the same time endeavor to create a friendly rivalry in the quality of their published work and that published by the rest of the architectural profession of Canada—a result we considered beneficial, at once to our country, your journal and the profession at large.

That through your enterprise we have succeeded by means of our reserved page in bringing an increased measure of favorable notice to the work published on your illustration pages is amply proven by turning to the critical pages of the Architectural Review published in Boston, from the pen of one of the foremost architectural critics on this side of the Atlantic.

We had not the remotest idea, till we received your letter that anyone imagined that our members had secured undue distinction beyond their fellows. Therefore we desire to relieve you, as suggested, "From the unpleasant situation in which" you "find" yourselves "placed through circumstances over which" you "have no control." We would keep no impediment in the way of this gentleman and his friends; we wish them to supply you with their photographs and drawings for reproduction. Therefore we cheerfully accede to their request that we be treated as other architects contributing to the illustration pages of your journal. But we think we will not avail ourselves of their liberal offer, viz., that when, in future, any of our members may, indi-

vidually, as all architects contributing to your pages, send you drawings for reproduction, they shall have the privilege of announcing on the page that they are members of the Eighteen Club.

But some matters must not be taken too seriously. Some of us remember how in our student days amusing stories were told us how the "old fellows" of the then "old days" would allow nothing architectural to be done, no matter how excellent, unless something in the shape of precedent could be hunted up to warrant its adoption. Happily those days of architectural practice have long since gone by, though apparently some vestige of the principle remains in the minds of our esteemed contemporaries as you quote them in your letter as objecting to our reserved page on the ground that "There can be found no precedent" for it "among the architectural journals of other countries."

In conclusion we specially request this letter to be printed in full in your next issue as we think it only fair to our Club that your readers should know the reason of the non appearance of our former reserved illustration page.

Yours truly,

J. P. HYNES,

Sec. pro. tem.

TO INTENSIFY BLUE PRINTS.

In a recent issue of the Photographisches Wochenblatt is an article advocating the use of peroxide of hydrogen for giving greater intensity of color to blue prints. It will be remembered that a blue print is not as intense on leaving the washing water as it is after some 24 hours' exposure to air, an effect assigned to oxidation. To remedy this, it is suggested that a few drops of peroxide of hydrogen be added to the water, to increase the rate of oxidation. The scheme is also useful when the paper is old and gives veiled prints. In case the sensitized paper has turned a greenish blue, it should be over printed until a decided image is visible. Then a little washing soda solution should be added to the washing water, but it should be used sparingly. The washing should be repeated until the whites are clear, and then the prints should be given a final wash in water to which a small quantity of peroxide of hydrogen has been added.

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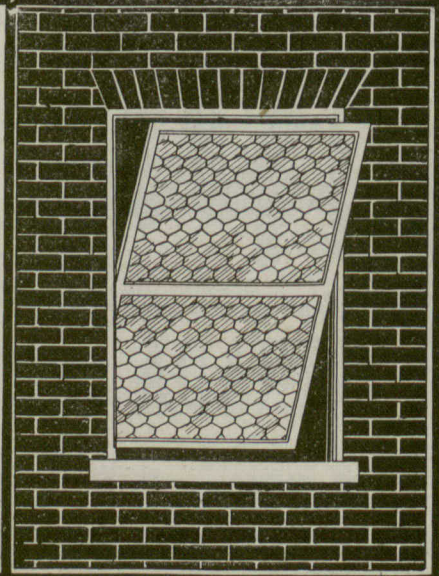
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AGREEMENT AS TO WAGES IN TORONTO.

On the first inst. the following agreement governing wages, was signed by the Mason Builders' Section of the Toronto Builders' Exchange and the Bricklayers' Union :

1. This agreement shall be for one year from May 1st, 1901, and three months' notice shall be given by either of the parties hereto as to every alteration before the expiration of this agreement.

2. The rate of wages during the term of this agreement shall be 37½ cents per hour.

3. The Bricklayers' Union hereby agree that the union shall be a strictly journeymen's union from the date of this agreement.

4. The union as a whole shall not order any strike against any member of the Mason Builders' Section of the Exchange, nor shall any member of the union leave the work of a member of said section before the matter in dispute is brought before a joint committee for settlement, provided the same is called within 48 hours.

5. Except in cases of extreme necessity, no work shall be done before the hour of 8 A.M., and after 5 P.M., nor after 12

o'clock noon on Saturday, and all overtime shall be paid time and one-half.

6. The Mason Builders' Section of the Exchange hereby agree that in cases where any firm comprises more than two members, not more than two members of such firm shall be permitted to lay brick.

7. The bricklayers shall be paid their wages before noon on Saturday.

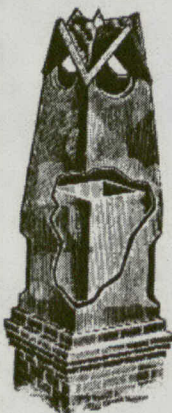
8. It is hereby understood that each and all parties to this agreement shall report to their respective bodies any known information of the violation of any article of this agreement.

9. A conference shall be held between the parties to this agreement four months prior to expiration of same, to consider all matters as to their future relations.

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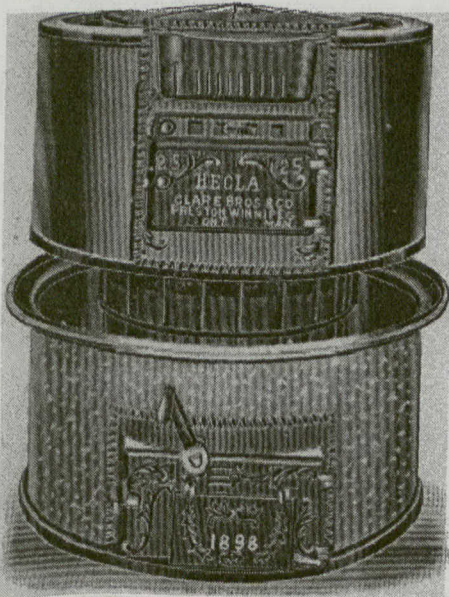
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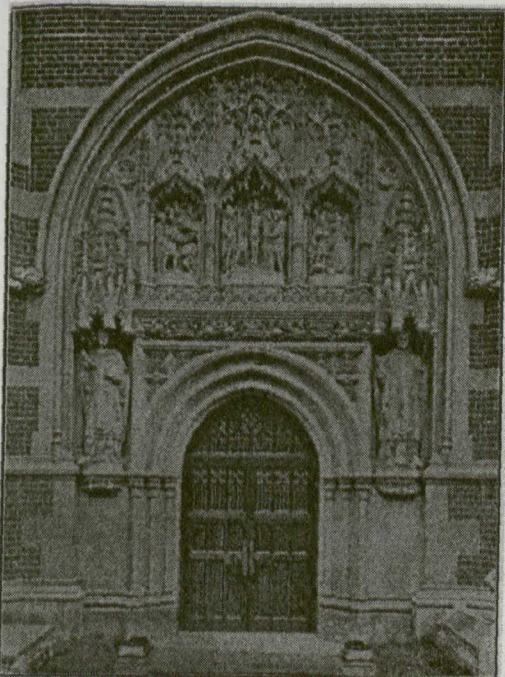
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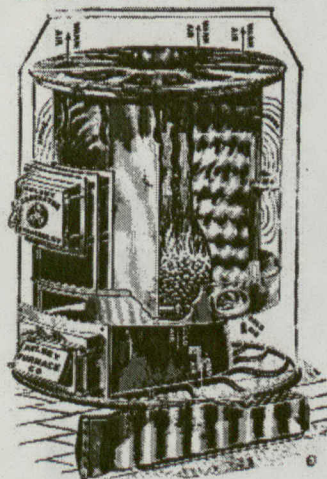
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