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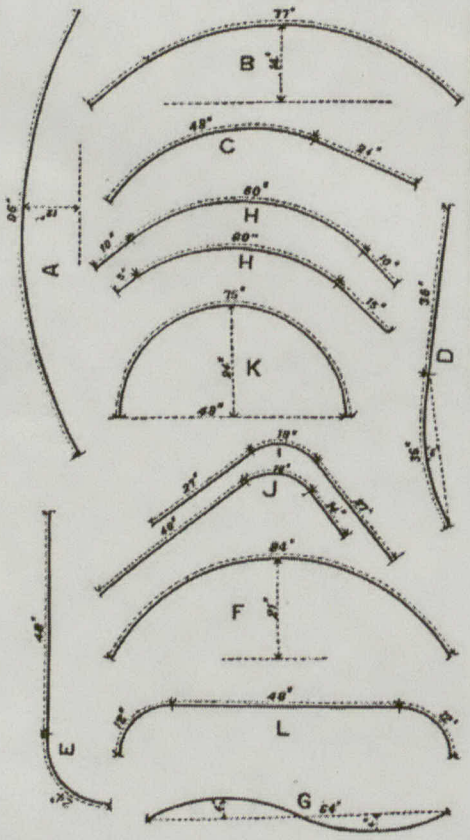

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And not longer or wider than 30 x 30	$0 30	$0 18
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" " " 50 x 50	0 85	0 35
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WINDOW GLASS WHOLESALE IN 100 Ft. BOXES OR PANES FROM STOCK

DIRECTORY OF LEADING STONE AND GRANITE DEALERS

The Canadian Architect and Builder

VOL. XVI.—No. 187. JULY, 1903.

ILLUSTRATIONS ON SHEETS.

Competitive Sketch for Presbyterian Church, Vancouver, B. C.—Arnold Woodroofe, A.R.I.B.A., and C. S. Wickender, Associate Architects.
St. Stephen's Church, Winnipeg, Man.—S. Badgeley, Architect.
House in Spencer Avenue, Parkdale, Toronto.—R. J. Edwards, Architect.

ADDITIONAL ILLUSTRATIONS IN ARCHITECTS' EDITION.

House in Cluny Avenue, Toronto.—S. H. Townsend, Architect.
Statue in Queen's Park, Toronto, of John Graves Simcoe, First Governor of Upper Canada.—Walter S. Allward, Sculptor.

ILLUSTRATIONS IN TEXT.

Views and Plans of Leighton House.

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SPECIAL CONTRIBUTORS.

PROF. S. H. CAPPER, R.C.A., Department of Architecture, McGill University, Montreal
MR. W. A. LANGTON, Architect, Toronto.
" EDMUND BURKE, " "
" S. H. TOWNSEND, " "
" FREDERICK G. TODD, Landscape Architect, Montreal
" W. H. ELLIOTT, Toronto.
" J. C. B. HORWOOD, Architect, Toronto.
" A. F. DUNLOP, R.C.A., Architect, Montreal.
" FRED. T. HODGSON, Architect, Collingwood, Ont.

Large Scale Parqueterie.

It is usual in England to floor the passages of a church with stone or tiles and the seating areas with wood, in the form of herring bone flooring, composed of pieces of unfinished wood about 4"x18." The size of the pieces is the principal part of the excellent appearance of this kind of flooring and the fibrous appearance of the unfinished surface is the rest. It is suggestive also, from the ease with which it can be repaired in parts, of suitability for a building where the flooring may be worn out in some spots sooner than in others.

Walls.

There is nothing in the way of railing so satisfactory as the stone baluster. The difficulty about it is its cost, for in order to give it its proper effect it must be used in stretches of some length. In London where, if there are, as it is said, 3,000 miles of streets there must be at least 300 of garden walling; a cement baluster and rails are extensively used on the top of a low brick wall plastered with cement. The effect redeems a very plain street from dullness, is not unmanageably expensive, and yet does not look cheap. One never sees a fence of this kind in a state of deterioration, so that there is no reason to suppose it is not durable ; indeed the evidence of other work in the same material would go to promise a durability as great as that of stone. Sometimes the baluster and rails are of terra cotta. Both are apt to appear alike in time, because of the London leases which exact repainting every three years.

Insurance Against Strikes.

It is stated on authority of the President of the National Manufacturers' Association of the United States that a Mutual Company is to be formed with the effect of insuring employers of labor against losses occasioned by strikes. The company will also aim to protect independent workmen, by establishing a legal department and prosecuting persons who may attempt coercion or violate the law. It is proposed to keep secret the names of the members, so that when a strike is instituted it will not be known whether the fight is to be with an individual employer or a powerful organization of the character described. There is a movement all along the line to curb the powers of the unions to demoralize business and restrict the freedom of employers to employ whom they please and of workmen to sell their labor to whom and at whatever price they may choose. The general public are a unit with

the employers of labor in demanding that means shall be found to prevent the continued disturbance of commercial conditions and interference with individual rights. Legislation with this object has recently been introduced and is now being considered by the Parliament of Canada.

Building Restrictions.

As the result of a recent attempt to establish a factory in the centre of a choice residential section of Montreal, Alderman Vallieres has announced his intention to introduce a by-law defining the limits within which factories may not be erected. Such a regulation should be inforce in every city, and ought properly to be incorporated in the building by-laws. There should also be a clear cut provision compelling property owners to keep their buildings back a certain distance from the street line. Numerous cases might be cited in which for want of such regulations heavy losses have been suffered by property owners in residential districts. It should not be possible for a factory, a livery stable or even the back premises of an apartment house to abut against residential property, nor for the house owner to build a porch or other projection so near the street line as to deprive his neighbor whose house is properly placed of the view up or down the street to which he is entitled. It is to be hoped that if the Toronto building by-laws supposed to be now in process of revision, ever reach completion, they will contain a clause which will properly regulate these important matters.

Old Mantles.

There is in England a trade in old mantels. When old houses are broken np, these, and no doubt other fragments of detail, are collected by dealers and sold for incorporation in modern work. The paint is cleaned off thoroughly, and in that state it can be seen exactly in what condition the work is. A correspondent in London who has been examining some of the stock at the warehouse of Thos. Hall, 25 Great Portland street, London, W., suggests that some of these mantels ought to be imported into Canada. The price ranges from about $30 to about $60. At that price they are cheap ; and, with cost of importation added, would be still worth while for those who can afford to pay for a good thing. Though old, the mantels that are offered for sale are not shabby. They are usually of good design, which was the origin of their preservation, and are fully ornamented ; and, whether because there is a softening effect of age or that the work is hand work, the ornament is more pleasing than in new productions of the same model. It would be possible for a purchaser to get sufficient description or illustration of some of these mantels to make up his mind as to their suitability.

Peasant Art.

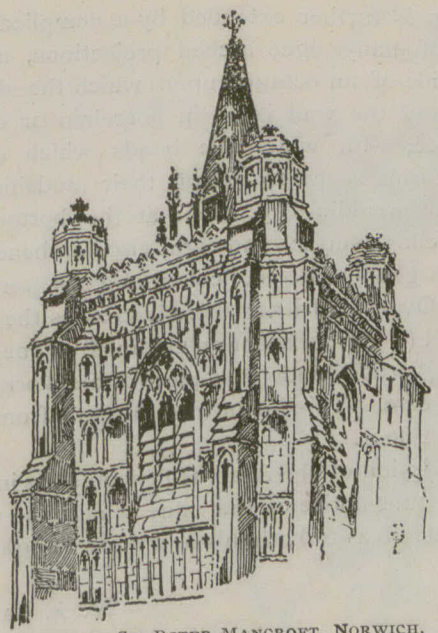
There was recently held, at the Albert Hall in London, an exhibition of Home Arts and Industries, the annual work of a society which exists to foster the production of various forms of art in the leisure hours of working people. When the movement first began there was a tendency to claptrap : hammered brass and other forms of unmistakeable hand production, valued more for the evidence of handwork—what is known as "the loving marks of the hammer"—than for any real beauty. Now, however, there are some excellent productions in the way of homespun cloth and other textiles, lace, tapestry, pottery, cabinet making and wood carving. All these are good and useful productions ; the country is better off and the people who make them are no doubt better off, both mentally and in pocket, for their production. But the interesting thing for a bystander is to observe that there is not a trace perceptible of variation from the ordinary types of similar work produced in the ordinary way. The cloth is simply good cloth ; the lace is, to the eye of a male man, like other lace ; the tapestry might have been designed, and perhaps was designed, by some one of the school of Burne Jones ; the cabinet making might come from Grand Rapids, Mich. ; the wood carving is as imitative of old work as is the best architect's ; the pottery alone and some of the metal work had a noticeable note of freshness.

London Leases

The tenant in London assumes risks which would be declined in any other town. Houses are let under what is called a "repairing lease." "Reasonable wear and tear," which are excepted, in our leases, from the tenant's responsibility, are what, in London, the tenant has especially to make good. In other words the preservation of a man's property from the deteriorating effects of time depends not upon his own exertions but upon exertions which he exacts from the temporary occupant. The consequence is that there is always a floating valuation going on outside of the lease. An incoming tenant may have three money questions to consider : The rent, the repairs the landlord requires before he will give possession, and a premium to be paid the outgoing tenant for improvements effected by him—this latter in the case of taking up an unfinished lease, which often happens, for leases taken under these conditions are usually taken for as long as possible and are often transferred while still running. On the other hand, before a tenant quits possession, an inquisition is made by the agent of the landlord to see if the tenant is leaving the property in the condition in which it ought to be left ; if not, an estimate is made of the necessary repairs, the sum is extracted from the outgoing and handed to the incoming tenant. It is probable that it would be more exact to say that the sum is allowed the incoming tenant and extracted from the outgoing tenant if possible.

One effect of shifting repairs from the owner to the tenant is that, even when a row of houses remains entirely in the hands of one proprietor, the repainting of the different houses is done at different times and a row is effectually relieved of monotony. The repetition of the original tint (usually a very light colour) in different degrees of freshness is rather an improvement to the look of the row, having all the pleasing effect of cloud shadows on a range of hills.

The most serious result to the tenant, of such a lease, is that the consequences of undermined foundations, earthquakes, windstorms, etc., fall on the tenant, who does not therefore feel in a sound position unless he has capital, beyond his needs, practically sufficient to rebuild the house.



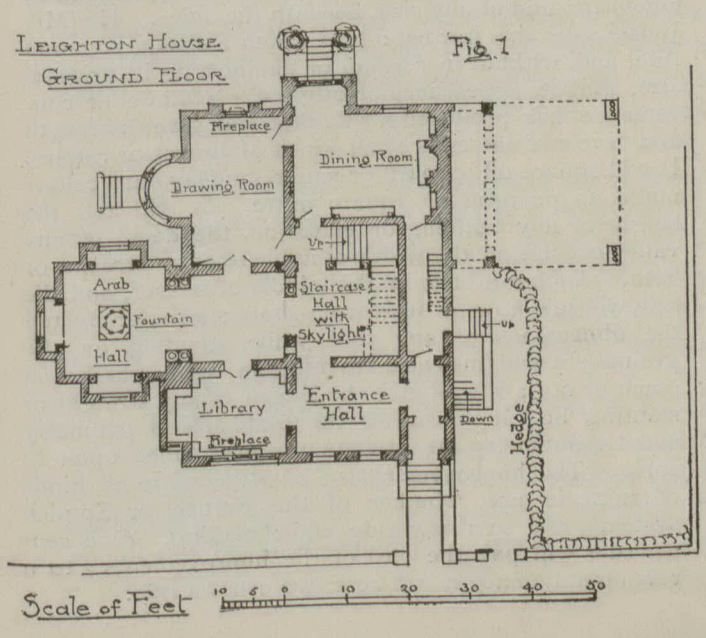
TOWER OF ST. PETER MANCROFT, NORWICH.
G. E. STREET, ARCHITECT.

NOTES ON TRAVEL.—II.

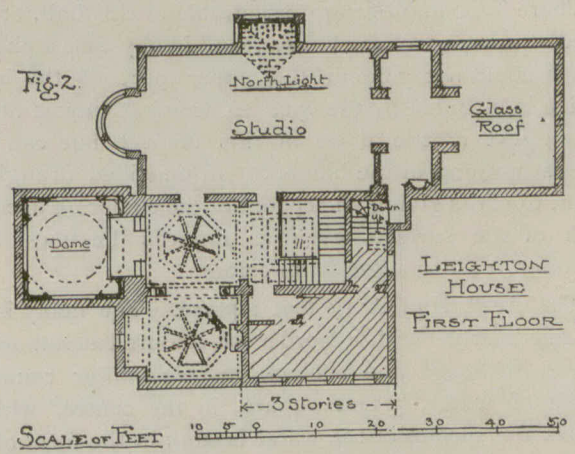
LEIGHTON HOUSE.

Lord Leighton's house has been pocured for the public by subscribers ; and, under the management of a committee is open to the public. The floors are properly covered and there is a good deal of furniture but no knick-knackery. The walls are covered with chalk and pencil studies for his various paintings. These were also procured by the committee from Lord Leighton's heirs and elsewhere. They are well arranged in groups as pendants to a photograph of the painting which resulted from them, and form a valuable series of lessons in design for artists. But the house itself is the object of this study.

The house is designed for the interior. The exterior is not composed for display and would have little chance of being seen if it were. It is in the middle of Holland Park Lane, which is in reality a stable lane about 33 feet wide, with a cobbler's shop on one side of the entrance to it and the back of a livery stable on the other ; one good house next to Lord Leighton's but retired in its grounds ; a row of cottages opposite, two of which, as their signs declare, are inhabited by a clear starcher and a carpet sweeper ; the rest of the lane occupied by studios of a modest kind, some of which are converted stables, and by stables which are still unconverted and in the gall of bitterness.

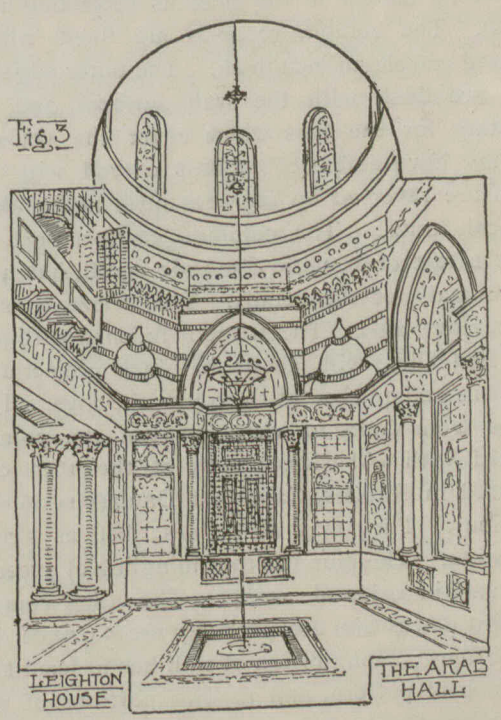


Once in the house there is no occasion to think of the approach, which is indeed partly justified already by its quietness. In London it is only necessary to be one remove from the traffic of a main artery in order to be quiet. There is no roaring trolley or ringing asphalt ; the pavement is of square wooden blocks on concrete, and the intervention of a garden is enough to make its soft roar sufficiently remote. The front of Leighton House is desirably quiet and the rooms looking upon the garden behind, upon the north side of the house, are a model of peace and dignity.



The house is distinctly a house for entertainment. Lord Leighton was unmarried and lived alone. His bed room was in the shaded portion of the upper floor. This area is now set apart for the office of the honourary secretary of the committee and is not open to the public, but, from its shape and the arrangement of the doors it seems probable that the bedroom was the larger square to the east and that the smaller square beside it was a dressing room or bathroom.

The kitchen was in the basement, as is usual in London, and the servant's bedrooms on the third floor, over Lord Leighton's own bed room.



The special feature of the house is the Arab Hall. It is of course an exotic : the latticed windows are not needed to exclude the already subdued light of London, nor is the air so parched that a fountain is a first consideration for luxury ; but, like many other exotics, it has a special charm from being a remove from the

ordinary. The real charm is however its perfection, the work, at the bottom, of the architect, Mr. Arichison. It is the proportion and balance of the design which are the real base of the beauty which the enamelled oriental tiles decorate ; but, together, they make a piece of work which seems to lack nothing of perfection. To sit in one of the wide window seats and let the eye rest on the harmony of the design while the ear enjoys the music of the fountain echoing in the dome is to enjoy perhaps as distinct pleasure as mere architecture can give.

There is no photogragp procurable of this hall, or indeed of any part of the house ; and in any case a photograph could not take in the upper part of the hall, which is included by the eye. A drawing may be made to suggest a little more in this respect but can do almost nothing in the hands of an unskilled draughtsman, towards giving an account of the elaborate decoration of the surface, even as regards the lines, and nothing at all to suggest its colour.

The Arab Hall is 17 feet square. The floor is of mosaic marble with a border of coloured scroll work round the edge and a black marble border round a basin of water, 5 feet square, in the centre, which, below the surface of the water is sunk in the form of an octagon with angles centered on the sides of the basin, and a semicircular sinking springing from each side of the octagon and about half a side in diameter. A pipe nozzle, projeecting above the surface of the water, at the centre, sends up a stream, of about 1/16 inch in diameter, about 3 feet high. This falls back into the basin with a musical sound to which the echoing character of the hall largely contributes. The walls have a black marble dado up to the window sills, 2′ 6″ high. The windows are covered by lattices of Mash-arabeeyeh work. The window bays are 9 feet wide by three feet deep, with angle columns of white marble (incorrectly shown in the plan as projecting into the recess). The column recesses are lined with light coloured marble an inch thick. The outer edges of the slabs are flush with the wall surfaces and form a boundary for the tiles which cover the walls. The columns have alabaster capitals carved with storks, which are reversed on adjacent sides and make symmetrical forms. The columns carry a flush frieze, about 2 feet deep, with a mosaic scroll, having birds and animals for the details. This frieze runs across the windows also. The frieze is finished with a 6 inch cove and fillet, with about half-inch projection from the frieze and quirked at the top of the cove. The wall spaces from dado to frieze between the columns is covered with old tiles, mostly of the 16th century, procured in Rhodes, Cairo and Damascus on different occasions. They may all be described as a rich blue and white. The blue has that mingling of green which is usual in oriental work. The tiles came from different places and are probably the work of different generations ; each portion of wall has at least two subdivisions of pattern, and no two portions of wall are alike ; but the harmony both of design and colour is perfect. The windows have pointed arches faced with dark marble, moulded : the soffits are mosaic, similar to the frieze. From the frieze spring squinches, if they can be so called, like inverse and inverted pendentives, with a delicate outline of many curves which carry a truncation of the hall with great neatness. The truncation is further extended by a complicated Arab cornice, of many ogee arched projections, until they become side of an octagon upon which the dome sits. This part of the wall is all in porcelain or enamelled tile ; white, with wide blue bands which cross the squinch forms so as to exhibit their modelling. The dome has moulding in colour at the bottom, a dull gold or yellow surface and eight circular headed lights filled with genuine Persian coloured glass, very deep in colour. Over the frieze where it crosses the entrance to the hall (a marble beam on columns) is one of those projecting lattice windows, a piece of old work, brought from the east. This looks into the hall from the hall in the first floor.

A description of the Arab Hall would be incomplete without some notice of the value which the unlighted middle hall gives to both this and the well lighted staircase.

W. A. LANGTON.

(To be continued.)

BY THE WAY.

The field is already so full of specialists and so-called experts that the functions which ought to belong to and discharged by the architect, are becoming less and less clearly defined. Yet there is apparently a disposition to specialize still further. The recommendation has recently been made that service of the " lighting engineer" should be procured to determine the character and location of lighting fixtures which should be employed in a building, their effect upon the decorations, color of light to harmonize with fittings, disposition of occupants of rooms and character of employmen therein, expense of installation and maintenance, burners available and supplies or repairs for the same, etc., etc, Now if the architect who plans a general scheme be not competent to deal with the details thereof, it seems to me he had better abdicate entirely, and hand over the whole business to the " specialists." Within proper limits the latter are doubtless a distinct aid to the architect, but if success is to crown the work, there must not only be expert knowledge in the various departments, but also a master mind to plan, supervise and harmonize the whole undertaking.

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According to the Meriden Journal, M. M. Jones, (nothing extraordinary about the name) an architect of that city, has invented a measuring rule that may almost be said to be capable of measuring anything, anywhere, and of any size, beneath the skies. He (Mr. Jones) says the Journal : Has taken a cheap, common rule, and, without increasing or diminishing its original size, weight, appearance or original usefulness or convenience, has produced a rule that will give the length and levels of the ends of all kinds of braces or rafters. It will square off a board or square and lay out a cellar, make an octagon or square mitre. It will tell the height of any building or elevation, the depth of any valley or chasm, the width of any street or stream, or both. Anchor a boat in the middle of a river, and the rule will tell how far it is from shore ; a roofer can tell the dimensions of any roof while standing on the ground ; it will measure anything in sight, whether in reach or not ; it will give the length of any straight or slanting line, it solves all the problems in geometry aud trigonometry the mechanic is ever called upon to solve. The improvement can be attached to all kinds of rules in use, whether of the French or English systems, and to a new rule while making. One cent per rule will pay the cost of the improvements ; to a rule already made it will cost two cents a rnle.

THE NATIONAL ASSOCIATION OF MASTER PLUMBERS, STEAM AND HOT WATER FITTERS OF CANADA.

The eighth annual convention of the above Association opened in Forester's Hall, 505 Craig Street, Montreal, on the 2nd of July, The President, Mr. F. Powers, presiding. The president in his annual address stated that the relations of the master plumbers with the manufacturers and supply firms were of a friendly, and on the whole, satisfactory character. The membership of the Provincial Associations was steadily increasing. New associations have been organized during the year at Sydney, and on the Island of Cape Breton. Attention was called to the necessity for the appointment of a permanent secretary and organizer to be paid a salary sufficient to enable him to devote his whole time to organizing and association business. Owing to the shortening of credits to 30 days by the manufacturing and supply firms, it was recommended that the plumbers also curtail credits to thirty days.

The report of Mr. Peter C. Ogilvie, vice-president, contained the following suggestion: "I think that in the interest of every one, no contractor should make a contract with any labor union, until such time as they become incorporated bodies. As it is now, a contract is only kept until such time as it suits them best to break it; I sincerely hope that we will be able to get some practical suggestions from some of those present at this convention."

Mr. W. H. Meredith, vice-president for Ontario, urged the importance of organizing associations for every province, and as a proof of the advantage of so doing, referred to the fact that all the principal towns and cities in Ontario now had local associations, and that in Toronto 95 per cent. of the master plumbers are members of the local association.

Mr. James Farquhar, vice-president for Nova Scotia, referred to the fact that the Board of Health at Halifax is very strict in the enforcement of sanitary regulations, and that there is co-operation between the Board and the local plumbers' association in behalf of the enforcement of sanitary laws.

The President of the Montreal Association, Mr. T. O'Connell, referred in his report to the good feeling existing between the Master Plumbers' Association of Montreal, and the local Journeymen's Union. Reference was also made to the fact that the city plumbing by-law has been amended in several important particulars, one of which was that journeymen have now to undergo examination.

George A. Perrier, secretary, in his report also referred to the necessity for the appointment of a paid secretary who should reside at a central point, and be in a position to have at all times a thorough grasp of the affairs of the Association.

The President called attention to an Act passed by the Legislature of the State of New York and which is now in operation, having reference to government and municipal contracts. This Act had been revised with a view to its presentation to the Dominion government for adoption, and is as follows:

The people of the Dominion of Canada represented, do enact as follows:

Section 1. All specifications or contracts hereafter made or awarded by the Dominion, or by any public department or official thereof, for the erection and construction of buildings, shall be understood to embrace stone and mason work, carpenter work, painting and decorating work, plumbing, heating, electrical work, structural iron work, and roofing.

Section 2. The officer, board or commission charged with the duty of drawing specifications and contracts for the erection and construction of buildings for the Dominion, or any political or other sub-division of the Dominion, must draw separate specifications and contracts to cover the separate kinds of work referred to in Section 1 of this act, and they must be so drawn as to permit of unfettered bidding for and upon the separate branches of work to be performed.

Section 3. All contracts hereafter made or awarded by the Dominion, or public department or official thereof, for the erection and construction of buildings, are to be awarded separately upon the separate branches of work, as referred to in Section 1 of this act, to responsible and reliable individuals, firms and corporations engaged in the business of the kind to which the work to be performed belongs.

Section 4. No bid shall be received or accepted by the Dominion or any public department or official thereof, unless the party making the bid shows by affidavit that he is a citizen of the Dominion of Canada, and as a test of his fitness to properly perform the work bid for, that he has served an apprenticeship of at least three years at the line of work specified in his bid, or that he is a contractor in the particular line, and has had at least five years' practical experience.

Section 5. If any person, firm or corporation, to whom any contract is hereafter let, granted or awarded, by the Dominion or by any public department or official thereof, shall, without the previous written consent specified in Section 5 of this act, assign, transfer, sublet or otherwise dispose of the same, or any right, title or interest therein, to any other person, firm or corporation, the Dominion, public department or official thereof, as the case may be, shall be relieved and discharged from any and all liability and obligations growing out of said contract, and to the persons, firm, or corporation to whom he shall assign, transfer or sublet, or otherwise dispose of any right, title or interest in the same, and said contractor, and his assignee, transferee, or sub-lessee shall forfeit and lose all moneys theretofore earned under said contract, except so much as may be required, to pay his employes, provided that nothing herein contained shall be construed to hinder, prevent or affect an assignment by such contractor for the benefit of his creditors, made pursuant to the Statutes of the Dominion.

Section 6. All acts and parts of acts inconsistent with this act are hereby repealed.

Section 7. This act shall take effect immediately.

The proposed measure met with general approval, and a committee consisting of the President, past-president McKinley and the treasurer, Mr. Lamarche, was appointed to interview the Minister of Public Works

and the Ministers of all spending departments of the Government and urge upon them and upon the Government the adoption of this measure during the present session of Parliament.

The action of the manufacturers of soil pipe and fittings in deciding to discontinue, after the 1st of January next, the sale of light soil pipe and fittings, was endorsed.

The Committee on Resolutions suggested that clause 1 of the President's report be amended to read as follows: "That it be a recommendation from the National Association, that any agreement which local associations may make with the journeymen, should be ratified by the International Association of Journeymen Plumbers." On recommendation of the committee the other reports were adopted. The committee recommended that the revenue of the Association be enlarged by an increased per capita tax, thus placing sufficient funds at the disposal of the officers of the Association to properly prosecute the work.

The Executive Committee were instructed to place themselves in communication with the National Association of the United States to learn if it would be agreeable to that organization to have a representative of the Canadian Association attend its next annual meeting and to reciprocate by sending a representative to future annual conventions of the Canadian Association.

It was decided by vote that the next convention of the Association should be held in Toronto commencing on Wednesday, July 20th, 1904.

The following officers were elected for the ensuing year: President, Joseph Thibeault, Montreal; Vice-President, Robert Ross, Toronto; Secretary, H. A. Knox, Ottawa; Treasurer, F. G. Johnson, Ottawa. Provincial Vice-Presidents: British Columbia, John McKinley, Ottawa; Manitoba, A. J. Hammond, Winnipeg; Ontario, H. Mahoney, Guelph; Quebec, Joseph Lamarche, Montreal; New Brunswick, W. Watson, Moncton; Nova Scotia, Geo. Kinsman, Halifax. Chairmen Standing Committees: Legislation, E. B. Butterworth, Ottawa; Apprenticeship, G. A. Perrier, Halifax; Sanitary, James Hughes, Montreal; Essay, John Watson, Montreal.

A conference was held with representatives of a number of manufacturing and supply firms, when trade relations were considered. The plumbers pointed out the desirability of a Dominion organization of manufacturers and dealers in plumbers' supplies, so that trade differences might more easily be discussed and remedied. At a subsequent meeting of the manufacturers and supply firms it was decided to form such an organization.

A very enjoyable evening was spent in connection with the Annual Association Dinner held at the Windsor Hotel. In the unavoidable absence of Mr. Thomas O'Connell, President of the Montreal Association, the chair was occupied by Mr. Lamarche, having on his right the President of the Association and on his left Mr. J. S. Archibald, Vice-president of the Province of Quebec Association of Architects. The toast of "The National Association" followed the toast to "The King." It was proposed by Mr. P. C. Ogilvie, and responded to by the President, Mr. Powers. The President of the Toronto Association, Mr. R. Ross, proposed the toast to "The Montreal Association." Messrs. Joseph Laurier and Mr. Lamarche made suitable replies. Mr. W. H. Meredith proposed the toast to the "Invited Guests," which he said included the architect, the manufacturer and the journeyman. Mr. Mr. J. S. Archibald, Vice-President of the Province of Quebec Association of Architects, extended the hearty felicitations of that organization to the Master Plumbers' Association, and congratulated the latter upon the scope and usefulness of its work. Replies were also made by Mr. Howard, President of the Journeymen's Association, F. J. Travers, Peter McMichael, S. R. Brewer, A. D. McArthur, Alex. Robertson and J. L. F. Carron on behalf of the manufacturers. The toast of "The Ladies" was proposed in felicitious terms by Mr. Fred. Armstrong, of Toronto, and replied to by Mr. Harry Mahoney, of Guelph.

FALLACIOUS CEMENT TESTS.

Mr. D. B. Butler, Vice-President of the Society of Engineers of Great Britain recently read a paper before that body on the above subject, in which he referred to the uselessness of many of the tests now employed. In conclusion he stated that whilst recognizing the fact that exceptional circumstances require exceptional qualities of cement, he submitted the following standard specification as one which would ensure the delivery of a good sound cement suitable for the requirements of general engineering constructional work.

The whole of the cement shall be pure Portland cement, and shall conform to the following tests:

Fineness of Grinding.—To be such that when sifted through a standard sieve having 50 holes per lineal inch there shall not be more than one-half (½ per cent.) by weight of residue; when sifted through a sieve having 76 holes per lineal inch, there shall not be more than five (5 per cent.) of residue; and when sifted through a sieve having 100 holes per lineal inch, there shall not be more than 12 (12 per cent) of residue.

Time of Set.—A pat of neat cement gauged with the minimum of water at the normal temperature (60 deg. F.), and placed on a glass or other non-porous slab, shall not commence to set in less than eight minutes, or take longer than five hours to set hard.

Soundness, or Freedom From Expansion and Contraction.—A pat submitted to moist heat and warm water in the Faija apparatus for soundness at the usual temperatures—viz., 110deg. F. and 120deg. F. respectively, shall show no cracks or signs of expansion after 24 hours.

Tensile Strength. — Briquettes of neat cement, gauged with the minimum of water on a non-porous bed and placed in water 24 hours after gauging, shall carry an average tensile strain of not less than 350 lb. per square inch after three days, 450 lb. after seven days, and 550 lb. after 28 days from the time of gauging. Briquettes composed of three parts of standard sand to one part of cement by weight, treated as above, shall carry an average tensile strain of not less than 150 lb. per square inch at seven days and 250 lb. at 28 days from the time of gauging; but no matter how much greater strength may be developed at the earlier dates, both neat and sand briquettes must develop an increase of at least 50 lb. between each date.

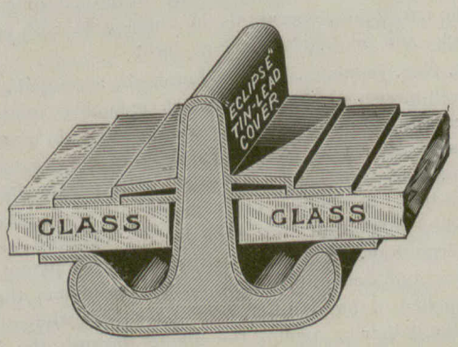
Building operations in Vancouver, B. C., have been retarded by a strike for an 8 hour day of workmen in the sash and door factories.

NEW STREET ENTRANCE TO CITY ARCADES, BIRMINGHAM.

BUILDING MATERIALS AT THE LONDON BUILDING TRADES EXHIBITION.

Our representative in charge of our British office, 22 Great St. Helens, London, E.C., has sent us particulars of some of the exhibits of building materials and appliances shown at the Building Trades Exhibition held in London last month. Out of the large number of exhibits have been selected for mention those which were thought to be adapted for use in Canada and which might therefore be supposed to have an interest for the readers of this Journal. In interviews with the firms whose exhibits are mentioned below, our representative learned that it is their desire to obtain suitable agents in Canada with whose assistance they might be enabled to place their goods on the Canadian market and make their merits known in this country. The firms in question are of first-class standing, and manufacturers' agents in this country would do well to open correspondence with them. By so doing, either direct or through our London office, they would be assisting the present movement for closer trade relations with Great Britain and at the same time would no doubt establish for themselves profitable business connections.

Mellowes & Company, Limited, Corporation street, Sheffield.—This exhibit consists of a wooden structure entirely glazed on Mellowes' patent "Eclipse" system. The bars which support the glass consist of a steel bar entirely encased in a tin lead cover,



having webs on either side, which are rubbed down on to the glass (see sketch). Contraction and expansion are amply allowed for. No paint or asbestos is required, and no maintenance is necessary. It was learned that the glazing has been in use for 22 years, and is absolutely waterproof.

The Newellite Glass Tile Company, Limited, 139 Cannon street, London, E. C., exhibited their glass tiles, a perfect wall lining, with a clean impervious surface, unaffected by frost or weather, and absolutely free from the defect known as surface cracking or crazing. The nature of the key is a matter of the greatest moment, and if the tile is to be relied on, this key must be elastic, because the glass expands and contracts much more than the cement on which it is fixed. They claim the key of the "Newellite" Tile is of this elastic nature, enabling the glass to yield to the action of the cement to which it is affixed, while at the same time most firmly secured. The company are prepared to accept orders under the most exacting guarantee of durability, or on contracts of approved magnitude they will agree to a 10 per cent. retention for a period of two years from the completion of the work.

The stone exhibited by Messrs. Mackay & Davies, Cardiff, is known as the Blue Pennant. It is of a deep blue color and well adapted to all kinds of engineering, architectural, and surveyors' work on account of its even grain, exceptional solidity and great resistance to crushing. As regards weathering properties, it is very hard and durable and is largely used and highly spoken of for curbing, channelling and paving purposes. It can be supplied in large blocks sawn for steps, landings, sills, etc. The specific purity of the stone is 2.68 and percentage of water absorbed after 24 hours immersion is only 0.28.

The exhibit of Messrs. Joseph Place & Sons, Limited, Darwen, consisted of white, colored and salt enamelled bricks. The white glazed bricks have a heavy glaze with a perfectly even surface and are in this respect specially noticeable. The colors are in great variety, every shade of color being exhibited and it is now possible to match almost any color that may be desired. The salt glazed bricks are especially noticeable because of the richness of the glaze and the uniformity of the coloring; these salt glazed bricks have now reached an excellence of quality which is seriously affecting the enamelled brick trade, and, which produce a wall having variety without shadiness as compared with the flat uniformity of enamelled bricks.

The Velvril Company, Limited, 29 New Bridge street, London, E. C., made an exhibit of Velvril paint which is said to contain no lead or linseed oil; it is supplied ready for use, is easy to work, quick drying, gives a smooth hard surface, is not affected by atmospheric influence, is elastic, durable, does not fade or blister, and is perfectly waterproof and non-corrosive. It is suitable for use on iron, steel, wood, cement, etc., also for all kinds of decorative work. Velvril priming paints and varnishes are specially prepared for use with the paint. The company would be pleased to receive applications for the Canadian agency.

Major & Company, Sculcoates, Hull, exhibit the effects of their wood preserving stain "Solignum" in a most effective manner. Their stall consisted of a model half timber house in an enclosure, a railing and gate in front separating it from the gangway. All the half timber work of the house was treated with the medium and dark shades of Selignum, and looked very well, these two shades being most suitable for this class of work. To exemplify its effect as a preservative, three post ends were exhibited which had been buried in the ground for four years. The post ends untreated with Solignum shows considerable rotting, whereas those treated with one and two coats were perfectly sound. Though largely used on all kinds of woodwork in England, there is believed to be still wider scope for Solignum in the colonies and other countries where timber buildings are more in vogue and where in consequence of the severe climatic conditions wood is more liable to perish. It is being used in South Africa and Australasia in ever increasing quantities and with great satisfaction. It renders wood impervious to the attack of the white ant, and is a reliable preventative against dry rot. There should be a great future for Solignum in Canada.

Messrs. Sissons Bros. & Company, Limited, Hull, showed on a screen some charming examples of wall decoration in Hall's washable distemper in conjunction with their white Japan paint. In these schemes of decoration the colors are of the utmost delicacy and bear ample testimony to the value of the distemper as a decorative material, to say nothing of its hygienic qualities, which are of course obvious. It is perhaps necessary to say that the distemper can be had in any color.

Newell Bros., 192 Grosvenor Terrace, Camberwell, London, S. E., showed specimens of their tiles and sanitary wall linings, including the opal glass tiles for which are claimed, as specialities, super-

lor thickness, permanent white backing, and ease of fixing. Mr. J. T. Newell the patentee, is one of the pioneers of the glass tile trade, and has produced the opal glass tiles as a result of long and careful study. The firm, who are contractors to H. M. Government and the principal hospitals, handle all kinds of sanitary ware and hospital fittings, and specialize on thick opal white microbe proof wall linings and slabs. Newell Bros. have a large export glass tile trade, and are selling in millions a very cheap and good glass tile.

Stanley Bros., Limited, Nuneaton, had on exhibition the following list of goods manufactured by them : Glazed bricks—brown, grey, granite, white and coloured ; glazed sinks, brown and amber ; glazed socket pipes and connections ; terra cotta, red and buff ; chimney pots—red, buff and salt glazed ; roofing tiles —plain and ornamental ; semi-encaustic paving tiles—plain and ornamental ; red and blue ridges, finials and ventilators ; blue pressed bricks, copings, garden tiles, and ventilating bricks ; red, blue and buff Staffordshire quarries, glazed and unglazed malt kiln tiles ; stoneware conduits, troughing, etc.

The Cloisonne Glass Co., 66 Berners St., Oxford St., London, W. The manufacture is called " Cloisonne Glass " and we cannot do better than quote the description of the inventors, and the logic of its name " Cloisonne." On a plate of glass of any texture or colour, the design is executed in thin metal strips or cloisons in precisely the same manner as in the older industry, but in the latter case a copper plate was used as the foundation upon which the strips were arranged. The design having wrought out to the required point, the cloisons are permanently cemented in place. The spaces between the cloisons are then filled in with small particles of glass of different textures or colours to carry out the design. The whole is then cemented to the transparent backing by a translucent material ; a second sheet of glass is hermetically cemented over the work, and neither temperatures, nor climatic influences can affect it further. Most artistic effects are thus produced, the colours being radiant with light and valuable when seen through or when looking upon them. Portions of the glasses may be left clear and thus a beautiful contrast effected.

E. Turner & Sons, Penarth Road, Cardiff, exhibited samples of the different stones they quarry, namely, grey and blue Forest of Dean stone, Tintern Abbey stone, Farleigh bed bathstone, Corsham bed bathstone, Corngrit bed bathstone, also the red St. Bees stone, for which they are agents.

Darwen Sanitary Pipes Limited, Darwen, Lan., exhibited samples of large pipes, consisting of 36", 30" and 24" diameter sanitary tubes in 3 ft. lengths, also sample of an ordinary 18"/6" street gullies 4 ft. deep, and samples of special channel interceptors, and yard gullies. This firm make a specialty of pipes of large diameter, and their works are exceedingly well equipped for turning them out in large quantities and first-class quality, their raw material being most suitable for 21" pipes to 36" diameter.

F. McNeil & Co., Lambs Passage, Bunhill Row, London, E.C., exhibited asphaltic roofing felt for exterior roofing, bituminous or inodorous felt and sarking felt for lining slate, tile and metal roof, and for lining corrugated iron buildings.

Colledge & Bridgen, Wolverhampton, are sole licencees and manufacturers of Fisher's patent window attachment which has been designed with the object of preventing the numerous accidents frequently occurring when cleaning widows from the outside. Fisher's patent fittings are neat, easily fixed and cheap, and can be applied to new or old sashes. They allow the sashes to slide up and down in the usual way, and also to be opened into the room for cleaning and other purposes.

Messrs. B. & S. Massey, Openshaw, Manchester, exhibited an extremely useful drawing desk for the especial use of architects and other draughtsmen. The board is so constructed as to allow the user to keep in a perfectly upright position or adjust the desk to meet his own wishes. The table which is part of the outfit is constructed to hold conveniently any designs the architect may have or whatever size they may be. The whole apparatus is handy, neat looking and should be a useful adjunct to a designer's office.

The Marmorite Artistique Syndicate, Ltd., 154 and 155 Salisbury House, London Wall, E. C.—This firm's exhibit of Marmorite was much admired at the Building Trades Exhibition. The material is a splendid substitute for marble, can be made to any design and in any colour; and is specially suitable for public or private buildings, luncheon rooms, lavatories, advertisement tablets, shop-fronts, etc.

The Crystalline Co., Ltd., The Platts, Stourbridge, exhibited snow white, opaque colored, porcelain opal, overglaze, and semi transparent tiles—A new product manufactured from porcelain opal with a "grip" or "key" back to enable it to adhere perfectly to cement.

An effective exhibition of "Mezotil" a new and attractive mural decoration, was shown by the London Tablet Co., of Sydenham, whose proud boast it is that their product is the result of a combination exclusively English, namely, that it is made in England with English capital and by English labour. This wall covering consists of sheets of zinc of the normal size of 3 x 2 feet, enamelled and decorated in various styles, the designs hitherto employed being chiefly in imitation of tiles. As a clean, bright and inexpensive wall decoration this material deserves more than cursory attention. It is of course non-absorbent and vermin-proof.

The Permanent Decorative Glass Co., Lancaster, Manchester, and at 36 Basinghall St., London, E. C., exhibited examples of their well-known "Florite Opal" tiling and metal wall decorations, including a large variety of pattern tiles, imitation marbles, granites, ornamental borders, &c. They had also a tiled partition showing several excellent examples of their work. The advertisement of this company will be found in the British section of this paper.

Mr. W. E. Farrer, Cannon street, Birmingham, exhibited an automatic alternative distributing apparatus for small bacteria beds, such as are required for use for large public buildings, as asylums, isolation hospitals, barracks, &c. Distribution is provided for by means of an automatic tipper discharging alternately into two sets of light perforated cast-iron channels supported about 1 inch above the filtering medium. Torfit urinals, by the use of which flushing is rendered unnecessary ; an improved apparatus for flushing sewers, closets, etc.; a patent lattice-gear penstock or sewerage valve, a rust-collecting chamber for the base of sewer ventilating columns, &c. ; and a selection of his sluice, air and other valves were also shown.

Messrs. Mather & Platt, Salford, exhibited a model of their automatic mechanical sewage distributor which ,according to the analytical report by Inspector Leigh, gives admirable results. A model may be seen here of their patent gravity filter, which consists of a large circular iron tank, open at the top, and resting on a cast-iron chamber in which the filtered water collects before its discharge through the outlet-valve. The collecting-chamber is separated from the filtering-tank by a dished iron plate into which a large number of brass nozzles of special design are screwed, the object of which is to insure the effective use of all parts of the quartz bed during filtration, and a proper distribution of the water used for washing out. On this plate rests the quartz bed in graded layers, passing from the coarsest at the bottom to the finest at the top. The filtering-tank is fitted, at a few inches above the surface of the quartz bed, with an annular channel communicating by a number of openings with the tank, and into which open the inlet-valve for unfiltered water and the wash-out discharge valve. This annular channel affords a free outlet for the wash-out water, and is a marked improvement on any former arrangement, there being nothing whatever to impede the free discharge of the wash-out water. A third model represented the Archbutt-Deeley water-softening apparatus, all the mechanical operations in connection with which are very simple, and the labour involved light.

Messrs. Geo. Jennings, Ltd., of Lambeth, arranged a number of their well-known sanitary appliances, including some admirable specimens of fitted baths. These are shown in many forms and styles of decoration. A large variety of closets were also shown, including the "Century Syphonic," an ornamental as well as useful adjunct to which is the semi-circular porcelain flushing cistern, which advantageously replaces the old and somewhat unsightly iron tank. A new bath valve, Jenning's patent duplex attracted a good deal of attention, as by its means the water can be supplied to the bath hot, cold or blended, while all fear of scalding the bather or spoiling the enamel through the inadvertent turning on of the hot water first is obviated. The exhibits here comprised urinals, housemaid's sinks, vegetable, salad, poultry, fish, and kitchen sinks, wash-up, bed-pan and slop sinks for hospitals, and other cognate items.

Messrs. Shanks & Co., of 81 New Bond street, were represented at two stands, and showed many of their well-known make of baths

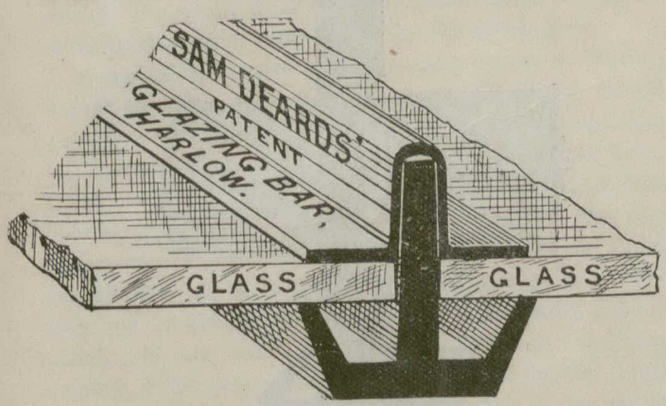
in the several varieties, as plunge, spray, canopied and tubular, in fireclay and porcelain enamelled iron ; water-closets and supply cisterns, improved kitchen and scullery sinks, lavatories in vitro-porcelain and fireclay, &c.

"Velure," shown by Messrs. C. Chancellor & Co., Clerkenwell Road, is a new and perfected Japan paint, superseding varnish, with remarkable spreading, elastic and weather-resisting properties. It is sanitary and washable, and it is claimed that it will not crack, chip, peel, blister or fade. It is stocked in 120 colours and any shade can be matched. Samples of "Stripso," another specialty of this firm, were also shown. This is a paint or varnish remover which has satisfactorily withstood the tests of time and experiment, and been proved to be an efficient labour-saver.

At the stand of Messrs. Norton & Gregory, (Westminster Palace Gardens) was shown a new black-line process for the reproduction of architectural and engineering drawings, &c. The results produced by this process can only be characterized as admirable, every line being perfect and the colour not less so. Drawings can be reproduced on paper or linen as may be desired, and the reproductions can be coloured as readily as the drawings. In addition to the beautiful appearance of the prints, this process possesses a great advantage in the rapidity with which the work can be turned out as compared with other "black-line" processes. We may add that Messrs. Norton & Gregory undertake architect's perspectives, which they execute from plans and elevations.

Ripolin, Ltd., 110 Fenchurch Street, E. C., London, showed results of applications of paint to various materials. A conspicuous object at this stand was a panel delicately tinted in flat Ripolin, the effect of which was eminently artistic and pleasing. Ripolin, Ltd., are introducing a new filling, which they strongly recommend for use with Ripolin, whether glossy or flat, for which it prepares a beautifully smooth, hard surface to which the finishing coat can be applied to the great economy of the latter.

Sam Deards "Patent Glazing" for all classes of glass roofing was extensively shown at this Exhibition. We have pleasure in showing our readers an engraving of this glazing bar, for which the advantages claimed are : Its simplicity, cheapness, and durability, and best of all from a colonial point of view the possibility that it can be easily fixed by builders, plumbers, or even unskilled labor. This steel glazing bar with lead cap is made in three sections, C. E. and F., and the steel bars can either be



enamelled, galvanized or lead covered. The same can be supplied all ready for fixing, cut to any desired lengths and easily packed for shipment. Agents are wanted in Canada for this glazing, and full drawings, prices and samples will be forwarded on application to Sam Deards, Limited, 34 Old Broad street, London, E. C., or Victoria Works, Harlow, Essex. There is also a special system for glazing on wood rafters and for fireproof roofs where no wood-work is required ; all glazing bars are made "self-locking."

The Rhodes Patent Sash-Hanging Co. had an extremely interesting exhibit of a valuable invention for raising the heaviest sashes instead of the ordinary and usually inefficient smooth-grooved pulleys, worked by sash-cords, chains or wires. This invention enables the largest and heaviest of sashes to be opened and closed by a child. The fittings consist of a cog-wheel or teeth-pulley and steel chains, which are fixed to the sash and frame in the usual way. The chains are chemically treated to prevent rusting, and there are no intricate parts to get out of order.

The Warrington Bond Iron Syndicate, Ltd., of Manchester, exhibited their patent wall-tie. This is a particularly strong and effective tie, and the fact that upwards of five millions of them have been supplied, shows that it is rapidly coming into favour. There are three varieties, one for cavity work, one for solid work, and a special flat tie which may be used either for cavity or solid work.

Messrs. Candy & Co., Ltd., Newton Abbot, showed a large selection of glazed bricks of various descriptions, but of uniformly excellent quality and colour, granite vitrified paving bricks and channels, buff architectural terra-cotta, stoneware sewerage pipes, gullies, interceptors, &c.

NOTES.

Reports from St. John, N. B., state that never since the time of the great fire in that city has the building trade been so brisk ; the supply of competent artisans is far below the demand.

The recent building strike in New York tied up $200,000,000 of capital and occasioned a loss in profits alone of $8,000,000 to the contractors and $13,000,000 in wages to the workmen.

On competion of their contract for the building of the King Edward Hotel, Toronto, Messrs. Illsley & Horn, gave an informal dinner to the sub-contractors and foremen on the different departments of the works.

The police magistrate of Toronto recently imposed a sentence of ten days in jail upon two workmen convicted of having assaulted another workman with the purpose of compelling him to give up his employment. In imposing sentence the magistrate remarked : "It's no use putting a fine on these men," their union will pay it, and it will not be a sufficient deterrent."

The fire loss of the United States and Canada for the first quarter of this year was materially below the average of the same period in recent years. The records of the New York Journal of Commerce place the losses for the three months ended March 31, 1903, at $39,164,800, or $9,000,000 less than in the first quarter of 1902, and $6,500,000 below the corresponding period yf 1901. The March fire losses were unusually light. amounting to but $9,907,000.

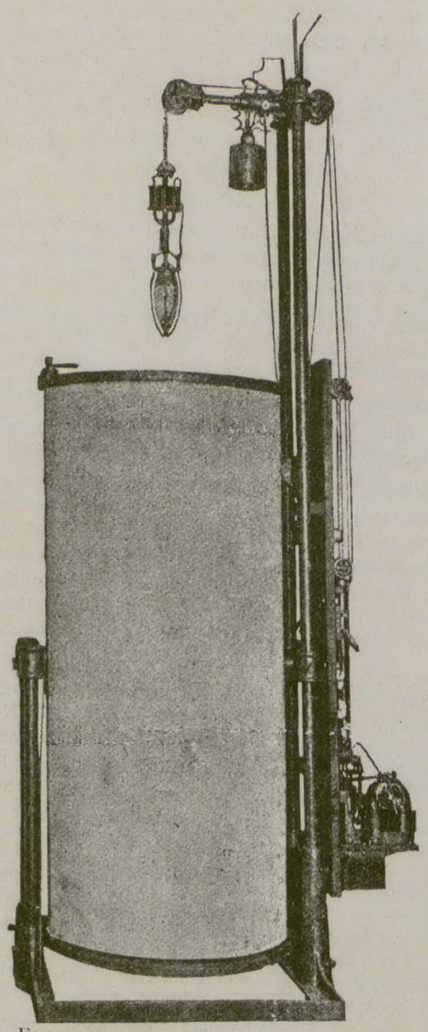
The British Vice-Consul at Lille reports that the violent campaign against the use of white lead for painting has severely affected this industry, of which Lille is the principal French centre ; it is very doubtful, he adds, if white lead can be effectively replaced, various substitutes hitherto failing to give satisfaction. Largely increased importations of oxide of zinc, and introduction of a new product called "litophone," suggest that other countries, including the United Kingdom and Germany, quite as interested in sanitary questions as France, profiit by the anti-white lead campaign to the detriment of the French producers.

There are three methods of curing chimneys which do not vent well, applied by Count Rumford and all smoke doctors since his time. The first is lengthening the chimney at the top, this increases the quantity of heated air in the chimney, and gives more power or head by increasing the difference between the weight of the air per foot, in and outside of it ; the second is contracting the chimney at the throat ; this increases the speed with which the heated air passes through it, and gives a heightened initial velocity to the smoke when beginning in its course up the chimney. The third is when there is a deficiency of air in the apartment to feed the flame and blow up the fire, putting ventilators into the sides of the apartments, or into the windows or doors.

A writer in the London Builders' Record gives the following method of removing grease spots on Watman drawing paper :— First remove as much of the grease as is possible by placing the drawing between sheets of clean blotting paper (preferably white) and ironing the spots with a moderately-hot flat iron, constantly changing the position of the blotting paper so as to expose a fresh unsoiled place and continuing this until the ironing no longer causes any discoloration. Then, if it is required to still further discharge the grease, take fresh blotting paper beneath the drawing, and, away from light or fire, pour over the spots benzine, which, as it passes through the paper, will carry the grease with it. It may be necessary to repeat the latter operation several times before complete success is attained ; and be sure and get benzine (syn. benzol) as benzoline is often solp as benzine.

ELECTRIC BLUE-PRINTING APPARATUS.

The importance as well as the general utility of the application of electricity to blue-printing appeals to every architect, engineer and draftsman, to whom the



ELECTRICAL BLUE-PRINTING APPARATUS.

production of blue-prints with the best of solar facilities has doubtless often been vexatious.

The dark and cloudy days of winter, as well as the rainy days in the summer and at all times during the year when the light is poor, smoky or irregular, makes the advantage of having an electrical equipment of great benefit to the possessor. The accompanying illustrations show one of the latest and most advanced types of machines for printing by artificial light.

The apparatus consists of a cylindrical printing frame, composed of two heavy curved plates of glass, bedded in soft material in an adjustable, though rigid, frame, together with two tubular uprights which support the arc lamp and automatic drive mechanism. This drive operates the lamp, having means for lowering it through the cylinder and then automatically raising it again to its former position.

The cylindrical frame revolves on trunnions, so that it can be swung to a horizontal position, which is the most convenient method for inserting or removing tracings and paper from the frame.

In operating, the cylinder is revolved to a horizontal position, and the tracings and sensitized paper are placed around the outside of the cylinder, being confined by stout canvas covers which are drawn tight by turning a lever, thus ensuring perfect contact between tracings, sensitized paper and the glass. The cylinder is then swung to the opposite horizontal position and the same manipulation repeated, after which it is returned and locked in vertical position and is ready for printing.

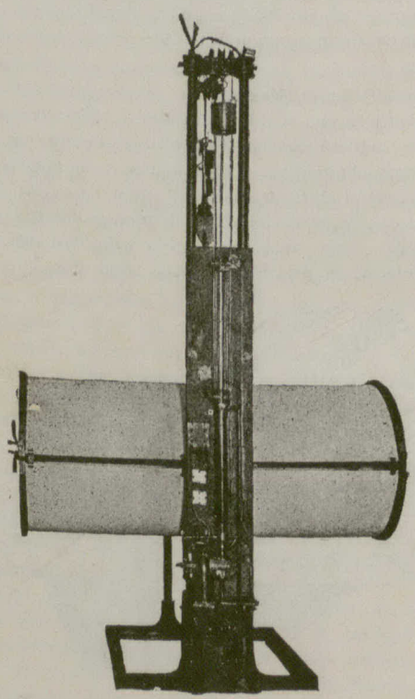
By simply touching a lever the arc lamp starts in its descent through the centre of the cylinder at a speed which can be regulated to suit the sensitiveness of paper employed. When the lamp has reached the lowest point of printing surface, it automatically reverses its motion and quickly returns to its original position above the cylinder.

The characteristic features claimed for the apparatus are as follows :

The machines are self-contained; no bracket or pulleys on wall or ceiling are required.

The automatic drive mechanism for raising and lowering the lamp is a novel, ingenious and reliable device. The downward movement of the lamp is even and steady, and can be regulated at will, to take from five seconds to an hour, depending upon the degree of sensitiveness of paper used.

When the lamp has passed the printing surface, thereby completing the exposure, the motion of the lamp reverses automatically, and returns quickly to its original



ELECTRICAL BLUE-PRINTING APPARATUS.

position. No time is lost and no hand labor is required.

The limit of the motion of the lamp can be set according to the size of the prints to be made.

The arc lamps furnished with the machine are of a special pattern and the best adapted for the purpose, giving the highest actinic effect and a strong, uniform and steady light.

When an advertiser complains that his advertisement does not interest the readers of a paper, he might do better to change his ad-writer than to change his paper. The public is anxious always to be interested, and if the advertisemeut fails to do it, the fault probably lies with the advertisement and not with the public or the newspaper.—PRINTERS' INK.

OFFICE PRACTICE REGARDING HOURS AND VACATIONS.*

The employees of our office petitioned recently for an extension of the Saturday half-holiday, which we have been giving during the summer season, to continue the whole of the year, and, upon making inquiries from a number of architects as to their custom, and finding it is quite general to give the half-holiday for the whole year, we granted the request of our employees, and anticipate that this additional leisure time will be as much appreciated by the members of the firm as by our assistants. It then occurred to me that it might be of interest to this association to know what is the general custom in regard to office hours, holidays and vacations, and therefore sent inquiries to a number of architects, and have replies from nineteen offices, which are sufficiently representative of the profession to indicate the general custom.

Three offices have a seven-hour day ; six have seven and one-half hours, and eleven have eight hours ; more than one-half, therefore, having eight hours as their working time.

Two offices begin work at 8 o'clock, one office at 8:15, twelve offices at 8:30 and three offices at 9.

One office has set no time for beginning work, the employees being expected to work eight hours, and those who come early leave early, and those who come later stay until their eight hours are completed ; the architect claiming a certain convenience in this for a small office, though, of course, it would be destructive to discipline in a large office.

The hours for closing are divided about equally between five o'clock and half-past five. There is an allowance of one hour for lunch in nearly every case.

In regard to Saturday half-holidays, six offices give such holidays during the summer months, twelve offices during the whole year and one office closes at 3 p.m. on Saturday, as I understand, for the whole year.

In regard to vacations, the custom seems to be universal to allow two weeks' vacation with pay to all employees who have been in the office a year or more, but not to those who have worked for a shorter time. It would seem that there ought to be a general uniformity of practice in all architects' offices in one city in regard to the matter of office hours and holidays and vacations. Apparently in Chicago the two weeks' vacation to permanent employees is generally recognized, and the Saturday half-holiday, which has been coming to be recognized more and more in the community, will doubtless be extended to take in the whole year by all architects, when they learn that the majority of offices are already granting that privilege.

In the matter of office hours, the preponderance is decidedly on the side of the eight-hour day, although there are enough offices that work for a shorter time to present a decided lack of uniformity. This is a matter which might be well discussed by this association, and perhaps a uniform custom could be brought about.

There are other matters of business management of our offices which could be taken up with advantage, as, for example, the question of overtime—as to the policy of working evenings, and whether there should be extra pay for such overtime. My own opinion on this point is that overtime should be avoided whenever possible, and that in most instances this can be done by the exercise of foresight. To work evenings for any length of time will certainly exhaust the energies and render the daywork less efficient, so that the gain is comparatively small and not in proportion to the additional effort, and that better results can be secured by urging every one to extra exertion during the regular office hours, at the time when there is a rush of business, and supplementing by additional help ; and that in the case of permanent employees there should not be extra pay for overtime. If every one knows that in case the work is allowed to drag along and is not done on time they must stay and work at night, it will be a stimulus to each one to finish his work during the day and thus avoid the need of overtime ; and when such an effort is insufficient, then the working force should be increased during the day, rather than to overwork by the addition of hours.

This brings up a point—that we often find it difficult to get extra help when we need it and would be glad to pay for it, and thus are forced to overwork ourselves and our employees. There should be some bureau of intelligence to supply draughtsmen on short notice. I have recently learned of such a bureau, namely, the Engineering Agency, in the Monadnock block, but this agency limits its work to supplying men for permanent positions. Now, probably the most frequent use that an architect would have of such an agency is to get one or two men to do tracing for perhaps not more than a week, and the fees charged by this agency are higher than one could afford to pay for positions lasting only a week. It seems to me that it would very properly be one of the operations of this association to have a bureau of information for architects' offices, and if our secretary is willing to undertake such work, I am certain a fee could be established that would reimburse him for the necessary expenditure of time. The object of this association is to help its members in every way possible, and it would certainly be a great assistance to our profession to where we can send on short notice and get extra help. At the same time such a bureau of information would be of great benefit to draughtsmen. One of the advantages of locating an architect's office in a large city is the facility with which skilled assistants can be found, and we could still further increase that advantage by such a bureau of information. If this work should be taken up by the association, its benefits would properly be limited to members of the association and thereby increase the value of membership.

*Paper read and discussed before the Chicago Architects' Business Association and the Illinois Chapter, A. I. C., April 14, 1903, by Normand S. Patton, architect.

THE SIMCOE STATUE.

The statue of John Graves Simcoe, first Governor of Upper Canada, a reproduction of which appears on our illustration page, unveiled May 27th, 1903, is the work of Walter S. Allward, a young sculptor of Toronto, and was won in competition from English, Scotch, and Canadian artists.

The Bronze is 9-6″ in height ; the pedestal is of Stanstead granite, 10′-3″ in height and was designed by the sculptor and cut by the McIntosh Granite Company.

The bronze casting was made by the Henry Bonnard Bronze Company, of New York.

TELE-PHOTOGRAPHY FOR ARCHITECTS.

We are indebted to the London Builder for information regarding the advantages for architectural photography, of using the tele-photo lens. By its use it is possible to take a piece of detail on a large scale at a height impossible with the ordinary lens. The following suggestions of the author may be useful to those who may care to experiment with tele-photography. He says: "All photographs of detail should be taken in diffused light if possible. If the sun is shining, sometimes an obliging cloud will obscure it for a time sufficiently long to enable an exposure to be made in diffused light. If a series of photographs is to be made of a large building or cathedral, begin work in the morning on the south side and go to the west as soon as the sun interferes; the north side may be safely left to the afternoon, when any exposures should also be made upon the east end. The final focussing of the tele-photograph should be made with the same stop in the front lens as that which is used for making the exposure. Do not take tele-photographs of detail against the sky if it can be avoided. Somewhat different conditions come into force when more distant views of buildings are the objects to be portrayed. In many cases sunlight will be helpful, especially if the sun is not too high and overpowering."

PRESERVATION OF IRON IN CONCRETE.

In the spring of 1901 the German Department of Public Works undertook a thorough investigation of the condition of the concrete slabs and the iron imbedded in them in a revetment wall built in 1890 in Berlin. The wall consisted of reinforced concrete slabs between beam posts, resting on piles cut off below water and held horizontally by back-stays, which is reported in a recent issue of the Zentralblatt der Bauverwaltung. The reinforcing consists of horizontal 3/8in. round iron rods in number depending upon the earth pressure acting on the slabs, and of vertical rods about 3-16in. in diameter. The vertical and horizontal rods are tied together by wire so as to form a netting.

To investigate the condition of the slabs and the iron imbedded in them, nine slabs were chosen which showed cracks and other injuries, and twelve slabs which had a perfectly good appearance. Thirty-two holes about 10in. by 10in. were chiselled out, completely uncovering the rods, and at all places also, where marked injuries were noticed, the concrete was removed completely from the rods. The horizontal rods were 0·04-in. to 0·4in., and the vertical rods 0·4in. to 1in. from the faces of the slabs. In an injured slab three horizontal and two vertical rods were uncovered. The greater part of the upper horizontal rod was covered by a thin layer of rust, and the mortar, from the rod to the face, was destroyed. The two lower rods were free of rust. The vertical rods were somewhat rusty at several spots. In another injured slab, the uncovered rods, four horizontal and four vertical, were all equally rusty.

In a slab, which appeared on the outside to be in perfectly good condition, three horizontal and four vertical rods were uncovered. The two upper rods were rusted the same as in the slab first mentioned, but the lower rod was free of rust. The four vertical rods showed slight rusting at several spots. In another uninjured slab, all the rods uncovered, four horizontal and three vertical were found to be free from rust.

In a slab in the upper row, the concrete had scaled off for about 4in. above the bed joint, and short distances each side of the post. The uncovered rods were much coated with rust on the face. In another slab the concrete had cracked off near the lower edge for about 4in. A horizontal rod laid 0·2in. from the face had become loose, and was much rusted on the face. In still another slab, seven horizontal rods became loose because the concrete layer covering them had cracked off. The rods were much rusted. Three other slabs showed the same injuries. The concrete layer, which was only 0·12in. thick, had cracked off, and the rods which were laid bare began to rust.

Some conclusions as to the building of reinforced concrete slabs of this type and the arrangement of the imbedded rods may be based on these observations. Rods with incipient rust were found in a relatively great number in injured slabs and in slabs in good condition externally, but destruction of the concrete was found almost invariably only where the rods were near the external face. At such spots, having only a thin protecting layer of cement, it was found that the rod was much rusted on its front only while the rest of the surface remained clean. Apparently the injury to the slabs may have been caused partly by the improper location of the rods, even, when free from rust, and partly by the use of rusted rods. Wherever rods free of rust protected by a good layer of cement of 0·3in. to 0·4in. and more in thickness were uncovered, the slabs showed no injury. It was also observed that the mortar adhered less strongly to the rusty rods than to the rods free of rust. From the latter the mortar had always to be removed by the point of a hammer.

Since the greatest bending stresses take place at the middle of the slab, it will be well to bend the rods so that they will be near the centre of thickness at the supports and the requisite distance from the face in the middle. No greater difficulties will be encountered in tamping the concrete than are encountered with straight rods which have to be bent in at the ends because of the flanges of the I-beam post. No accuracy is required for the curve of the bent rod.

At the session of the Ontario Legislature which has recently closed, a bill was passed extending the powers of the Toronto Art Museum to enable it to accept large donations and bequests, borrow money and expropriate land. Mr. Byron E. Walker in urging before the Committee of the Legislature the passing of the bill, pointed out that the Association had already bequests and donations sufficient to enable it to proceed with the erection of an art gallery and museum as soon as the enlarged powers were secured. We may therefore expect to see this important project assume tangible form in the immediate future.

The traveller through the streets of our cities these early summer days, writes Mr. Barr Ferree, in the Architects and Builders' Magazine, will note a prodigious amount of building going on, but perhaps not much architecture. Although building should be architecture, unfortunately it frequently is something else. It is a pity that this should be so, for once a building is erected it is likely to stand some time, and if it is not truly interesting it had better not be built at all. The architect who writhes at unfriendly criticism should bear in mind that what is written may be lost and destroyed; his building, be it ever so atrocious, must stand, and stand before the public which is helpless to remedy it. The bitterest thing a critic ever said is mild and harmless compared with the ceaseless and unavoidable permanency of a building.

ON ARCHITECTURAL NOMENCLATURE.

Lovers of architecture should be glad that their love is not one of the "ologies," and is practically free from those Greek and Latin compounds which it seems to be the delight of scientists to introduce into the English language, says a writer in Building News. Though architecture is essentially a Greek word (as it is fitting it should be), it does not suggest the "specialist" which clings to the "ologies," and if we examine the architectural vocabulary, it is surprising how simple and elementary very many of the terms are. It is very pleasing, too, when we examine the relation between each feature and its architectural name to find that we can trace its origin, nature, and purpose through that name.

If such a vocabulary is made out, a very great number of the most common terms used in building will be found to be borrowed from natural forms, especially those of animals, and the physical system of the animal kingdom finds its counter-part in architecture.

Thus the very terms of the art show the noble principles on which the true forms of it is developed —they show both the laws by which a building stands, and the canons by which it is decorated. If the terms are belied or violated, their meanings, which remain, at once point out the barbarisms, and show up the falsehoods. Just as when we call a spade a spade, and someone chooses to call it a pitchfork, nobody is deceived who has any idea of what a spade really is.

Firstly, as to the laws of building in a universal sense. Starting with the solid foundation, the footings spread out to receive the walls, with their face and back. The wall is capped by the coping (Dutch cop = head), and where columns exist they have their capital (Latin caput = head). Further, the walls undergo the process of toothing. The vaults are completed with ribs, haunches, and crown ; the roof has its hips, the rafters their heels. The window sills are throated. The very building, finally, has its wings. (It is interesting to note that the epithet of "wingless" applied to the little temple on the Athenian Acropolis is now understood by some to refer to the building itself and not to "Victory"— a theory which gains in probability on remembering the Erectheion in close proximity, which has so many wings).

Leaving the general structure of the skeleton of the building, we find among moulding such charateristic terms as swan's neck, bird's beak, dog-tooth, and also the wave moulding.

The last is especially pleasing as it is almost the solitary expression in architecture of the ocean. While it is true that flowers or foliage afford the quintessence of architectural ornamentation*, the sea contains such varied and grand forms and waves, that a "style" developed from wavecrests and ripples would be almost as fascinating and as equally magnificent as the most elaborate system of tracery or carving, with "foil", leaf, or "lobe" as a basis. The "wave-tracery" (suggested, no doubt, in the Flamboyant curves, but there literally developed from flames) is really a phase of Gothic yet to be developed and admired. Something far different, please, from Greek Fret or guilloche spirals, of which Ruskin wrote scornfully by pointing out that "into which the great Greek architect transforms the sea." But conceive how a wave would cast itself around a huge bell capital, and fall in dripping foam down the shaft ! It is surprising that in such a watercity as Venice, with all the wealth and dexterity of Byzantine marble work on capitals and mouldiugs, no expression of their waterways and lagoons is conceived. The Japanese might do it, as surely they have yet to develop a style of architecture in which the peculiar qualities of Japanese art can exert their influence. The spirit of waves, as above suggested, is found very strongly expressed in the colour-print of Hiroshige and other artists. Perhaps few people have such a vivid way of catching the extract conventional forms of striking natural features. The same remarks might be applied to cloud forms.

Curiously enough, the parts of a ship do find their way into our architectural vocabulary. The keel moulding is characteristic, and there is cabling. On some American plans we lately noticed the delightful use of the word deck for a kind of verandah, and possibly cabin and saloon were originally taken from the ship. As there is no nobler art than shipbuilding, it is appropriate that its influence should be felt in architecture. The anchor is used in decoration, and Venetian masts will soon be adding to the gaiety of our street architecture.

In Greek architecture, if we may examine the original terms, we find the same association with life. The frieze was "life-bearing," and can anyone conceive a frieze more justified in bearing such a title than that of the Parthenon ? Look, too, at the Caryatides, or "the women of Caryæ," supporting their eternal burdens of portico or roof. In the cornice we get the corona or crown. It is not quite clear why the pediment (i. e., foot) should be so called unless the idea was mixed up with that of the pyramidal form of a tripod acting as a foot. Then, again, there is the Greek moulding astragal, from one of the vertebræ of the neck.

Leaving architecture strictly, in carpentry and joinery the same nature of words holds good—witness dovetail (the French "swallowtail"), foxtail, herringbone, and tusk tenon.

We have by no means exhausted the list, and may mention bird's-mouth, bull-nose, feather-edged, tongue, dog-legged stairs. And, in conclusion, we may remind the weary reader of those delightful "heavenly twins" who put forth "flying buttresses" as signs of bad weather.

*In flower tracery we get the rose window. Ruskin has suggested a series of tracery devoted to every variety of flower, just as the Japanese, in their exquisite, natural flower decoration, devote one room to one flower.

AMERICAN LEAGUE FOR CIVIC IMPROVEMENTS.

The annual convention of the American League for Civic Improvement was held at Chautauqua, N. Y., July 13th to 18th, and the Ontario Association of Architects was represented by Mr. Wm. R. Gregg. There were conferences upon Rural, Village, City and National Improvement, at which representatives from many localities spoke, reporting a most encouraging year's work. Lectures were given by Mr. Clinton Rogers Woodruff upon "Municipal Progress," Mr. W. R. Eastman upon "Library buildings," Mr. Albert Kelsey upon "The Model City" and Mr. J. Horace McFarland upon "The Harrisburg Plan." Also two series of lectures were delivered, one by Prof. Chas. Zueblin on Contemporary Society and the other by Mr. John Quincy Adams on Art.

Mr. J. Horace McFarland was re-elected President and Mr. E. G. Routzchen is Secretary. An annual dinner and an afternoon's excursion on the lake contributed to the enjoyment of the delegates. The next annual meeting will be at St. Louis.

The Canadian League for Civic Improvement which was formed lately in Toronto is a similar organization.

CORRECTION.

We regret that a mistake occurred in the advertisement of the Henry Richards Tile Company appearing in the British Supplement in our May and June issues. The name connected with the Company's Sanitary Works should have been printed Edward Johns & Company, not Edward Jones & Company.

—THE—

CANADIAN ARCHITECT AND BUILDER

A Monthly Journal of Modern Constructive Methods,

(With a Weekly Intermediate Edition—The CANADIAN CONTRACT RECORD).

PUBLISHED ON THE THIRD WEDNESDAY IN EACH MONTH IN THE INTEREST OF

ARCHITECTS, CIVIL AND SANITARY ENGINEERS, PLUMBERS DECORATORS, BUILDERS, CONTRACTORS, MANUFACTURERS OF AND DEALERS IN BUILDING MATERIALS AND APPLIANCES.

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

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NOTES.

In the building of the City Hall of Philadelphia, a portion of the brickwork of the tower was laid up with cement mortar and another portion was laid in lime mortar. The work was faced with marble. As a result, wherever the marble facing was backed with brick in lime mortar, the marble facing crushed and spalled and had to be cut away and refaced. Wherever cement mortar had been used no harm came to the marble facing.

THE BUILDING STRIKE IN TORONTO.

The strike of the carpenters and builders' laborers inaugurated in Toronto more than two months ago has failed. The contractors offered the carpenters 32½ cents per hour, or within 2½ cents of their demand, an increase of 10 cents per hour above the wages they were receiving two years ago. This offer was refused and the resulting deadlock has continued ever since. The builders' laborers demanded 30 cents per hour and went out on strike rather than accept the contractors' offer of 27 cents. On several occasions recently the strikers sought conferences with the Builders' Exchange but were told that the employers had made their best and final proposition. In his last letter written but a few days ago, the Secretary of the Exchange intimated that that body had withdrawn its Committee and positively declined further negotiations. This brought matters to a climax, and the strike of the carpenters and laborers was declared off. The early termination of the painters' strike may now be looked for. On excellent authority it is learned that five hundred men are now at work in this trade, and that of this number about 460 are receiving 30 cents or less per hour. Under these circumstances there is not the ghost of a chance for the strikers to succeed in their demand for 35 cents per hour.

NOTES.

The master plumbers of Sydney, Nova Scotia, have recently formed an association.

Mr. W. J. Burroughes, formerly a well-known Toronto plumber, now of London, Eng., is at present on a visit to Canada.

Robert Snarr, a prominent contractor, of Toronto, died at his home in that city last month, aged 51 years. Among the important structures erected by him were the Home Life Building, McMaster University and the Mercer Reformatory.

The Trade Papers Publishing Co., High Holborn, London, Eng., has published Part I of a work by J. Petrie devoted to an explanation of the methods to be adopted for graining and marbling. The work which is to be published in fourteen parts, is illustrated by colored plates with explanatory notes.

A DISCOVERY IN BRICK MAKING.

Mr. D. J. Acheson, of Niagara Falls, N. Y., claims to have discovered why the Egyptians used straw in the manufacture of their bricks. According to Mr. Acheson, it was not alone as a binding material, but because the tannin extracted by the soaking of the straw in water added greatly to the strength of the bricks. By treating clay with an extract of straw Mr. Acheson has shown a 50% increase in tensile strength and an increase of plasticity, with a decrease of shrinkage.

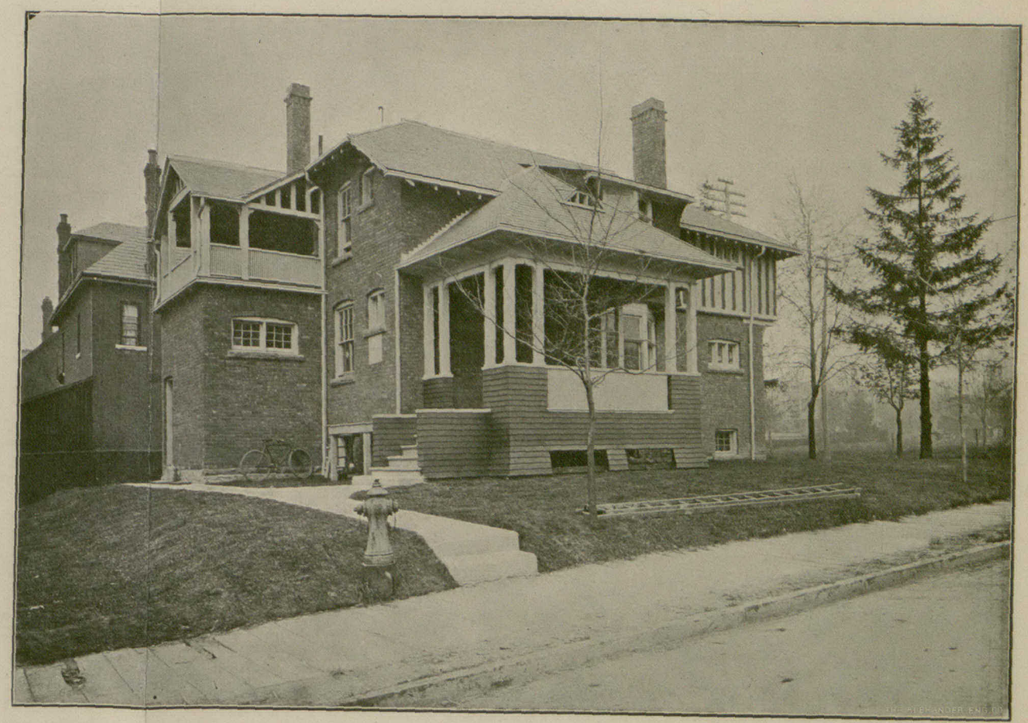
The clay is worked with water in which straw has been boiled. So little as one-half of 1 per cent. of tannin is said to develop a wonderful effect, the clay requiring 13 per cent. less water to make it soft. The maximum effect of the process and treatment, however, seems to be obtained by the use of 2 per cent. of tannin in a ten-day treatment. The treatment is merely keeping the clay wet with water in which tannin is dissolved, which can be done in vats.

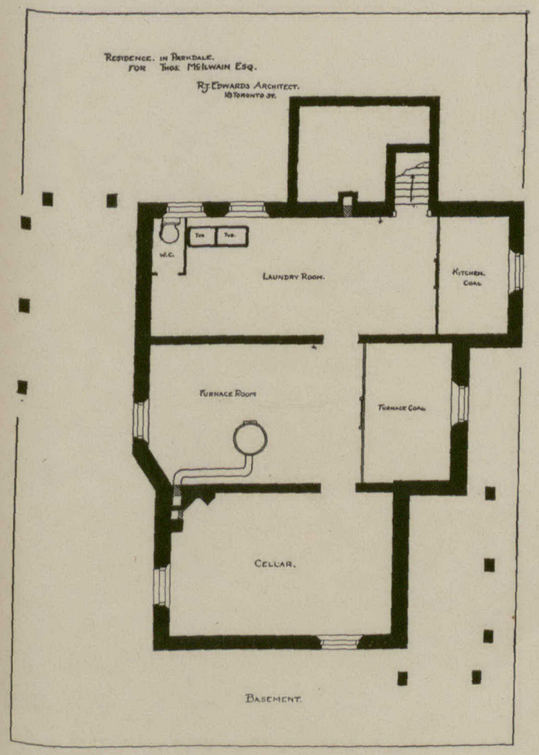
Besides the above-mentioned 50 per cent. increase of strength in the burnt form, the clay in the sun-dried form acquires an increase of 350 per cent. in tensile strength.

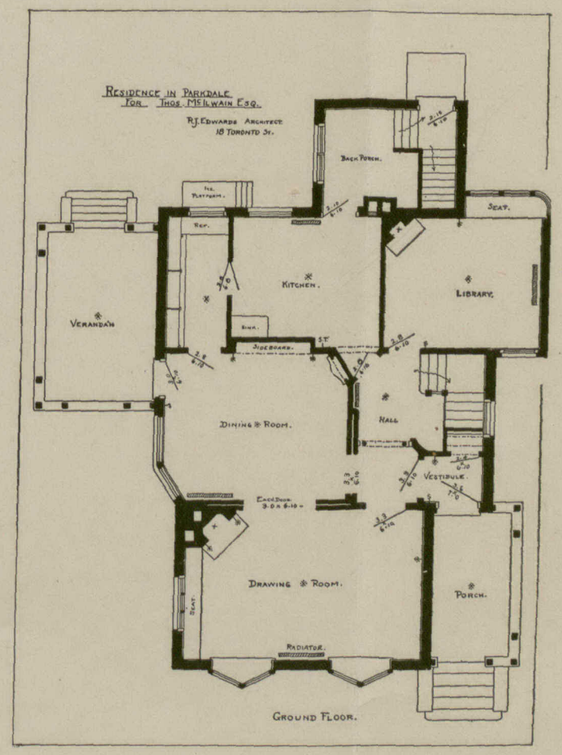
As a result of this discovery Mr. Acheson has patented a combination of clay and tannin under the name of "Egyptianized clay.

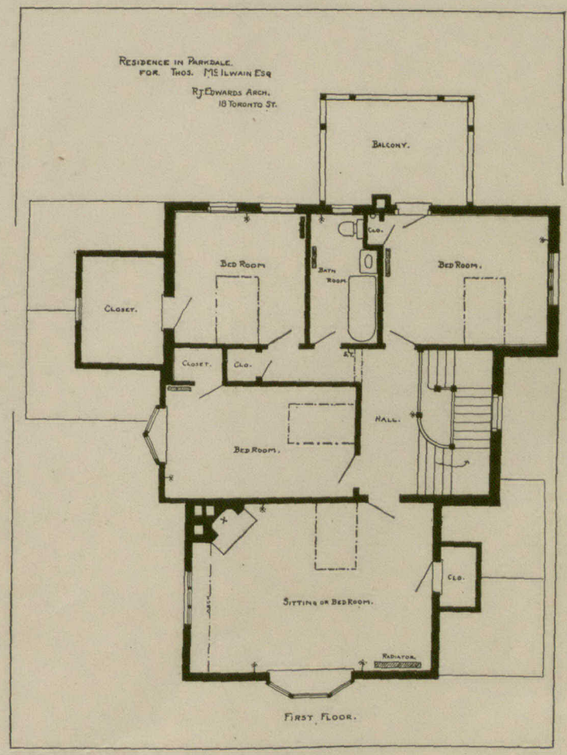
AN OPPORTUNITY TO BE IMPROVED.

The meeting in Montreal next month of repesentatives of the leading Chambers of Commerce of Great Britain should prove an event of great importance to Canada. No effort should be spared to afford these representative business men of Great Britain opportunity to see every part of this Great Dominion, and judge for themselves of its resources and trade possibilities. The subject of preferential trade within the empire, now the leading topic in political and commercial circles throughout Great Britain, will doubtless constitute one of the leading subjects of discussion at the Montreal Conference.









HOUSE IN SPENCER AVENUE, PARKDALE, TORONTO.

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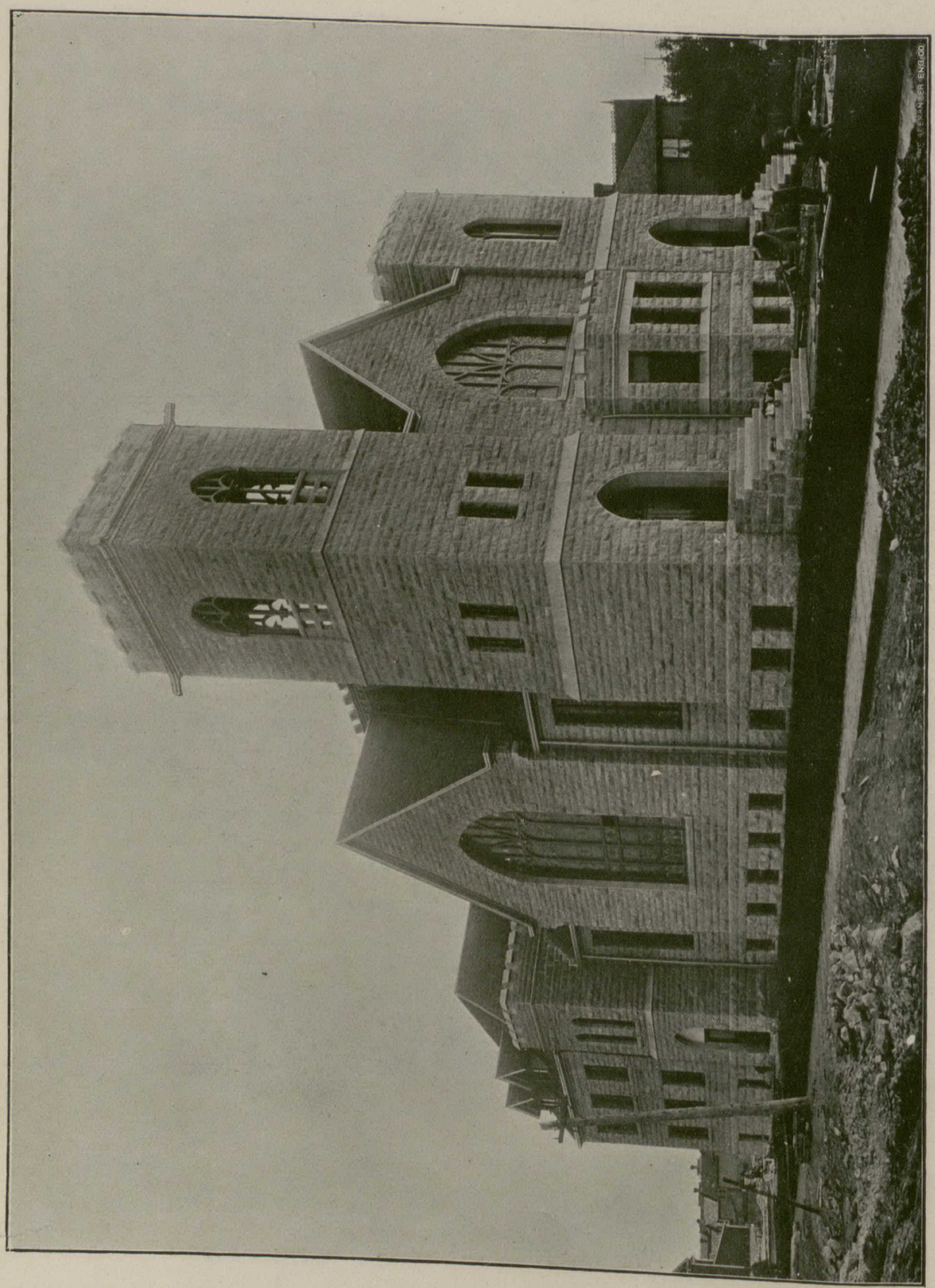

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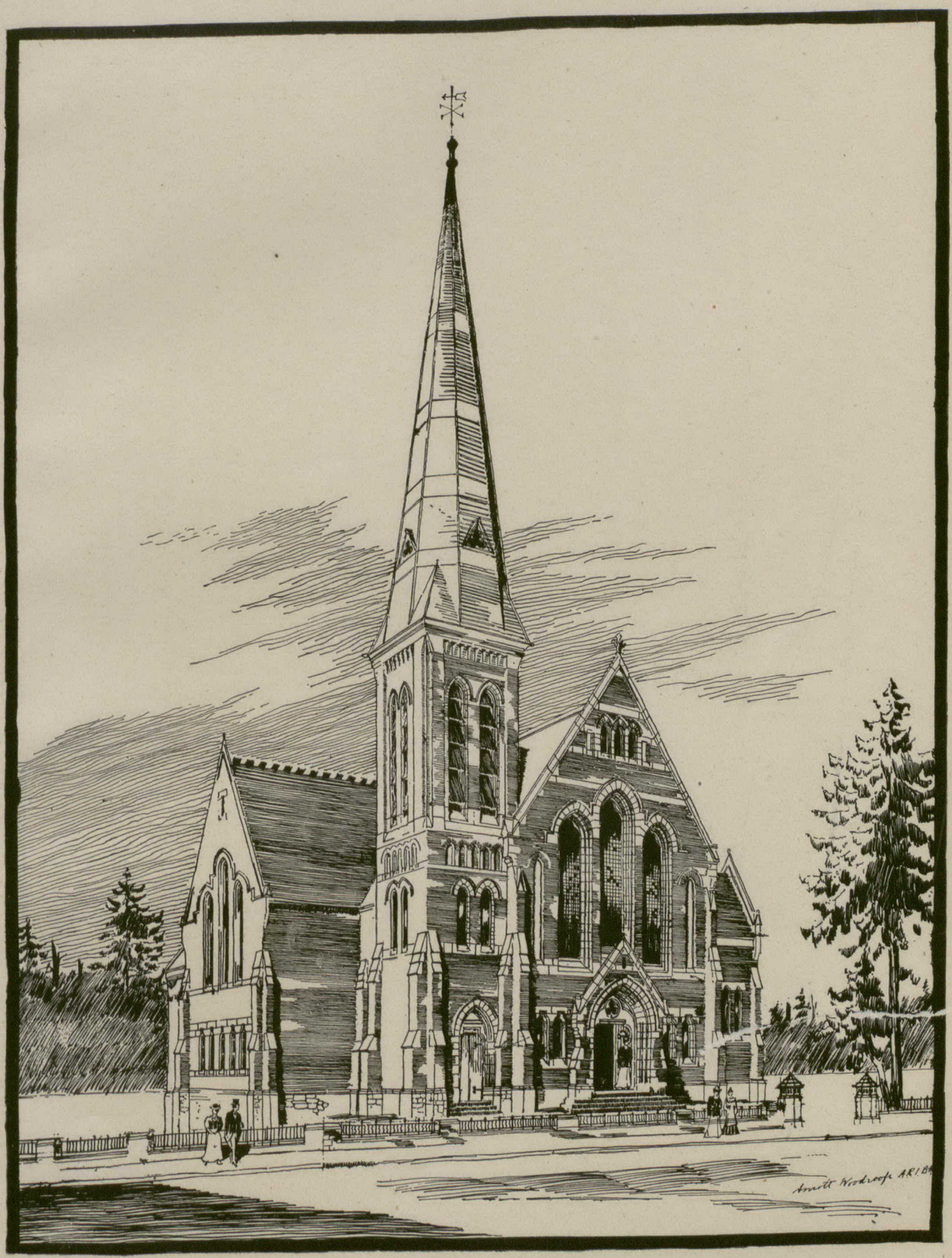

COMPETITIVE SKETCH FOR PRESBYTERIAN CHURCH, VANCOUVER, B.C.

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HOUSE IN CLUNY AVENUE, TORONTO.

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STATUE IN QUEEN'S PARK, TORONTO, OF JOHN GRAVES SIMCOE, FIRST GOVERNOR OF UPPER CANADA.

WALTER S. ALLWARD, SCULPTOR.

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NOTE.

The following is said to be a method of determining the proportions of lime and sand present in mortar, accurate enough for all general purposes:—Take a small quantity of the mortar and dry it by heat. Weigh it carefully, then put it in a glass dish and pour on a strong solution of hydrochloric acid, and leave for some time to allow it to dissolve all the lime. Then boil until dry, and pour on again plenty of water. Then pour on to a paper filter (to be bought at any chemist's) previously weighed; dry the filter with the contained residue, and weigh. This weight represents the earthy matter and grit, and the loss of weight found by deducting it from the weight of material before treatment is the amount of lime.

BUSINESS NOTES.

The Samuel Cabot Co., of Boston, have recently issued a pamphlet, containing the report of Prof. Charles D. Norton, of Massachusetts Institute of Technology, on the tests for sound-proofing the dormitories of the New England Conservatory of Music. This book has been gotten up in a very neat form, and contians valuable data regarding the advantage of using sheathing and deafening quilt for sound deadening.

Interlocking Rubber Tiling is gaining greatly in popular favor principally because of its usefulness, from a sanitary and noiseless standpoint. Many handsome designs in this line have been recently introduced by Canadian manufacturers. Among these the Dunlop Tire Co. figure prominently. Some time ago they added this feature to their business and have been remarkably successful in their efforts to impress the public with the good qualities of rubber tiling.

The engineers of the Canada Paint Company are now engaged in drawing up plans for their extension on Hunter street. The gratifying increase of business which has come to this company necessitates larger premises than those occupied at present. The Canada Paint Company has purchased a tract of land on Hunter street, bounded by Chatham street and Notre Dame lane, which has the merit of being central and close to their present extensive plant upon William street, Montreal. The Canada Paint Company employ their own engineers, carpenters and machinists, and the new works will be erected by their permanent staff and will be the most complete yet devised upon this continent. It may not be generally known that the Canada Paint Company, Limited, is by far the largest paint and varnish manufacturing company in the Dominion of Canada, and the only company in Canada who ship large quantities of painting material to the United States, in spite of the high tariff which our American friends have against us. Shipments are also made to Great Britain and to the Australian Colonies.

NOTES.

Experiments on the effect of double glazing for windows seem to prove that the best results are obtained when the distance between the sheets of glass is from 2¼ to 4½ inches.

When we build, let us think that we build public edifices forever. Let it not be for the present delight, nor for the present use alone, let it be such work as our descendants will thank us for; and, let us think, as we lay stone on stone, that a time is to come when those stones will be held sacred because our hands have touched them and that men will say as they look upon the labor and wrought substances of them: "See! this our fathers did for us."—John Ruskin.

British Trade Supplement

The Publishers of "The Canadian Architect and Builder" have arranged to furnish information respecting British Exporters of Building Materials and their goods advertised in this paper, and will keep on file at their Offices, Imperial Building, Montreal, and Confederation Life Building, Toronto, **Catalogues, Price Lists, Etc.**

Catalogues will be forwarded to Architects and Building Supply Houses in Canada on application.

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