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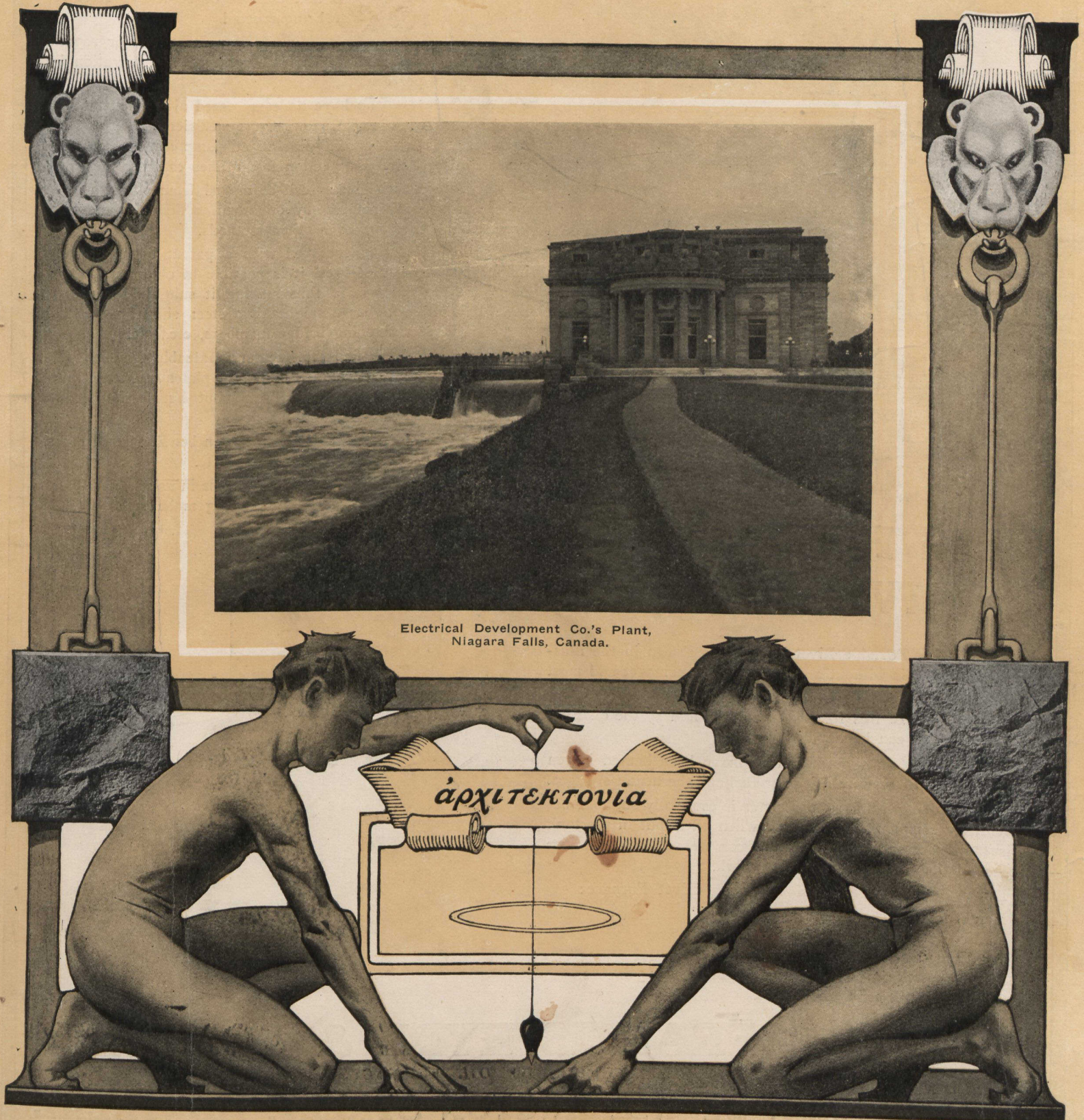
# CONSTRUCTION

" A JOURNAL FOR THE ARCHITECTURAL ENGINEERING AND CONTRACTING INTERESTS OF CANADA "

Vol. 2, No. 12.

OCTOBER, 1909

\$2.00 PER YEAR  
25c. PER COPY



Electrical Development Co.'s Plant,  
Niagara Falls, Canada.

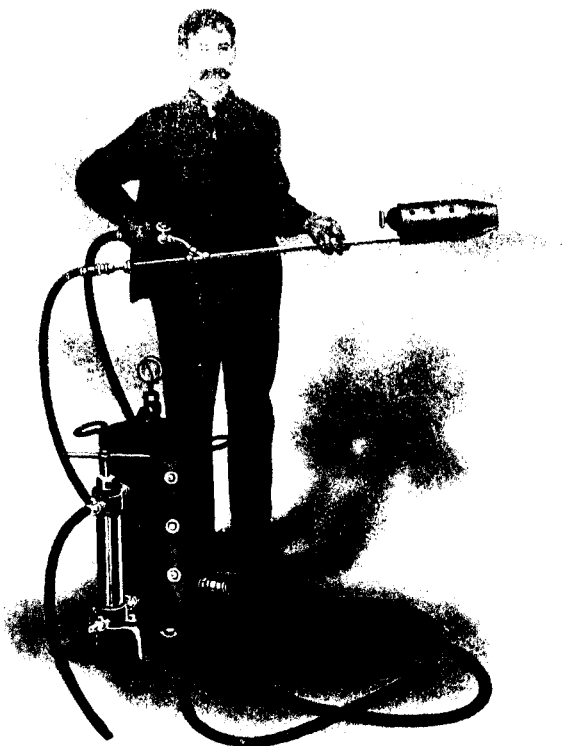
- MONTREAL -

OFFICE OF PUBLICATION  
'SATURDAY NIGHT' BUILDING,  
T O R O N T O

- LONDON, ENG. -

# THE KING PORTABLE TORCH HEATER

For Independent Use or with Compressed Air. Burns Kerosene or Crude Oil.



**T**HE King Torch Heater has been designed and perfected to meet the growing demand for a portable volume of intense heat, which can be applied directly to the work and which is available for use at a moment's notice.

How often it happens that a piece of structural steel requires heating previous to being erected.

Consider the time gained in making alterations or repairs on the job, besides decreasing the cost of the operation by more than 50 per cent.

Manufacturers who have no compressed air equipment will find the self-contained Heater a very efficient tool, as it is equipped with a substantially arranged pump for the compression of oil and air. Connection to air lines can also be made.

The King Torch Heater can be moved from place to place and operated satisfactorily by one man, which also means a great saving in labor over other methods.

As this Heater is equipped with a patent burner having unique mechanical features, it is possible to obtain a heat of 2,200 degrees Fahrenheit, thus making it suitable for use on such difficult work as straightening steel shafting, heating heavy rails, straightening bridge members, etc., etc.

Boilermakers will find this Heater invaluable for such purposes as heating and straightening boiler plates without removing same, laying on patches, taking out buckles on crown sheets and many other operations.

Steamfitters can use it to advantage in bending large pipes, taking off rusted couplings or unions, etc.

Foundrymen can save time and expense in using this Heater for starting fires in cupolas, skin drying molds, etc.

## THE KING PORTABLE RIVET FURNACE

**T**HE King Portable Rivet Furnace as shown in the illustration, is without a doubt the most compact and most economical oil furnace on the market.

The capacity of this furnace is only limited by the quantity of rivets which can be handled.

As many as four thousand rivets have been heated in ten hours at a cost of seventy cents for fuel and the heater's wages.

For small shops, this style furnace is especially suitable, being entirely complete in itself, and when oil is put in the tank it is only necessary to attach the compressed air or steam hose; and the furnace is ready to work.

Dimensions and weight of The King Rivet Furnace:

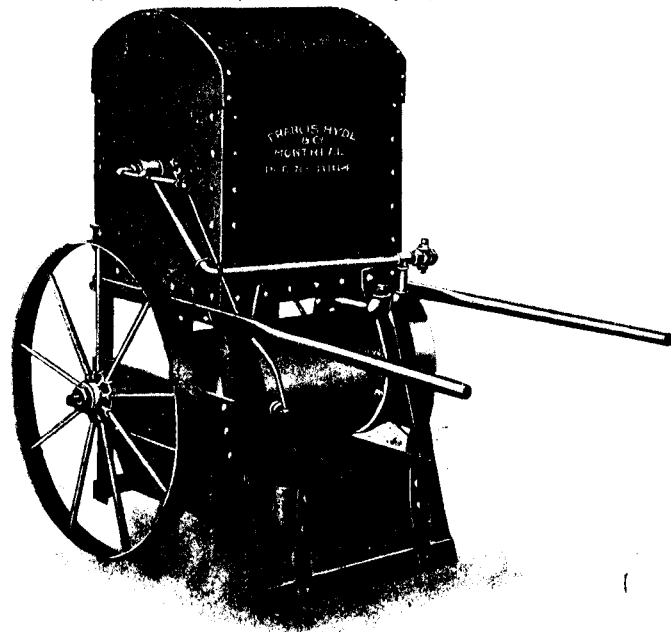
Height, over all, 51 inches.

Width, outside wheel hubs, 3 feet.

Total length, over all, 5 feet 4 inches

Dimensions of furnace opening, 10 inches by 5 inches.

Capacity of oil tank, 10 gallons.



Designed and Manufactured by

**FRANCIS HYDE & COMPANY**  
MANUFACTURERS OF OIL FURNACES

Head Office and Works : **31 WELLINGTON STREET, MONTREAL**

What's in  
a Name...

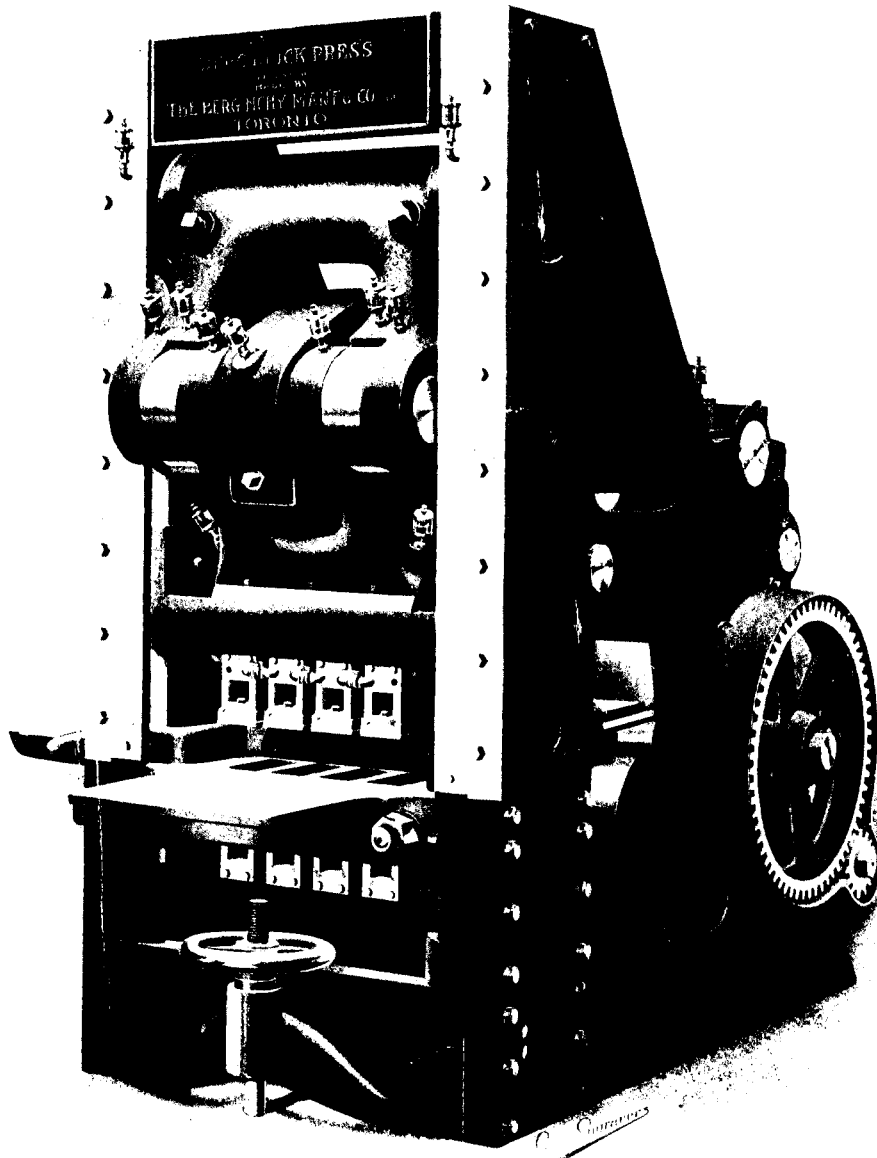
SIMPLICITY  
STRENGTH  
DURABILITY

ACCESS  
TO ALL  
PARTS

GREATEST  
PRESSURE

BEST  
PRODUCT

The "Berg Press" is the Highest Development in the Art of Brick-making Machinery, so Pronounced by the U. S. Government



IMPROVED BERG BRICK PRESS

THE BERG PRESS EXCELS

for

Shale Pressed Brick  
Clay Pressed Brick  
Sand-Lime Pressed Brick  
Sand-Cement Pressed Brick  
Fire Brick

THE BERG PRESS

Gives THREE Distinct PRESSURES

Result is :

No Granulated Centers

THE BERG PRESS

HAS ALL WORKING PARTS ABOVE CLAY LINE

THE BERG PRESS

is fitted with "THE BERG PATENTED MOLD BOX" - the DELIGHT of brickmakers, and which many others have tried to IMITATE

All Sizes and Shapes  
Can be Made

Molds Can be Changed in a  
Few Minutes

Owing to the  
SIMPLE MECHANICAL  
CONSTRUCTION

Cut Gearing, and many other steps forward in Improvements, and built of the Highest Grade of Material and Workmanship. Fully Guaranteed as to its Success.

Manufactured by its inventor in Toronto, Canada, exclusively. Also all equipments for Pressed Brick Plants to make Sand-Lime Brick, Sand-Cement Brick, Shale Brick, Clay Brick and Fire Brick

CORRESPONDENCE SOLICITED

The BERG MACHINERY MANUFACTURING CO., Limited

Office and Works: Bathurst and Niagara Sts., Toronto, Canada

# “MONARCH”



## PORTLAND CEMENT

Mills at Montreal, Que., and Lakefield, Ont.

ANNUAL CAPACITY ONE MILLION BARRELS

Unexcelled for Strength, Fineness, Color and Uniformity

Highest Quality--Fulfilling requirements of all standard specifications.

Sales and General Offices:

Ottawa Bank Building - Montreal, Que.

**THE LAKEFIELD PORTLAND CEMENT CO.**

# “SAMSON”

CANADA'S OLDEST AND MOST RELIABLE BRAND

**THE OWEN SOUND PORTLAND CEMENT CO. LIMITED**

OUTPUT 1,500 BARRELS  
PER DAY



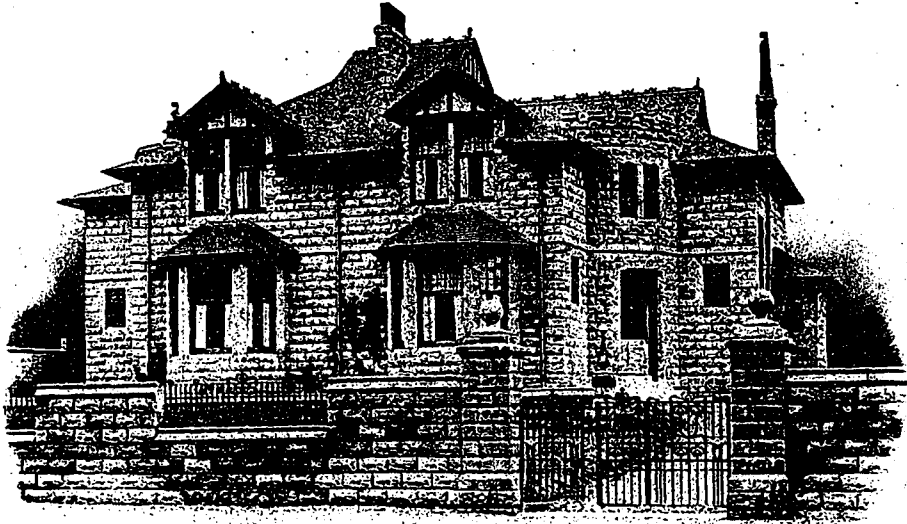
SPECIAL FACILITIES FOR  
HANDLING LARGE ORDERS

Write for Quotations and Pamphlet, etc.

“CEMENT, HOW TO USE IT, WHERE TO BUY IT.”

**GENERAL SALES AND HEAD OFFICE, OWEN SOUND, ONTARIO**

# This Artistic Concrete House Proves the Wonderful Possibilities of the IDEAL Concrete Block Machine.



**T**HE wide scope, the splendid possibilities of artistic concrete block construction could not be more effectively presented than in the house reproduced above.

Examine each detail of its architecture; note the rich, artistic, ashlar effect, with panel trim around windows and doors. Walls around the property are also built of blocks, introducing the use of ornamental molds.

Perhaps in no other city than Paisley, Scotland, would it be so fair to compare this concrete house with stone construction. Practically all of the buildings in that city are built of stone. Yet the concrete block houses being erected there compare more than favorably in appearance.

Scotch and English contractors have advanced rapidly in the artistic use of the concrete block as made possible by the IDEAL Face Down, Interchangeable Hollow Concrete Block Machine. The house here presented is one of very many beautiful structures found in Scotland and England built of IDEAL-made blocks.

Canadian builders have only scratched the surface in ornamental concrete block construction. They should impress customers with the advantages of concrete block and with the artistic opportunities afforded by the IDEAL machine.

Every year the demand for concrete block construction increases. You must know the possibilities of the IDEAL—you must make use of its advantages if you are to meet modern advancement.

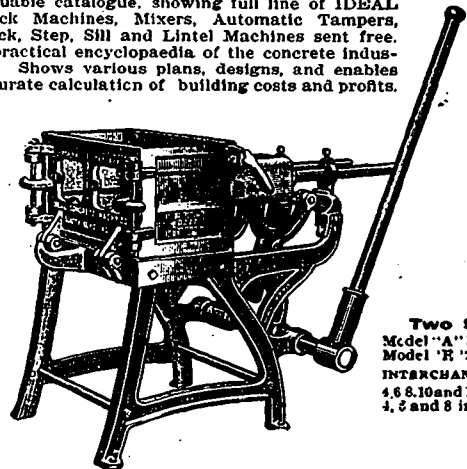
Within the next decade the hollow concrete building block bids fair to become the leading factor in

construction work. By the system of manufacture employed in the "IDEAL" machine it is manifest that blocks may be made which in every respect will be equal to the finest cut stone, granite, marble or pressed brick, and at a tremendous reduction in cost.

Block faces are easily changed in the IDEAL and the machine instantly adapted to every size and angle, producing blocks of any height and width within capacity.

The IDEAL is the only machine legally built on the face down principle permitting rich effects in facing and coarse material for back of blocks.

Valuable catalogue, showing full line of IDEAL Block Machines, Mixers, Automatic Tampers, Brick, Step, Sill and Lintel Machines sent free. A practical encyclopaedia of the concrete industry. Shows various plans, designs, and enables accurate calculation of building costs and profits.



**Two Sizes:**  
Model "A" 16 in. length  
Model "B" 24 in. length  
INTERCHANGEABLE TO  
4, 6, 8, 10 and 12 in. widths  
1, 2 and 8 inch heights

## IDEAL CONCRETE MACHINERY CO., LTD.

221 KING STREET, LONDON, ONTARIO

Canadian Sales Agents, **MUSSENS LIMITED**, Montreal, Toronto, Winnipeg, Vancouver

# TERRANO FLOORING

## Some Recent Contracts:

Horse Show Building .....	Winnipeg, Man.
Havergal College .....	Winnipeg, Man.
Fire Hall .....	Ottawa, Ont.
Tuberculosis Hospital .....	Ottawa, Ont.
Public School .....	Ottawa, Ont.
Grand Trunk Baggage and Express Building .....	Ottawa, Ont.
St. Joseph's School .....	Montreal, Que.
Thos. Davidson Manufacturing Co. ....	Montreal, Que.
Ecole Meilleur .....	Montreal, Que.
St. Charles School .....	Montreal, Que.
Stonewall Jackson Cigar Factory .....	Montreal, Que.
Laurentide Pulp and Paper Co. ....	Grand Mere, Que.
Children's Hospital .....	Halifax, N.S.
Ursuline Convent .....	Quebec, Que.
Tuberculosis Hospital .....	Montreal, Que.
Lymans Limited .....	Montreal, Que.
Holborn Restaurant .....	Montreal, Que.
Old People's Home .....	Longue Pointe, Que.

## EADIE - DOUGLAS LIMITED

SALES AGENTS

Montreal

Toronto

Ottawa

Winnipeg

## Buildings in Canada Constructed of Burmantoff's Terra Cotta

Supplied by Eadie-Douglas Limited  
22 St. John Street, Montreal Canada

### List of Buildings Already Erected:

	ARCHITECTS.
McDonald Engineering Building .....	Montreal, Que. .... P. E. Nobbs.
McGill Union Building .....	Montreal, Que. .... P. E. Nobbs.
Congregation of Notre Dame .....	Montreal, Que. .... Marchand & Haskell.
Linton Apartments .....	Montreal, Que. .... Finley & Spence.
Bell Telephone Exchange, Mountain Street .....	Montreal, Que. .... W. J. Carmichael.
Bank of Nova Scotia .....	Winnipeg, Man. .... Darling & Pearson.
Canadian Bank of Commerce .....	Brantford, Ont. .... Darling & Pearson.
Metropolitan Bank .....	Toronto, Ont. .... Darling & Pearson.
School of Education .....	Toronto, Ont. .... Darling & Pearson.
St. James' Parish House .....	Toronto, Ont. .... Darling & Pearson.
Canadian Bank of Commerce .....	Lethbridge, Alta. .... Darling & Pearson.
Canadian Bank of Commerce .....	Charlottetown, P.E.I. .... Darling & Pearson.
Bank of Montreal .....	Vernon, B.C. .... Peden & McLaren.
Molsons Bank .....	Morrisburg, Ont. .... Weeks & Keefer.

### List of Buildings Under Contract:

Jacobs Building No. 1 .....	Montreal, Que. .... Mitchell & Crighton.
Bank of Montreal .....	Saskatoon, Sask. .... Peden & McLaren.
Port Garry Station .....	Winnipeg, Man. .... Warren & Wetmore.
Rideau Club .....	Ottawa, Ont. .... H. C. Stone.
Lake of the Woods Milling Co. Building .....	Montreal, Que. .... Ross & Macfarlane.
Murphy Building .....	Montreal, Que. .... Ross & Macfarlane.
Canada Life Insurance Building .....	Ottawa, Ont. .... Weeks & Keefer.
Molsons Bank .....	Revelstoke, B.C. .... A. F. Dunlop.
Jacobs Building No. 2 .....	Montreal, Que. .... Mitchell & Crighton.

# NONPAREIL Cork Board Insulation

FOR

## Cold Storage Buildings, Packing Houses, Abattoirs, Refrigerators, Etc.

INSTALLED IN HUNDREDS OF THE MOST MODERN COLD STORAGE PLANTS, PACKING HOUSES AND  
BREWERIES IN THE UNITED STATES, CANADA AND MEXICO.

## NONPAREIL CORK FLOOR TILING

Made of Pure Compressed Cork and is Unequaled  
For Ease and Comfort in Walking or Standing.

### Suitable for Banks, Hospitals, Halls, Bathrooms, Etc.

FURTHER PARTICULARS AND CATALOGUES ON REQUEST.

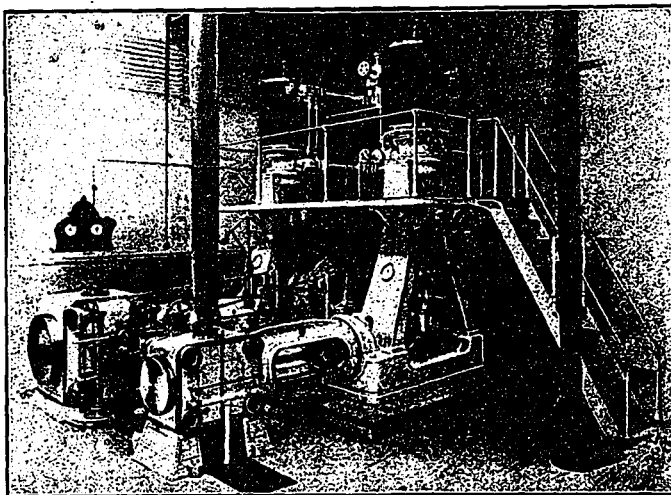
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## Ice Making and Refrigerating Machinery

SUPPLIED AND INSTALLED ON

### The York Manufacturing Company Systems

For ICE MAKING PLANTS, COLD STORES, ABBATOIRS, PACKING HOUSES  
BREWERIES, DAIRIES, HOTELS, APARTMENT HOUSES, ETC.



Vertical Single-acting Compressor Driven by Compound  
Steam Engine.

### Special Machines for Small Plants,

Suitable for Butchers, Dairies,  
Fish and Game Dealers, &c.

HORIZONTAL AND VERTICAL  
COMPRESSION PLANTS

ABSORPTION PLANTS.

Ammonia, Fittings and Supplies  
kept in Stock.

CATALOGUES SENT ON REQUEST.

## THE KENT COMPANY, Limited,

425-426 CORISTINE BUILDING  
MONTREAL, P. Q.



We Have Always in Stock:

# Roofing Paper

at all our yards

# Crushed Granite

For Granolithic Work

# Crushed Stone

For Fireproof, Sidewalk or Road Construction

# Cement

Building Stone      Lime      Builders' Supplies

C.P.R., Grand Trunk, M.C.R. and T.H. & B. Railway Delivery

## ROGERS SUPPLY COMPANY

Head Office: 3 King Street East, Toronto

Phone Main 4155

YARDS:

Foot of Berkeley St.  
Foot of Bathurst St.

Foot of Church St.  
256 Lansdowne Ave.

C.P.R. Crossing, North Toronto  
G.T.R. Crossing, Pape Ave.



Entrance, Royal Bank, Toronto.

Carrere &amp; Hastings and Eustace G. Bird, Associate Architects.

## A Canadian Building Finished with **Missisquoi Marble**

Missisquoi Marble is manufactured in Rough Blocks, Cut Building Stone, Slabs, polished and unpolished, Monuments, Stair Treads, Floor Tiles, etc., and the various shades in which it can be supplied adapt it to the working out of any color scheme desired. The shades include light grey, dark grey, green grey, cream with green vein, cream with mottle green, cloudy green and pink.

### **THE MISSISQUOI MARBLE CO., Limited**

Philipsburg, Quebec

Coristine Building, Montreal

District Sales Agents: David McGill, Montreal; Eadie Douglas, Toronto; Wm. N. O'Neil & Co., Vancouver; C. N. Barclay, Winnipeg; General Contractors' Supply Co., Halifax.

# ROBERTSON'S MARBLE PUBLIC LAVATORIES



PLATE E-88.

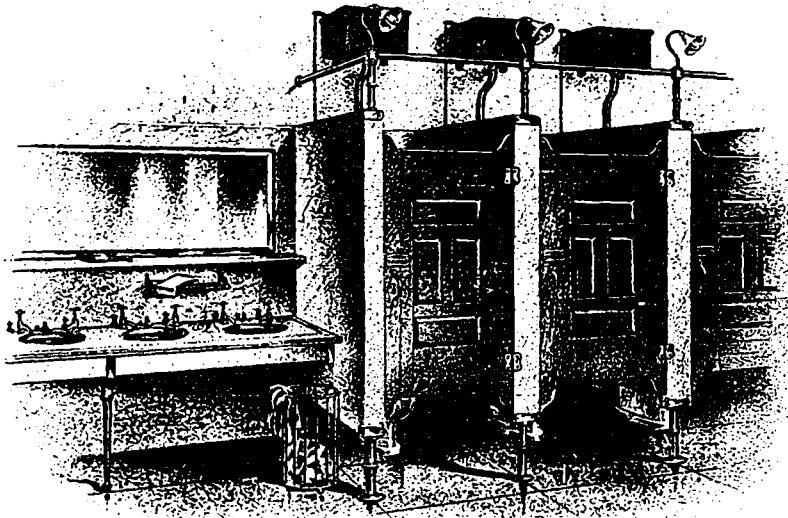


PLATE E-89

We show the above plates as suggestions for Marble Public Lavatories. Sanitary efficiency and handsome appearance are the paramount features in making these arrangements. Our facilities in marble manufacture enable us to furnish the most elaborate work at moderate figures.

Lavatories or Stalls of any kind of marble, any design or size made to order. Prices on application.

**THE JAMES ROBERTSON CO., Limited**

MONTREAL

TORONTO

WINNIPEG

ST. JOHN, N.B.

# Elevator Facts

Last month we mentioned the fact that elevator designs keep changing and improvements are constantly being made. We well remember the first electric elevator made in Canada, and the proud feelings of the makers at that time, but it certainly was, in comparison to present day elevators, a crude affair—it worked however, but it did not work well. Just like some present day airships, it came down with a bump sometimes. Sometimes it would not go up, to come down, and naturally there was trouble. The electrical apparatus, like the elevator it operated, was imperfect, and at times would give a firework demonstration worthy of a grand stand performance, but through constant effort and expensive experiments a result has been obtained which now puts electric elevators in a class of mechanism as nearly perfection as possible. We have men who are paid well to improve and simplify our elevators, and to-day we have the most simple and up-to-date elevator machine made. We have less complicated working parts than on any elevator made. Our machines are the essence of simplicity. We make all types of electric, hydraulic, belted, hand power, elevators and dumb waiters. We install from Coast to Coast, and have resident representatives in every city. Our price like our machines are not complicated, and are easily taken care of. Our business doubled last year, and there's a mighty good reason why. Let us give you our prices, perhaps you will be able when you get them to put an elevator in your building, but had hesitated on account of some elevator quotations you had received. Personal attention is given to your enquiries, large or small. Our letter in reply to your enquiries will be signed by Parkin.

## The Parkin Elevator Co., Limited

**MAKERS OF EVERY TYPE OF PASSENGER  
AND FREIGHT ELEVATORS**

**Head Office and Works at HESPELER, ONT.**

Toronto Office: 18 Toronto Street.

Phones Day and Night.



# BLACK DIAMOND TARRED FELT

Insulate your new home with Black Diamond Tarred Felt. It means comfort and economy. An expenditure of a few dollars in this way will reduce your fuel bill by 30 per cent. This, in itself, is pretty well worth while, isn't it? Besides it makes your home beautifully cool and comfortable in summer.

Tarred Felt to the house is as oakum to the ship. However excellently the ship may be constructed, it is imperative that this last inexpensive step shall be taken to render it absolutely serviceable. So must the properly constructed house have its Tarred Felt lining. It prevents the little leaks that make the heating and ventilating system imperfect.

## ALEX. McARTHUR & CO., Limited

OFFICE: 82 MCGILL STREET, MONTREAL

Roofing Felt Factory: Harbour and Logan Streets

Paper Mills: Joliette, Quebec

# Port Credit Brick

*Wire Cuts and Repressed Wire Cuts*  
and **PRESSED BRICK**

Our plant has recently been enlarged in such a manner as to enable us to supply these lines to the very best advantage.

**WE HAVE NOW ONE OF THE FINEST PLANTS IN EVERY PARTICULAR IN AMERICA**

"Brick," the leading clay journal of the United States, in its January number, says of our plant:

"When completed the plant will be one of the largest and best arranged plants in America, and anyone who desires to see a modern, well built and well designed plant in operation, a trip to the location would not be amiss."

**Dark Face Red Pressed Brick, Light Face Brick, Special Dark Face Veneer Brick, Hard Builders for Cellar Work, Second-Class Brick for Inside Work**

**PRICES FURNISHED ON APPLICATION**

# The Port Credit Brick Company, Limited

Office Phone. - M. 3167  
Yards " " Coll. 4853

**HOME BANK BUILDING, 8 KING STREET W., TORONTO**

**WORKS: PORT CREDIT, ONT.**

# PEDLAR "Perfect" Expanded METAL LATH

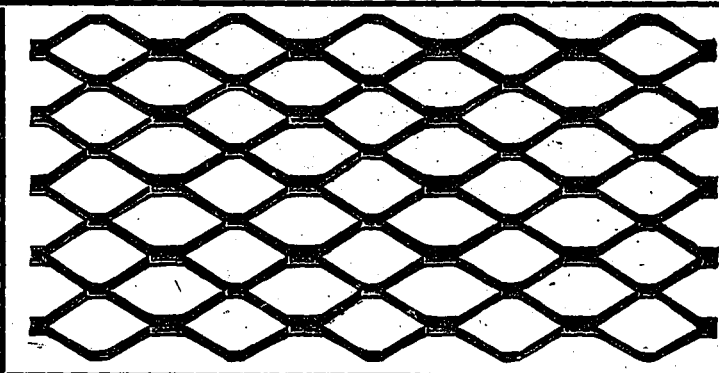
Do not confuse **PERFECT EXPANDED METAL LATH** with ordinary metal lathing. Our lathing is made in standard meshes by an improved process on special machinery; has its full temper after being "meshed," and never kinks nor rusts.

\* \* \*

Its key is positive. You would readily note this if you were to use **PERFECT EXPANDED METAL LATH** for two-coat work where the call is usually for grounds three-eighths of an inch thick; and where the serrations of one sheet must fit in with the irregularities of the sheet above, allowing just enough lap or contact to prevent the edge of the lower or under lapped sheet being pushed inwards past the one above.

\* \* \*

The "Vise" clinch of plaster to lath to wall is secured when **PERFECT EXPANDED METAL LATH** is used because our lathing is so constructed that when it faces the wall the dip of the strands is inward and downward. This results in the key being thrown on the reverse side of the wall where it is most needed, instead of in the direction of the workman, as often happened with metal lathing incorrectly "meshed."



## They Selected "Perfec." Lath

† Royal Victoria Museum, Ottawa; New Mint, Ottawa; Royal Victoria Hospital, Board of Trade Building, Sir Wm. MacDonald's Agricultural College, St. Anne de Bellevue, Merchants Bank Building, Windsor Hotel, Bank of Montreal, M. A. A. A. Building, Royal Bank of Canada, Alexandra Hospital, Coristine Building, Mark Fisher, Sons & Co., Mount Royal Club, Sherbrooke Apartments, New Harbor Sheds, Maternity Hospital, Henry Morgan & Co., all of Montreal.

† Our galvanized lath was chosen in competition for McGill Medical Building, Montreal.

† Architects, Brown & Vallance.

† Contractors, Peter Lyall & Son.

† We could name hundreds of other cases, showing the accepted superiority of **PERFECT EXPANDED METAL LATH**. We'll gladly send such indisputable proof to you on request.

Of all construction, reinforced concrete and steel, show minimum disintegration in fire or earthquake. Recent conflagrations in America readily prove this.

**PERFECT EXPANDED METAL LATH** can be successfully used as reinforcing material in the following:

Ceilings, partitions (solid or hollow), wall construction, beam and column fireproofing. The qualities that recommend it for reinforcing work are its combination of lightness with strength, the fact that it is sound-proof, may be run horizontally or vertically; is inexpensive, takes up little room, and requires no special framing to carry it.

As a lathing for walls and ceilings its superiority over all others lies in its positive key, vise-like clinch to the

## The Prices Are Just Right

**PERFECT EXPANDED METAL LATH, Painted, sells at—**

10 cents per sq. yd. for 26 gauge.

13 cents per sq. yd. for 24 gauge.

15 cents per sq. yd. for 23 gauge.

When Galvanized the Lathing Costs—

16 cents per sq. yd. for 24 gauge.

17½ cents per sq. yard for 23 gauge.

Sample of lathing awaits you. Post card brings it.

Booklet "Fire proof" Sent Free on Request: : : :

## PERFECT EXPANDED METAL LATH

adapts itself to Stucco work, Sewers, Dry Docks, Conduits, Light Houses, Septic Tanks, Piers, Power Guards, etc.



No false statement concerning **PERFECT EXPANDED METAL LATH** is ever countenanced by me. Every claim made in these heart to heart chats with the man who buys, has either come within my own personal experience or within the experience of my men. Do you think I could afford to permit contentions in print that the first use of my lathing would fail to verify? No, I value my reputation too much; and common sense tells me I can only stay in business as long as orders repeat themselves. You have my unqualified assurance that any claim herein made for **PERFECT EXPANDED METAL LATH** carries with it my guarantee of fulfillment.

*G. A. Pedlar*

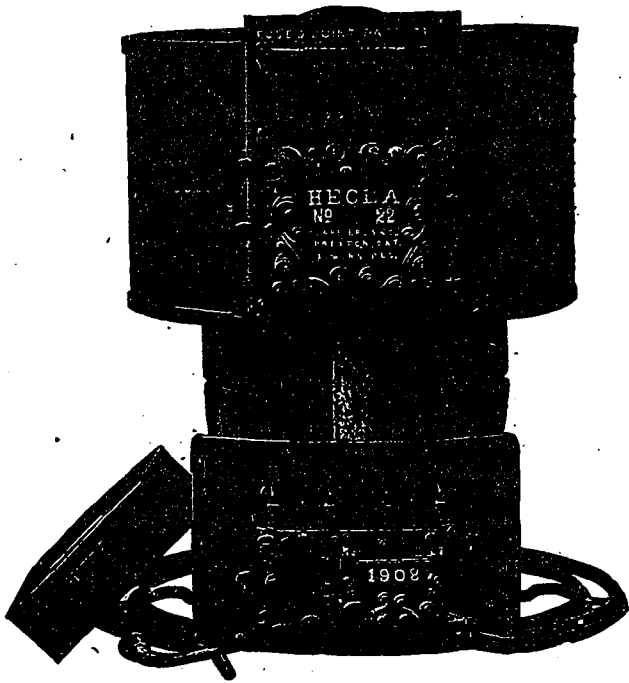
mortar, ease of handling, economical use of staples or nails, absolute rigidity, resistance of fire, rust, decay; and the fact that base-boards, door and window trim and picture moulding can be attached to it without affecting the durability of the walls.

Do not take our word for proof of this superiority. Take the evidence of the men who, after examining the claims made on behalf of various laths—and looking into the records of failures and successes—unhesitatingly selected **PERFECT EXPANDED METAL LATH**. (See names above).

## The PEDLAR PEOPLE of Oshawa

ESTABLISHED 1861

MONTREAL OTTAWA TORONTO LONDON CHATHAM WINNIPEG QUEBEC ST. JOHN, N.B. HALIFAX  
321-3 Craig St. W. 423 Sussex St. 111-113 Bay St. 86 King St. 200 King St., W. 76 Lombard St. 127 Rue du Pont 42-46 Prince William St. 16 Prince St.  
ADDRESS OUR NEAREST WAREHOUSE. WE WANT AGENTS IN SOME LOCALITIES. WRITE FOR DETAILS. MENTION THIS PAPER.



“HECLA”

oooooooooooooooooooooooooooooooo

WARM AIR

Furnace

oooooooooooooooooooooooooooooooo

FOR COAL

OR WOOD

The requisite for a successful Warm Air Heating System is a good furnace; one that will not only supply an abundant quantity of pure warm air, but will, in addition, be economical in the consumption of fuel, easy to operate, safe from dust and smoke, and that will give the greatest length of service. Some cheap furnaces fulfill one or more of these conditions, but the furnace you want must fulfill all. That is what the HECLA does.

## “HECLA” Features

- Automatic Gas Damper prevents gas puffs.
- Gravity Catch locks door every time you shut it.
- Double Feed Door for convenience when burning wood.
- Damper Regulator enables you to operate the dampers without going to the basement.
- Dust Flue carries all the dust up the chimney.
- Water Pan in the best position for effective service.
- Large Ash Pan with handle.
- Double Tin and Asbestos Lined Case to prevent the loss of heat in the cellar.

STEEL RIBBED FIRE POTS

PATENT FUSED JOINTS

INDIVIDUAL GRATE BARS

CAST IRON COMBUSTION CHAMBER

---

CLARE BROS. & CO., Limited

PRESTON. ONTARIO

VANCOUVER

WINNIPEG

# WHEN EFFICIENCY AND COST ARE CONSIDERED Triangle Mesh Concrete Reinforcement

HAS ABSOLUTELY NO COMPETITOR

Perfect Mechanical Bond in concrete combined with perfect distribution of steel. Main stresses carried on heavy straight Longitudinals to which stresses are carried by diagonal cross wires. Made by The United States Steel Corporation, the largest manufacturers of steel in the world—from the ore to the finished product—from specially selected mild or high carbon steel—cold drawn fully 20 per cent. stronger than hot rolled steel. Costs from thirty to forty per cent. less than any other reinforcing fabric manufactured.

**SOME CANADIAN USERS:**  
 Winch Bldg. . . . . Vancouver, B.C.  
 Joseph Vincent . . . . . Vancouver, B.C.  
 Robert Simpson Co., Limited . . . . . Toronto, Ont.  
 Murray Shoe Co. . . . . London, Ont.  
 Septic Tanks . . . . . St. Thomas, Ont.  
 Trenching . . . . . Toronto, Ont.  
 Water Stations at Toronto, London, Niagara Falls, St. Thomas, London, Woodstock, Paris, Preston, St. Marys, Stratford, Guelph and Berlin.



Above illustration shows Reinforced Concrete Outlet and Intake Pipe being manufactured on Toronto Island for Toronto's new Filtration Plant by Leak-Joint Pipe Co. Pipes 72 inch, 54 inch and 36 inches diameter. Triangle Mesh Concrete Reinforcement used exclusively.

We want every Engineer, Architect and Contractor to get a copy of our Engineers' Hand-Book and Some Users Triangle Mesh Concrete Reinforcement and their Structures, also our new Sliding Rule for estimating steel areas in concrete slabs. Write us to-day for full particulars.

**W. D. BEATH & SON, Limited Canadian Sales Agents Toronto, Canada**





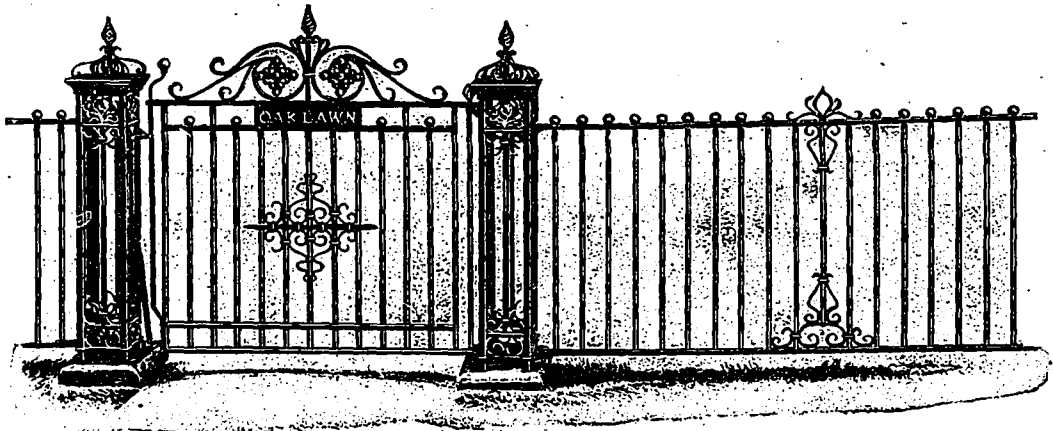
Interior of Standard Bank, Yonge and Charles St., Toronto.

**We  
Specialize  
in Bank  
Interior  
Woodwork  
and  
Furniture**

**This is one of  
1400 similar  
contracts exe-  
cuted by us in  
Canada**

**CANADIAN OFFICE & SCHOOL FURNITURE CO., LIMITED, PRESTON, ONT.**

# Wrought Iron Fences

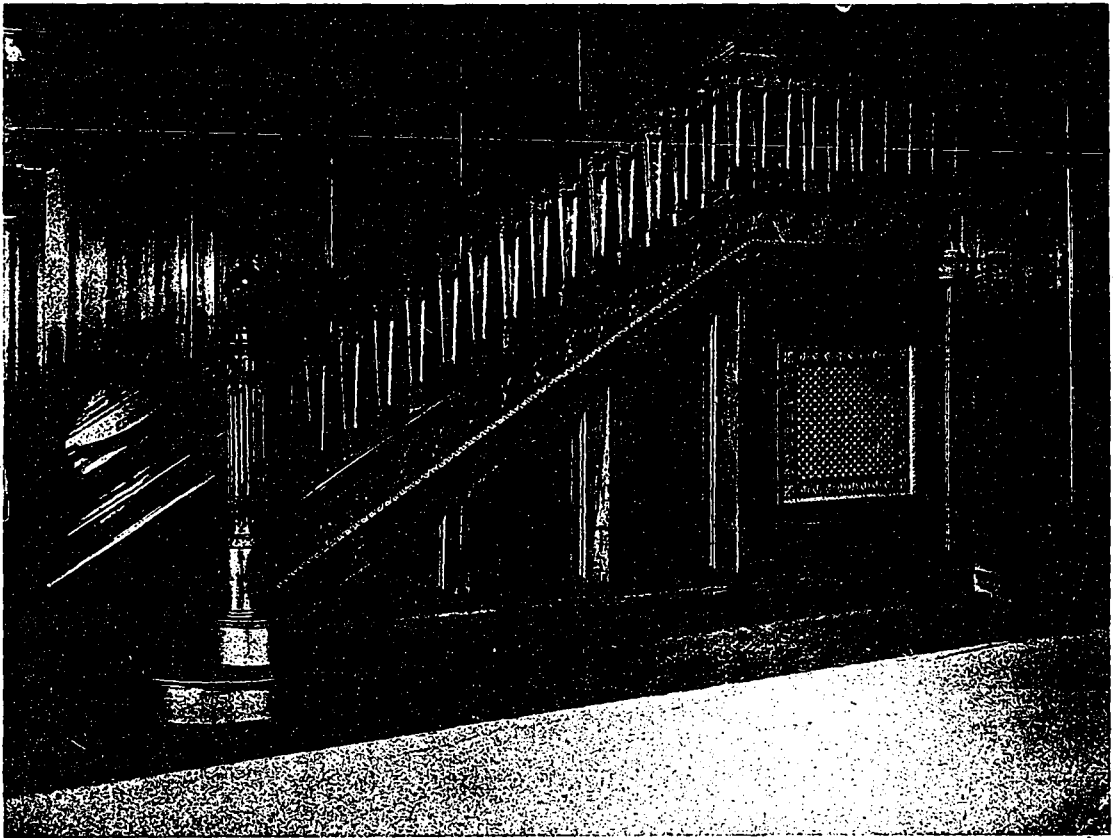


Iron Fences or Rails designed and built to suit the most difficult requirements. Let us have your specifications.

**CANADA FOUNDRY COMPANY, LIMITED**

**Head Offices and Works, TORONTO, ONT.**

**District Offices: Montreal, Halifax, Ottawa, Cobalt, Winnipeg, Vancouver, Rossland**



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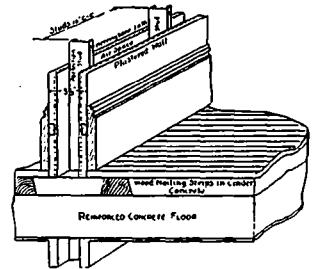
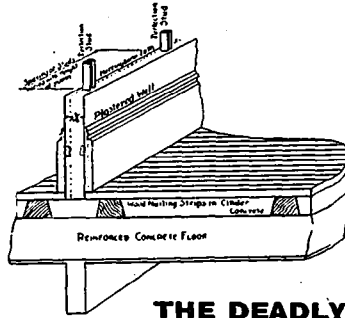
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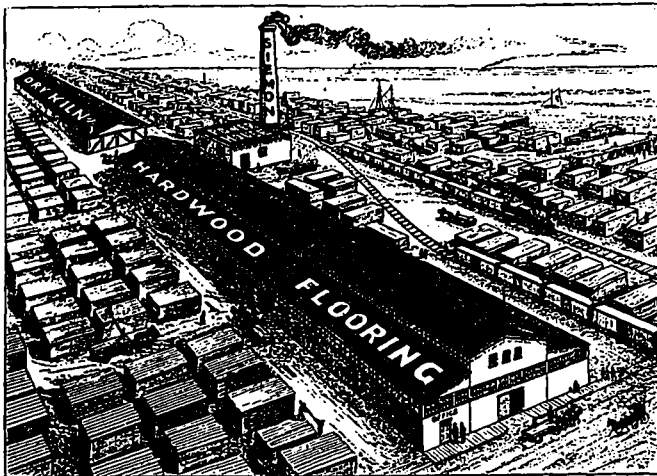
	TILE.	HERRINGBONE LATH AND PERFECTION STUD.
Fireproof qualities .....	Expands in fire. Crushes against ceiling.	Herringbone Lath and Perfection Stud expands in fire. Buckles, but stays up.
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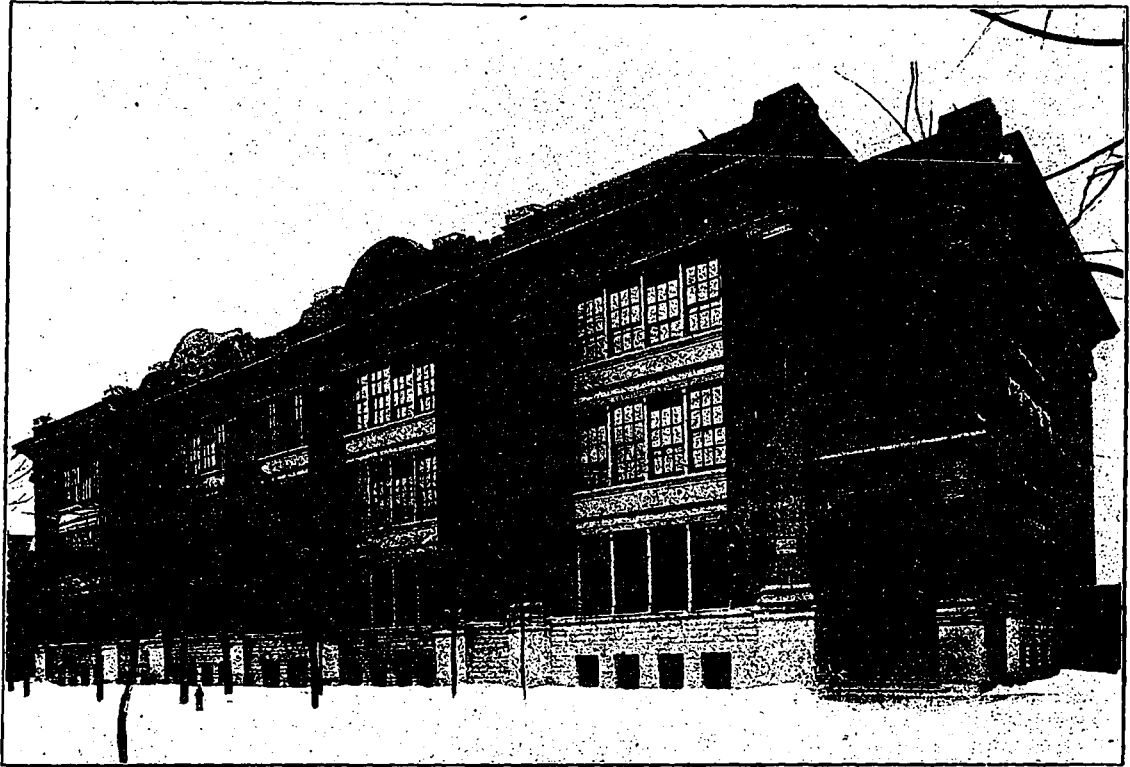
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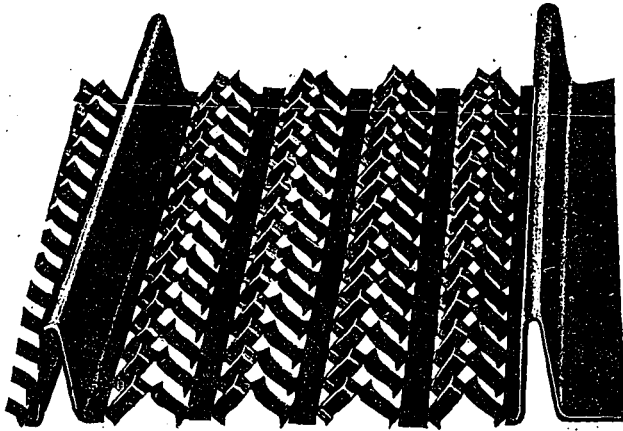
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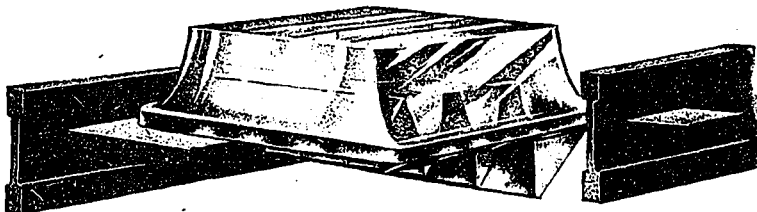
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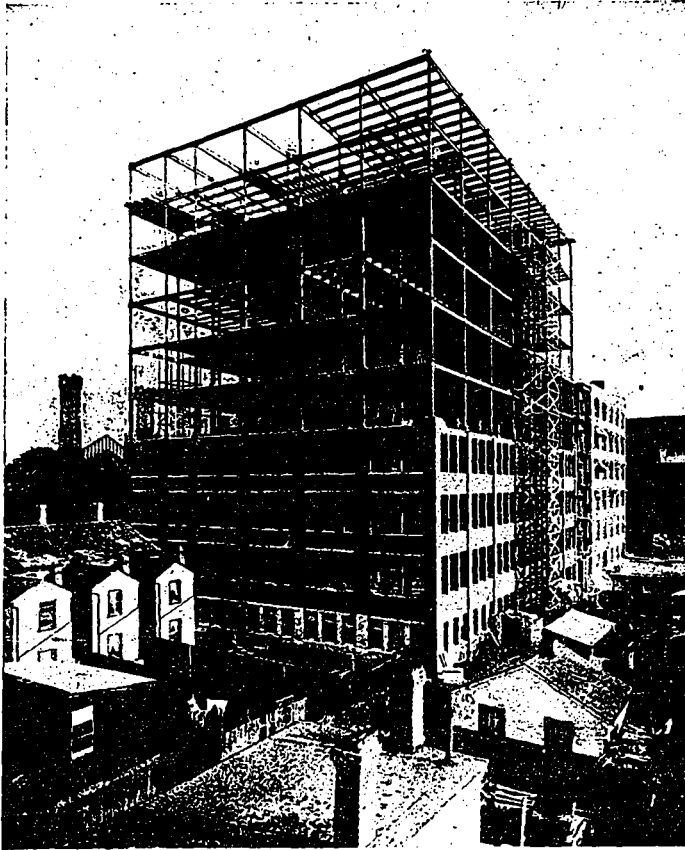
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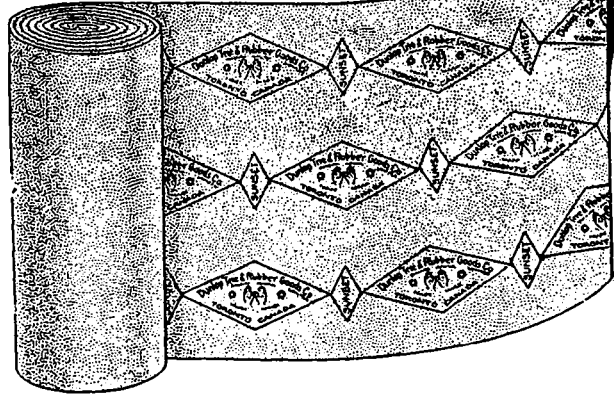
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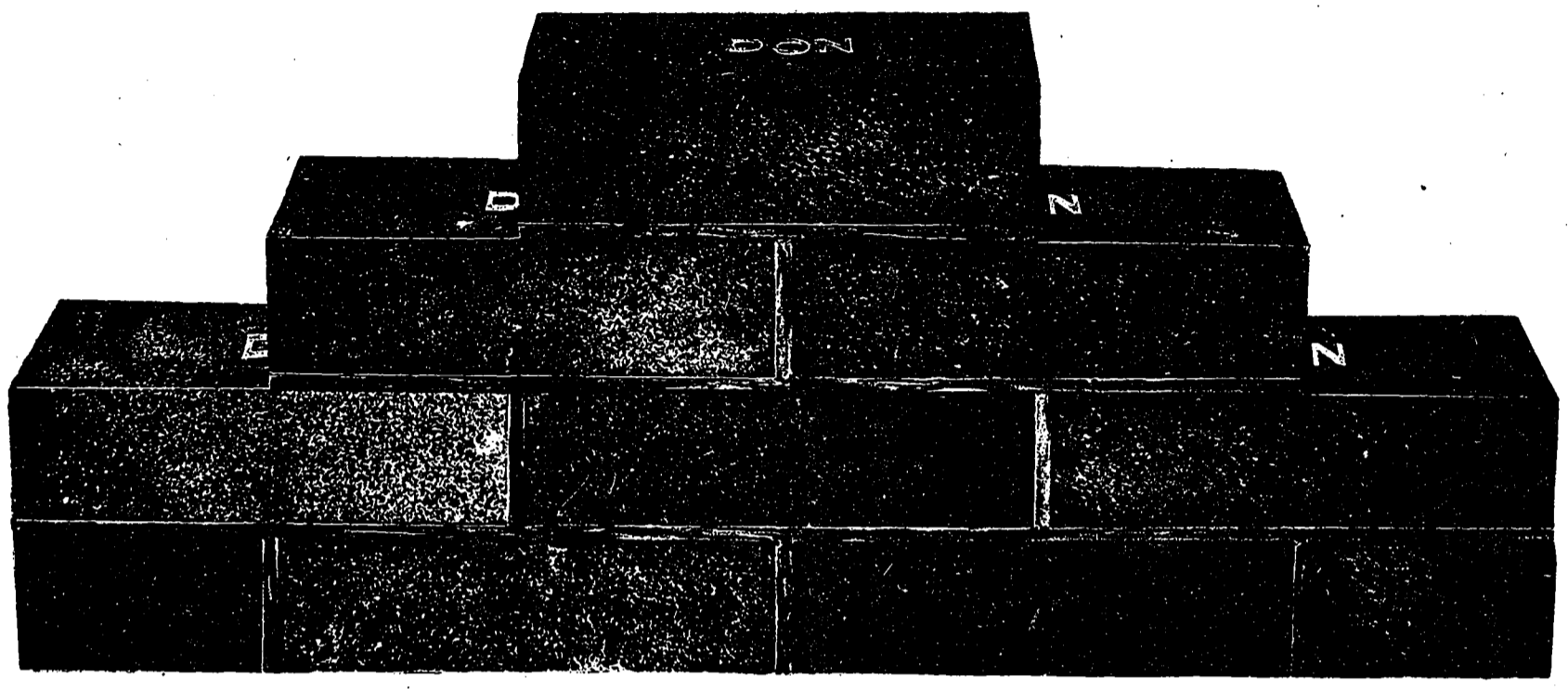
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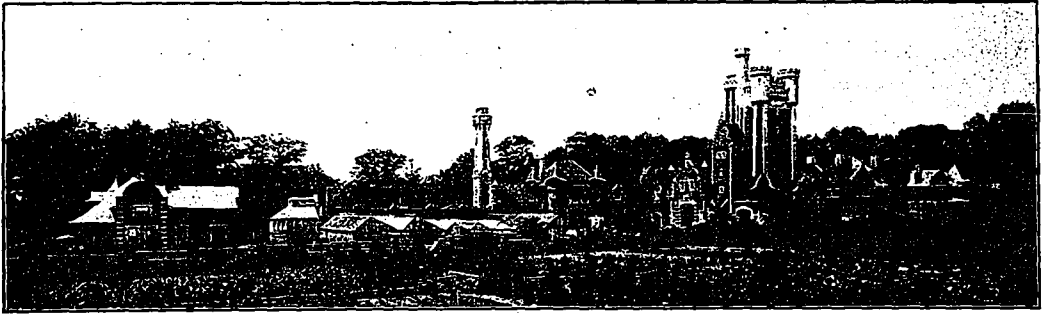
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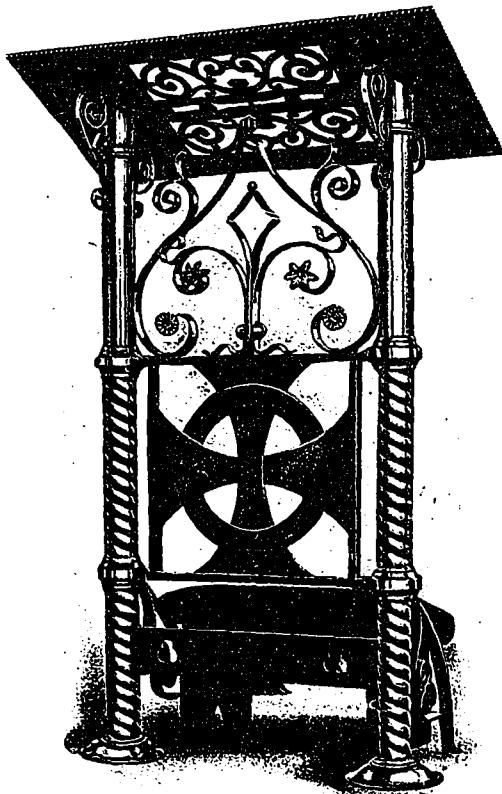
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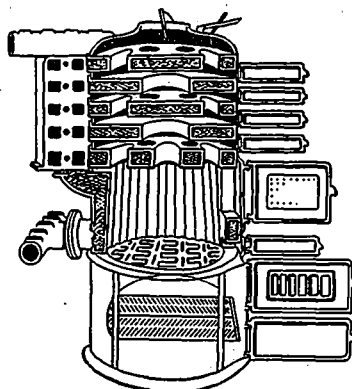
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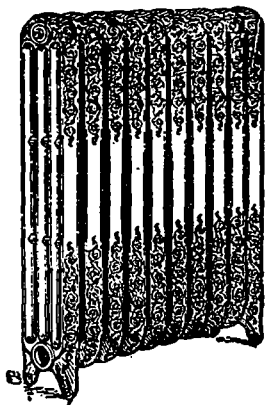
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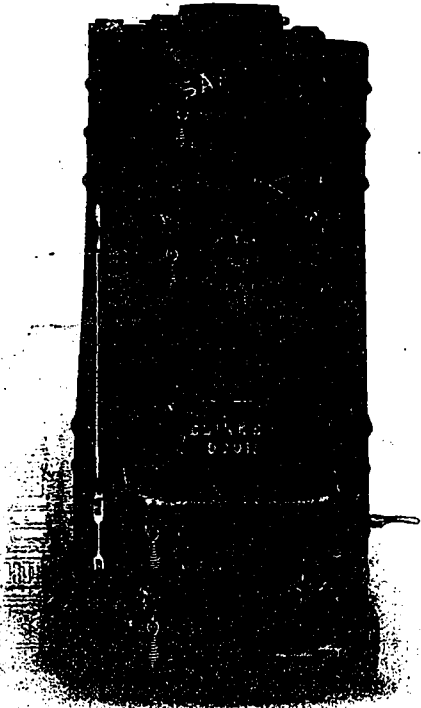
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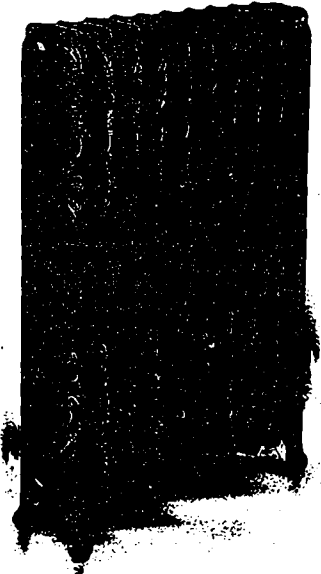
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No. 5158—Louis XVI design copied from a painting on silk tapestries in boudoir of Chateau of Comte de Blacas—a masterpiece of the Renaissance and once belonging to the Bourbons.

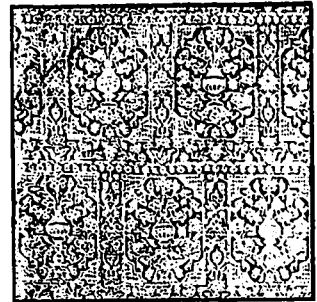
No. 5190—An Oriental brocatel, pattern stands out in bold relief. A beautiful design with gold ground, composed during the last century for Sultan's Palace at Stamboul.

Those building or designing homes of quality, where a design or period is carried out all through, should see this collection. Every design has its history, and reproduced are tapestries that carry us back to the time of Louis XIV and XVI and Henry II and IV, with the old beauty and elegance of weave as well as coloring and patterns exceedingly well reproduced. Pure silk or silk and linen weave. A few representative designs are:—

Pattern 5119, illustrated—Gothic design, the original is an old fortress that dates back to 11th century. Double-headed eagle in triangle with scroll border and pattern. In sage green, electric blue and crimson, background of gold woven silk.

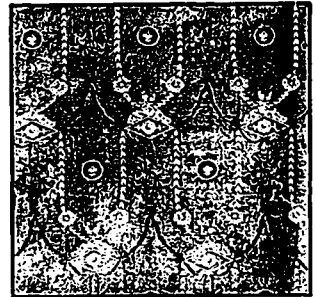
No. 5125—A fine silk and linen, with old-time square panel effect, Henry II style, a copy of material used in state-room of Chateau de la Rochelambert. The atmosphere of past centuries is fully retained in this elegant fabric.

Third Floor—Yonge St.



PATTERN No. 5125.

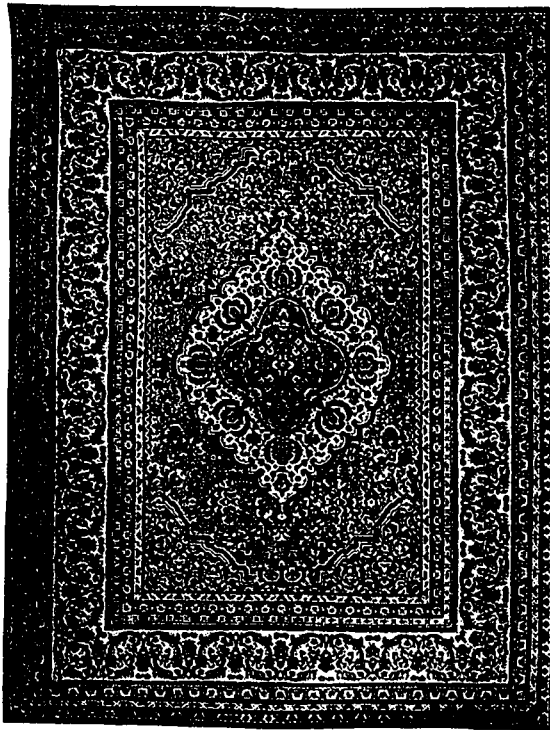
No. 5045, illustrated below—Louis XVI, a dainty rose design, with flowers and ribbons; the original is in the celebrated Hotel de Polignac, Paris.



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**T**WENTY-FIVE years ago, varnish was known merely by its maker's name and such general terms as "hard oil finish," "coach varnish," "furniture varnish," etc.

On December 15th, 1885, the Standard Varnish Works secured of R. B. Vance, then acting Commissioner of Patents, Washington, D.C., a certificate of registration for the word "Elastica" as a trade mark for "varnishes, japans, wood stains, etc."

This name it immediately announced as applying to a certain grade and quality of finish, exterior and interior, each to be sold at a certain fixed price which was also announced.

*This action was the most important service ever rendered the Architectural profession by any varnish maker because it had the effect of providing definite, permanent standards for the specification writer.*

A moment's analysis will disclose the ground for this assertion.

Previous to this action when only general terms were available, specifications for finish were subject to as many interpretations as there were interpreters.

There were no means of establishing complete understanding between the architect and the decorator.

But trade marking "Elastica" as applying to certain grades, and standard qualities of varnish completely changed conditions.

The architect knew just what it was and the painter knew just what it was. The use of the word immediately placed them in complete mutual understanding.

Equally important, it gave each of them relief by shifting responsibility to the manufacturer. A definite standard had been fixed and its maker committed to its maintenance. An article known merely by a general title might vary but one given a specific title could not.

The architects of 1885 embraced the change warmly. Other manufacturers followed eventually and the plan grew to be so much the custom that the trade lists now show over a thousand registered names for varnish—including several which the Standard later adopted for special grades designed for special purposes.

It all looks simple and easy to-day. But it was not so simple in 1885. The Standard Varnish Works had to pay the price that the pioneer must always pay. It had to align itself wholly on the side of Quality and take its chances against a field of competition committed to no definite standards and free to treat each prospect as an individual proposition.

The odds were heavy for a time, but in the end the right plan won—thanks to the architects, who, realizing what the movement meant to them, got squarely back of it and pushed.

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It bears repeating: "This company more than any other in similar lines of manufacturing, stands committed to that excellence which shall best serve the ends the architect seeks to attain."



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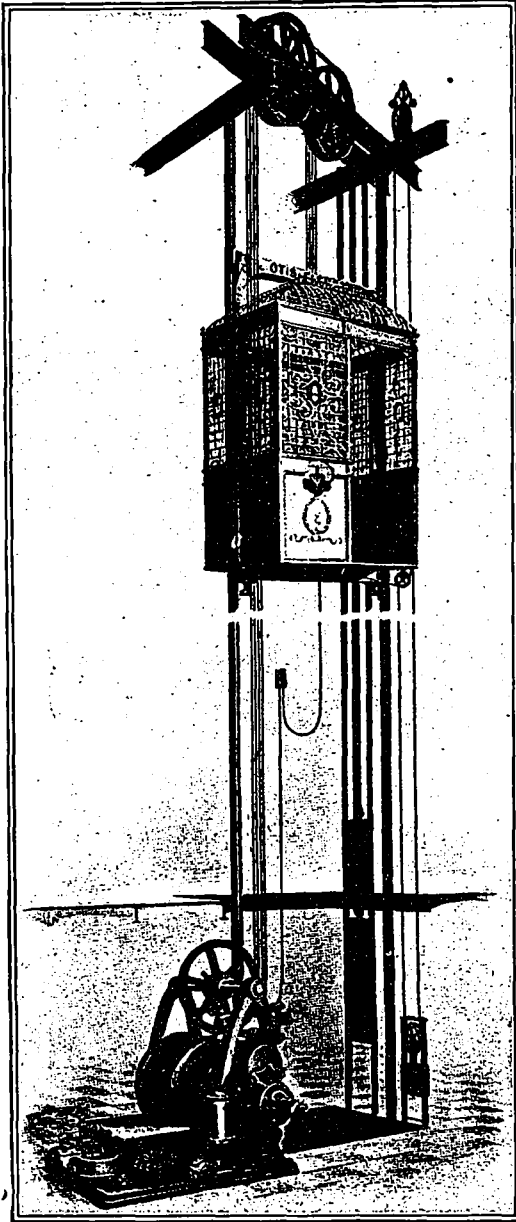
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ALEXANDRA WARE



## Three Reasons Why Architects Should Specify "Alexandra" Ware

### POINTS TO BE CONSIDERED

In specifying the bathroom fixtures, for the modern dwelling, the Architect must consider three important points: First, sanitation; Second, quality, finish and design; and, Third, cost.

### SUPERIOR IN QUALITY

If Canadian Architects, who have been specifying foreign-made bathroom fixtures, will compare "ALEXANDRA" WARE with that of any other made in the world, they will find that it stands head and shoulders above all others, in every point of comparison—quality, design, finish, construction and sanitary properties.

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"ALEXANDRA" WARE is by far the most sanitary type of bathroom fixture on the market. *So-called Solid Porcelain* (porous fireclay products), when crazed, become *water-logged* and *unsanitary*, while "ALEXANDRA" WARE, made in two parts, provides a space of pure air, instead of unsanitary porous clay.

Our Cast Iron Enamelled Ware embraces every superior feature and improvement in design and manufacture of plumbing ware.

*The Standard Ideal Company Ltd*

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WARE

*The Standard Ideal Company Ltd*

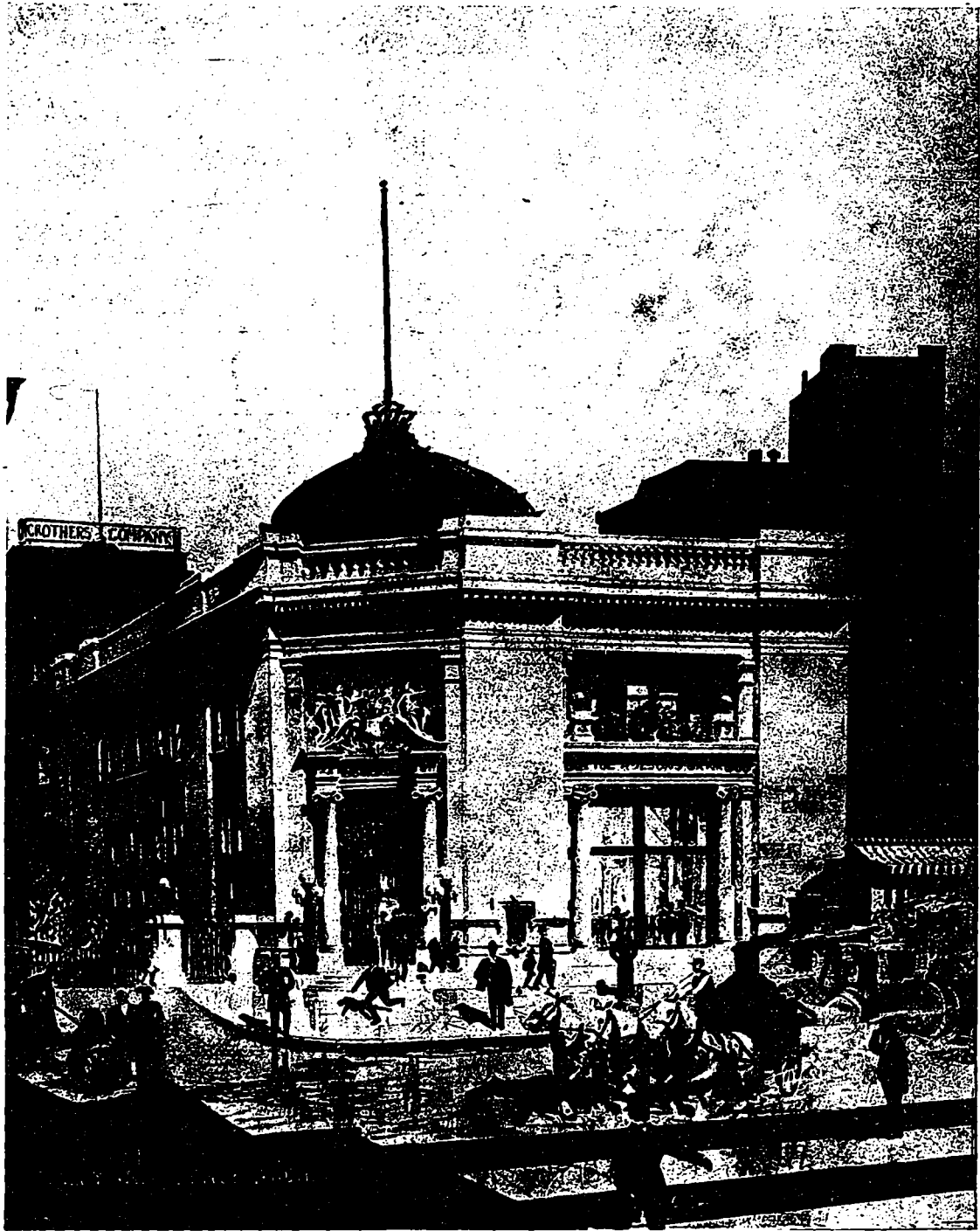


Finley & Spence, Archts.

**FEDERAL ASSURANCE BUILDING**  
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This Structure was equipped throughout with our Cast Iron Enamelled Ware.

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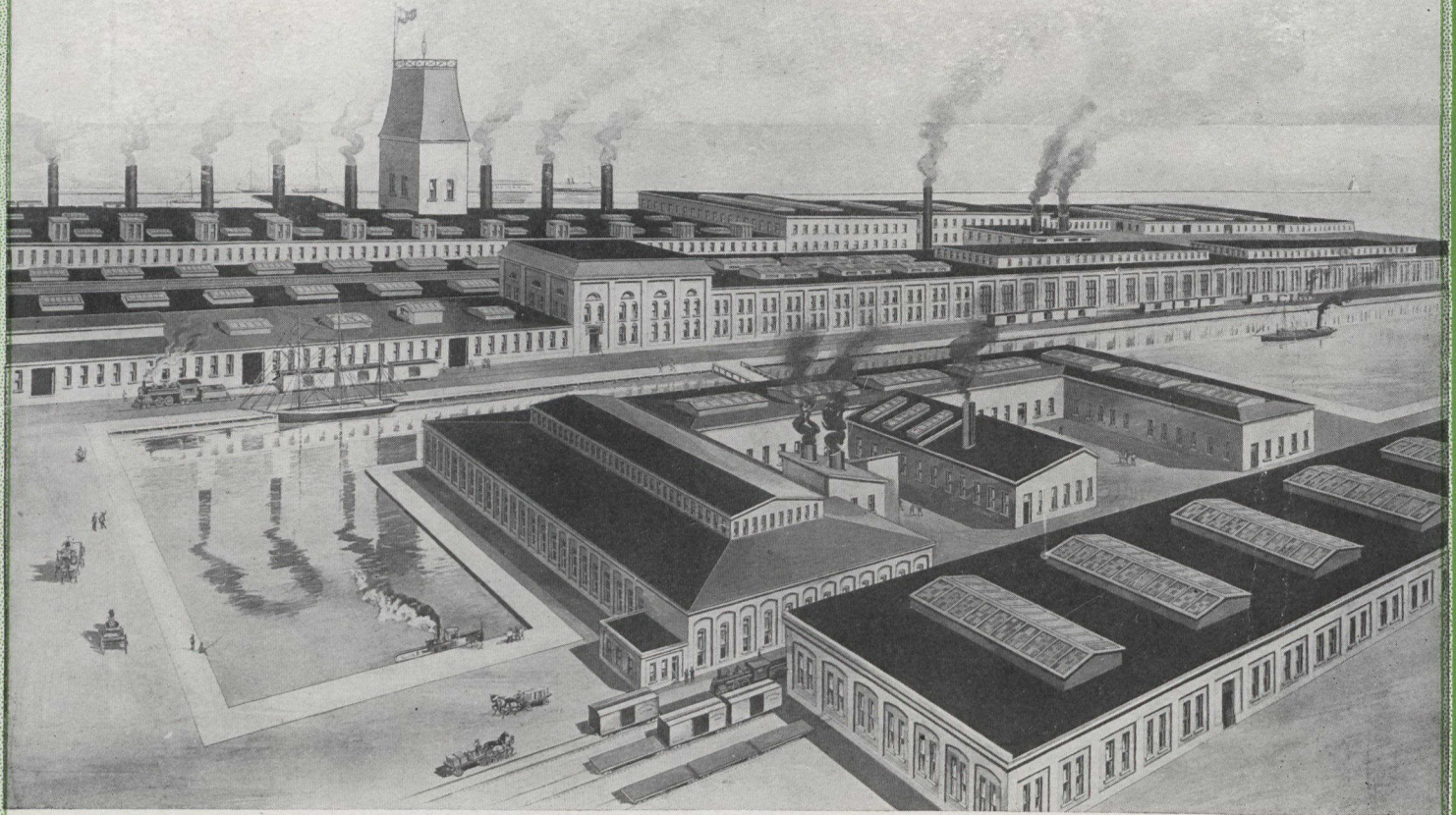
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TORONTO. 50 Colborne Street.

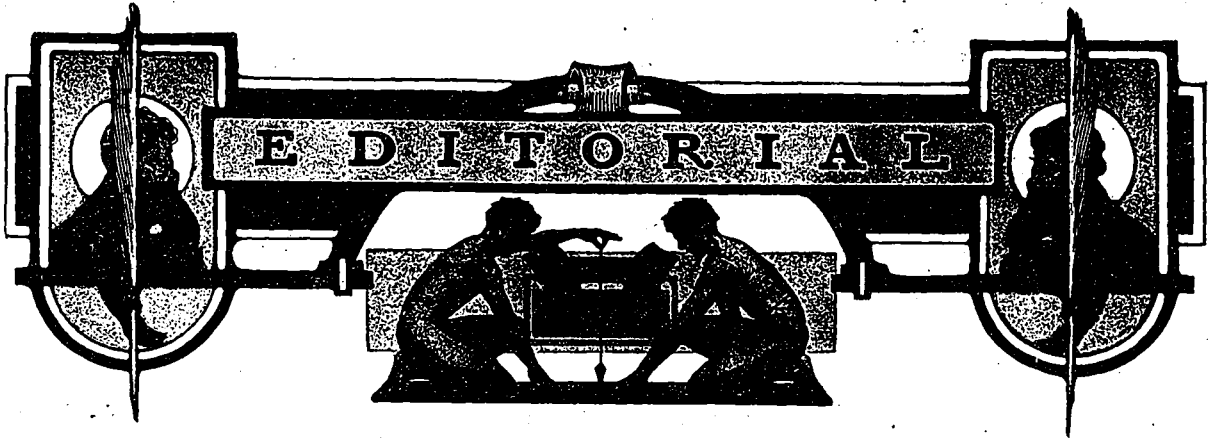
SALES OFFICES AND SAMPLE ROOMS

MONTREAL, 128 West Craig Street

WINNIPEG, 156 Lombard Street



ALEXANDRA WARE



## Toronto's Shame

**I**F THE NEXT school building disaster takes place in the city that has, through faulty construction methods and grossly inefficient protection against fire or panic, the most inadequately equipped structures in the shape of public school buildings, Toronto will be aroused with a horror that will never be forgotten, one that may, at last, awake the public, the city fathers, and school officials from their self-satisfied and indifferent attitude toward the proper design, construction and equipment of school buildings in the city of Toronto.

We do not know of a city of its size on the continent that builds three story school buildings of such a cheap, inflammable type of construction, without some character of emergency exits being provided as a protection against the unexpected in case of fire or panic.

Toronto's school buildings are practically all three story structures, of what we might call simply cheap joist construction, and there is not one in the whole city that is equipped with fireproof stairways, fireproof entrances, or fire escapes of any kind whatever. Such a deplorable, yes, almost criminal condition, obtains in no other city of its size on the American continent.

If a private individual applied to the City Hall in Toronto for a permit to erect a structure of like construction, to be used for a similar purpose, with the same lack of protection against fire or panic, it would be refused. Three story apartment buildings must have fireproof entrances, as well as fire escapes. Business buildings and factories, three stories or more, must have fire escapes. Theatres must be provided with exits on every side, with automatic doors, which open out on to an elaborate system of outside iron stairs, which must at all times be kept absolutely free from obstacles of any nature. Such places of amusement must also be of at least semi-fireproof construction. Three story hotel buildings are required to protect their guests to an infinitely greater degree than does the city of Toronto protect its school children.

Why is it necessary to provide such strict measures of protection on all such buildings that are occupied by adults, if it is unnecessary in structures that house from four hundred to a thousand school children? A business man finds it expedient under the present methods of underwriters' inspection, to build his factory, his warehouse, his office building or his store building of at least semi-fireproof construction, but a building constructed of highly inflammable materials, without even the usual fire protection required by the city's building department in private buildings, is sufficient to send his children to school in.

### A Lesson Unheeded

After the horrifying Collinwood catastrophe that occurred more than a year ago, the daily papers all over the continent were loud in their demands for better fire protection in school buildings. Cities in every portion of

the United States and Canada conducted school building investigations, with the result that there were radical changes effected in hundreds of towns and cities. Even the smaller cities and towns, where public school structures accommodate a comparatively small number of pupils, made marked improvements. Many cities in the United States closed the third floor of their schools until fire escapes of some character were provided. Others closed some of their schools entirely. Toronto did nothing. The daily press was full of talk for a while, but it died down without having accomplished one improvement. The school authorities assured the people that Toronto's schools were safe, there was no cause for alarm, and that, in case of fire, a carefully worked out system of fire drills would effect the safe exit of the children from a burning building. The public, which knows little or nothing about building construction or fire protection, accepted this statement of the school officials, and were satisfied. The daily press does not run a building inspection bureau, and hence editors, through the lack of authentic, unbiased, technical advice on the subject, dropped the matter when the sensational interest in the agitation ceased.

Montreal, as a result of her dearly bought experience in the Hochelaga disaster, was taught a lesson that resulted in convincing her school authorities of the necessity of fire escapes. We hope Toronto is not waiting for a similar catastrophe to cause her authorities to act.

### Fire Drills

To say that the fire drill is sufficient protection against fire and panic in three story structures, such as are built in Toronto, is foolish on the face of it. There is not a prominent school official or building inspector on the continent that would be satisfied with such a poor excuse for protection in buildings such as are Toronto schools.

If it is necessary to establish a fire drill to facilitate the quick exit from a building, for protection against fire, would it not seem reasonable that some measure of protection should be adopted against the awful consequences that would result from a fire panic. It is altogether probable that a building could be emptied through a well organized drill before the halls or stairways would be blocked by fire or smoke. But, if, in the event of a quick, threatening fire, the children became over-awed and were seized with hysteria, what provision is made to minimize the loss of life in the panic that would inevitably follow? There are many, not only possible but probable unforeseen situations that might arise that would easily cause a break in the ranks of the little marchers, and create a condition of wild disorder. In such cases, the passages would be blocked, and with the exposed wooden staircases and unprotected narrow hallways, the natural means of exit would soon be cut off, and with no outside stairways, no fire escapes, and no iron chutes, the children in the third floor, in the hallways, and in the stairways would perish as if caught in a flaming trap.

No one will deny the fact that a fire drill is necessary

under any and all conditions, but it is by no means sufficient protection in itself, in a three story building. It is a conceded fact that almost invariably all the fatalities that have occurred in fires in school or public buildings are the result of panic, and not actually of the fire itself. If we require the fire drill for protection against fire, then why should we not make some provision for emergency exit in case of panic? What this outside means of emergency exit should be, it is not my purpose to say. In New York, an inside fireproof stairway is used. It is cut off from the building proper entirely with a fireproof wall, and is covered with wired glass. In other cities outside covered iron stairways are used. In still others, open iron stairs, protected with iron netting, have been adopted. In others, the ordinary iron stairway has been considered sufficient, and in many others, what is known as the spiral slide escapes are used, with the greatest satisfaction. This latter type has been put on thirty-four schools in Chicago, and fifty are in use in Louisville, Kentucky. Winnipeg recently spent \$24,000 in equipping its schools with this escape.

But fire escapes are only a means whereby some additional measure of necessary protection is provided on a building that was originally badly designed and cheaply constructed. The ideal school building should at least be of semi-fireproof construction, and should not be more than two stories in height. It should have at least three wide fireproof entrances and stairways, the halls should be straight and broad, and the first floor should be of concrete. In such buildings, fire escapes are, of course, unnecessary.

#### Schools in the West

I was very much impressed with the superior character of public school buildings being erected in Western Canada. In even the smaller Western towns, the school buildings represent the best type of construction to be found in each town, and I must say that their broad, liberal spirit in this particular, sets to shame many of our communities in the East, and especially Toronto, with the antiquated, fossilized, tight-fisted policy pursued by those who are responsible for the shamefully inferior type of school structures in Toronto.

Winnipeg is especially to be congratulated in the liberal, vigorous and wholesome manner in which they have undertaken to teach and house their school children. After the Collinwood disaster, all three story structures were equipped with spiral slide fire escapes. These escapes are steel tubes connected with the building by long iron balconies. A steel door opens out on these balconies from the tube at the second and third floors. The children come out on the balcony and throw themselves into the tube and slide down a spiral sheet steel slide. The first boy down automatically opens the door at the bottom of the tube with his feet and the others follow at a remarkable speed. Everything works automatically, and it is impossible for an accident of any nature to occur. The children enjoy it immensely, and continually look forward to the fire drill, with the prospect of going down the fire escape.

During the recent visit of the British Association for the Promotion of Science, the Commissioner of School Buildings of Winnipeg, Mr. Mitchell, gave a demonstration of the efficiency of their fire drill and these fire escapes before a delegation, and Dr. Kimmings, Inspector of Schools of London, England, who has 20,000 teachers under him, after having taken a trip down the escape, declared it the most wonderful protective device he had ever seen.

But not only has Winnipeg put Toronto to shame in the matter of providing and equipping her three story schools with efficient and practical escapes, but in the design, construction and equipment, her recent schools, which, although not absolutely fireproof, are of an immeasurably better type of construction than is employed in Toronto.

All schools now under course of construction are built with solid brick walls lined with terra cotta, directly upon which the plaster is applied. The first floor is of reinforced concrete, the entrances are fireproofed with concrete, the halls are from 14 to 18 ft. wide, and metallic ceilings are used throughout. When we take into consideration the very much higher cost of all fireproofing materials in Winnipeg, as compared with the prices at which they may be obtained in Toronto, it seems most extraordinary that a city that claims the honor of being the educational centre of Canada, should be satisfied with such a highly combustible, cheap type of construction, as that adopted in the erection of her public schools.

#### Toronto Schools Inferior

Not only has Toronto refused to properly equip "blunders in school design," with proper fire protection, but the new school buildings erected, while somewhat larger, with a trifle better plan, are almost as bad in design, construction and equipment as the old ones; buildings of highly inflammable construction with no adequate means of fire protection. Surely a horrible catastrophe will not have to occur before people will awaken to the full realization of the awfulness of the consequences they are courting.

If the actual inferiority of Toronto's school buildings, as compared with those of the type usually considered adequate by authorities in other cities, could be made plain to the citizens whose children attend these schools daily, there would be a flood of criticism and demands for better buildings and better fire protection that all the assurances of the school officials of Toronto could not stem.

I am free to admit that Toronto's school officials are not wholly to blame for this deplorable neglect. They have unquestionably done the best they could with the funds at their disposal. But these officials are to blame in that they have assumed the responsibility for structures in the construction of which insufficient funds have been provided.

It would be ridiculous for an individual to attempt to erect a theatre in which the lawful fire protection was not provided for the safety of his patrons on the grounds that he had not sufficient funds to enable him to do so. The school officials are responsible for the condition of school buildings, and it is their duty to the public to see that they are provided with sufficient funds to properly erect and equip these.

#### Expert Criticism

This is not the first time that Toronto's school buildings have been adversely criticized. It is a common subject among the local as well as visiting members of the architectural profession. Mr. F. W. Fitzpatrick (executive officer of the International Building Inspectors and Commissioners of Washington, D.C.), who is the greatest authority in the world on building construction as regards fire protection, and is, by the way a Canadian, was dumbfounded at the character and condition of Toronto's schools during a recent visit to that city. He declared that in no particular are Toronto schools up to the usual standard in either design, plan, construction or equipment, and Mr. Fitzpatrick knows whereof he speaks.

If the school board were to submit plans of six representative Toronto school buildings to a committee of any five prominent architects in Toronto or in Canada, or five prominent building inspectors in the United States or Canada, for their opinion as to whether the buildings, as they now stand, with their present equipment, are safe, the unanimous answer would be in the negative. It is time that Toronto received the opinion of unbiased authorities on this important subject. It is most inconsistent to ask men to pass a criticism on their own work.

I.S.M.

## Architects and Compulsory Education

THE MOTIVE BEHIND the several appeals made by the Ontario Association of Architects to the Provincial Government for the enactment of some measure that will establish a system of compulsory architectural education, have been misunderstood by many, and misconstrued by a few.

The O.A.A. is composed of men who stand high in their profession, men of integrity, who are among the most respected in commercial and social circles in the province. It is not their desire to monopolize the profession; their aim is not to secure a close corporation; their interest in this vital question is not prompted by the desire to strengthen their organization by forcing every architect in the province to pay dues into their coffers. Individually, there is nothing to be gained in a monetary way by the architect of to-day through the establishment of a legalized form of architectural examination.

The only selfish motive, if it could be so called, that these earnest men can have in this apparently thankless work, is their desire to promote a better class of architecture in the province of Ontario; to raise the standard of the profession and insure the public against the operations of the incompetent, dishonest, so-called architect. They ask that every man who wishes to serve the public as an architect, shall be forced to properly qualify before some competent, unprejudiced board of examiners.

And after all, what more public spirited motive could be conceived of? The very character, style and stability of our building depends solely upon the ability, knowledge and training of their designers. The design and construction of our buildings means much to us as a new country. There is no factor in our development that will so truthfully reflect our culture, tastes and attainments as our architecture. Then why should not a parental government in the interests of the whole people, insist that the men who are to be responsible for our buildings, should be properly trained and properly qualified to assume that great responsibility? This is simply what O.A.A. has been contending for. They have not laid down any arbitrary conditions under which they would have the government proceed. With their knowledge of the requirements and responsibilities of their profession, they ask the government to protect the people against themselves, by forcing the intending architect to prove his worth before he is permitted to assume the title.

The following letter from Mr. G. W. Gounlock, President of the O.A.A., shows concisely the dire need for some form of compulsory education, and expresses briefly but truthfully the broad minded, unselfish position taken on the subject by the O.A.A.

"The aims and object of the Ontario Association of Architects are to encourage a higher and better type of architecture, which should have its effect in an educational manner.

"We have in Ontario an Act which permits architects to register through our Association and call themselves Registered Architects, but the course of study is not compulsory, and there is nothing to prevent a blacksmith, butcher or other tradesman from calling himself an architect and hanging out his shingle as such.

"Some years ago, when we first obtained our present Act, architectural students thought then it would be necessary to take examinations before they could practice, the result being that there was then a class of about thirty attending the School of Practical Science (subsidized by the Government.) I regret to say that since it was found unnecessary to take a compulsory course of study and pass examinations, the students have not done so, and as a result there have been only one or two architectural students attending the School of Science these last few years.

"We applied to the Board of Governors of Toronto University to improve our training, and they referred us to Dr. Falconer, who expressed his sympathy in our cause, but said he did not see that they were in a position to endow a Chair of Architecture in the University at present, as they had not sufficient accommodation nor a professor for that subject. There the matter remains.

"In the provinces of Quebec, and Alberta they have a course of study and examinations for architects before they are permitted to practice, and this is bound, in my opinion, to produce a better type of architecture and assist in the beautifying of these provinces and in the education of the public.

"At present we have no national style, and we can never hope to obtain one so long as the education of the student is neglected. This we have tried to remedy by applying to the Government for an amendment to our Act, so that we might have a compulsory course of study and that the student should then be properly qualified and the public feel safer inside of their buildings as well as pleased with the exterior design.

"It does seem a shame that so little is known or thought about architecture by the layman, the grandest, the mother of all arts, and one in which a greater revolution has lately taken place and in which more progress has been made, with more stupendous results, than in any other."

The establishment of a system of examinations that would bring about compulsory education, would not increase the practice of its agitators one whit. Their interest in the question is prompted solely by their pride in their profession and the realization of their responsibilities. The agitation should come from the layman, the man who builds, but, unfortunately, the average man is not sufficiently in touch with the subject to realize its importance, hence the task falls upon the shoulders of the men who do know the real situation.

In the interests of the people of the province of Ontario, as well as the profession of architecture, some plan must be devised whereby an architect must be an architect, in deed as in name.

## Overcrowding of Churches

ARCHITECTS are so accustomed to being criticized that they are usually loth to criticize. This is unfortunate, insofar as the public, of necessity, depends upon the advice of the architect in all important matters pertaining to building construction or equipment, and, while it may be ill-advised for an individual member of the profession, to put himself on record in the criticism of the condition or equipment of a building or of a condition that obtains in a given structure, it is, nevertheless, the duty of an architectural organization, as a body, to attempt to remedy such evils, pertaining to matters of this nature, that militates against the safety and welfare of the public.

In this connection, we are pleased to note that the Toronto Chapter of the O.A.A., in a recent communication to Mayor Oliver, brought to his notice the flagrant violation of the building by-law, by several churches, in allowing their aisles to be obstructed by chairs. The letter reads as follows:

"At a meeting of the Toronto Chapter of the Ontario Association of Architects held on the 12th inst., I was instructed to write you in regard to Section 72 of the Building By-Law, which prohibits any passageway, stairway, etc., in any church, theatre or other building used for public meetings being obstructed by chairs, etc., and also prohibits people from standing in aisles, stairways, etc."

"We understand that the enforcement of this By-law is in the hands of the Police Commissioners, and we beg to suggest that, inasmuch as this By-law is frequently disregarded, it would be advisable to have formal notice printed, containing the provisions of the By-law, to be put up in some prominent place in all public places of meeting.

"In making this suggestion, we have special reference to churches having chairs in aisles, several instances having come to our notice recently, where churches have been very overcrowded.

"Those in charge of the church services are not usually as conversant with the By-laws as are the officials in theatres and other places of amusement, and the danger in case of panic in church buildings is very great.

"Trusting this suggestion may meet with your approval, I remain yours very truly, Wm. F. Sparling.  
Hon. Sec. Toronto Chapter O.A.A."

This practice is known to be a common one in Toronto churches, and it should not be tolerated in a church any more than it should in a theatre, and it is to be hoped that Mayor Oliver will take the necessary steps to put a stop to it.

There are a few more abuses of the building laws in Toronto, known well to architects, that they would do well to bring to the notice of His Worship. In such acts as this, the architects are doing the unsuspecting public an inestimable service.

## Building Activities in September

CONSIDERING THE POINT to which the season has advanced, and, especially the remarkable series of preceding monthly gains, September, as regards operations in the building line, was a period of unusual activity and development. Comparative figures, as supplied CONSTRUCTION, place the average gain for the month at 49 per cent., and, although five of the twenty cities reporting, showed a falling off, the losses were widely scattered, and detracted but little from the well balanced and highly satisfactory condition which obtained in general. The results in the West, were particularly gratifying, and only one city in that section, is listed among the places in the Dominion which suffered a decline. This decrease fell to the lot of Brandon, which, after a most lively period for some time back, dropped behind her last year's figures for the month, to the extent of 42 per cent. On the other hand, not only was a marked forward movement evident in all parts, but the gains made in almost every instance, were of such huge proportions as to most strikingly reflect the prodigious growth which the entire Western section of the country is at present undergoing.

The largest increase for the month is noted in the case of Calgary, which follows her extraordinary gains of the preceding months by another mighty advance of 377 per cent.; Edmonton is second in this respect, with an increase of 309 per cent., which overwhelmingly wipes out the loss sustained in the month of August: while Victoria again repeats her previous successes, by registering an advance of 160 per cent. the third highest increase tabulated for the month.

Aside from the splendid progress made in these places, other cities which showed substantial headway, were Vancouver and Winnipeg, which augmented their big season's gain by a additional advance of 135 per cent. and 60 per cent. respectively. Regina also comes well to the fore by overreaching last year's figures for the month to the extent of 32 per cent.; and Lethbridge, although failing to submit corresponding figures for Sep-

tember 1908, shows by the high total recorded, amounting to \$95,000. that this city is pressing onward at a most remarkable pace. Winnipeg issued permits aggregating in value \$801,050, as against \$481,200 in the corresponding period last year, while Vancouver shot ahead of her 1908 figures for the month, by a margin of \$440,025.

Despite the set backs noted in the case of Toronto and Peterboro, which were 5 per cent. and 18 per cent. in order named, the situation throughout Ontario proved to be highly satisfactory and steadfast. Berlin registered a gain of 150 per cent.; Hamilton 71; London 15; Fort William 10 per cent. and Port Arthur recorded a total for permits issued during the month of \$271,000, which amply attests to remarkable expansion which is taking place in this rapidly growing city. This is the first reversal Toronto has experienced in eight months. and Peterboro's decline comes only after a series of uninterrupted gains.

In the east, Montreal has again annexed a gain, this time adding 8 per cent. to her credit. Operations in Montreal this year have been unusually active and an idea as to the progress which has been made may be imagined from the fact that the Metropolis has so far this year carried on building operations involving the expenditure of \$6,505,151 as compared to \$3,860,078 for the corresponding period in 1908. Halifax, however, was not hard, suffering a decrease of 85 per cent., which doubled that of any other loss noted for the month. St. John also recorded a loss, that of 19 per cent., but Sydney on the other hand loomed up strongly with a gain of 95 per cent., the fifth consecutive increase which this thriving city has recorded.

As yet there seems to be no indication of any decided break. On the contrary the reports from the country at large show that the architects and builders are unusually busy, and while the volume of work is not as heavy as in the spring and summer, there is at least a proportionately great amount in prospect through the Dominion than at any other fall season in the past.

	Building Permits for Sept., 1909.	Building Permits for Sept., 1908.	Increase, Per Cent.	Decrease, Per Cent.
Berlin, Ont. ....	\$24,000	\$9,600	150.00	.....
Brandon, Man. ....	53,250	93,300	.....	42.92
Calgary, Alta. ....	280,737	58,800	377.44	.....
Edmonton, Alta. ....	505,199	123,425	309.31	.....
Fort William, Ont. ....	161,935	147,100	10.08	.....
Halifax, N.S. ....	27,000	180,311	.....	85.02
Hamilton, Ont. ....	181,950	106,150	71.40	.....
Lethbridge, Alta. ....	95,000	.....	.....	.....
London, Ont. ....	54,890	47,500	15.55	.....
Montreal, P.Q. ....	716,840	662,875	8.14	.....
Peterboro, Ont. ....	46,485	57,230	.....	18.77
Port Arthur, Ont. ....	271,900	.....	.....	.....
Regina, Sask. ....	53,300	40,173	32.67	.....
St. John, N.B. ....	15,800	19,550	.....	19.00
Sydney, N.S. ....	18,205	9,300	95.75	.....
Toronto, Ont. ....	1,046,065	1,109,580	.....	5.72
Vancouver, B.C. ....	764,530	324,505	135.59	.....
Victoria, B.C. ....	140,935	53,630	160.92	.....
Windsor, Ont. ....	17,600	.....	.....	.....
Winnipeg, Man. ....	801,050	481,200	66.46	.....
	52,276,671	3,524,229	49.72	.....

A HALIFAX, ENGLAND, INVENTOR named Binns, according to a contemporary, has discovered a process whereby a durable waterproof wall paper can be made at a lower cost of manufacture. The finished product, it is said, bears a close resemblance to tapestry, and the quality is such that the paper, after being applied to the walls, can be washed and cleaned at will without the least danger of damage to the fabric. In the manufacture of the character of wall covering in question, a foundation of paper is employed, to which is secured by glue or size, a surface gauze or open woven fabric composed of cotton, flax or similar yarn, the whole being waterproofed by an oil or like process.





Residence of Wm. F. Sparling, of the architectural firm of Curry & Sparling, Toronto. A noteworthy production in domestic work in which the unique treatment of the clinker brick walls results in a rusticity of character which most strikingly harmonizes with its surroundings.

## RESIDENCE OF WM. F. SPARLING, TORONTO.—Novel and Interesting Use of Clinker Bricks in Domestic Design.—Walls Partake of Rustic Character of Surroundings.—Interior, Home-like in Appointments and Carried Out with a Consistency in Decorative Detail. ∴

**I**T IS THE AIM of all architects, and in fact, any person who strives for individuality in his environments to find new materials and new ways of doing things; and while it seems almost impossible to accomplish anything in this respect, at the same time it is possible to re-arrange the methods for utilizing materials that we have on hand, so as to produce some new and satisfactory effect.

This is admirably demonstrated in the residence of Mr. Wm. F. Sparling, of the architectural firm of Curry & Sparling, Toronto, in which one of the accepted materials of construction is shown in a most novel and interesting expression.

As the location of the site and its surroundings is always a prime factor in carrying out a consistent general scheme, the design in question and the adaptation of the materials employed were strongly governed by this important consideration. In this particular case, the lot was situated on the edge of the woods, and contained from ten to twelve varieties of trees, including butternut, two species of hickory nut, beech, pine, maple, bass, ironwood, oak, and one or two other indigenous growths. It was at once decided that this setting called for a house of a semi-rustic appearance, as it was "the one chance in a thousand" where it would be possible to find such an unusual condition within a city limit.

The question of material at hand it was decided to use clinker brick, but in a way different to what had hitherto been employed. For the benefit of those who are still unacquainted with clinker bricks, it might be said, that in burning the kiln in making brick, the bricks next to the fire fuse and run out of shape, forming in the shape of clinkers. Formerly the smoothest of these bricks were used for facing the walls and backed up with the rougher brick. In this case, however, the owner decided to try the other extreme and culled out the smooth brick, using only the rough knobs for the outside. The experiment proved to be anything but disappointing; the ruggedness of the walls fitting in perfectly with the surroundings and partaking of the character of the foliage about it. To form a contrast with the rough brick, there is a strip of roughcast plastered on the brick slightly up from the first storey; and this, with a wide overhanging eave, and a good old fashioned cottage roof, with a large bell cast, gives a very consistent and pleasing effect.

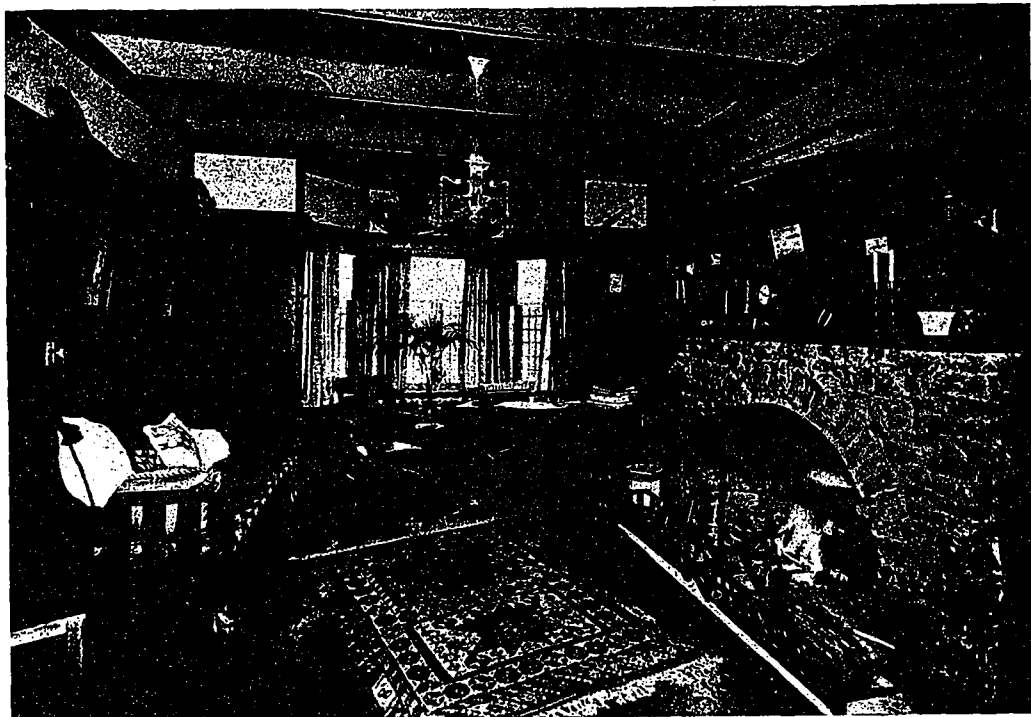
The brick in the summer, and more especially damp weather, takes on a dark greenish brown shade, and in the winter a tone more on the lighter browns and straws color. In laying the brick, it was endeavored to keep out all brick with yellow cast. The roughcast is in a straw color, and the general woodwork white, except the soffit



Detail of clinker brick walls and stone work, Residence of Architect Wm. F. Sparling, Toronto. Note the general ruggedness and striking rustic effect of the masonry.



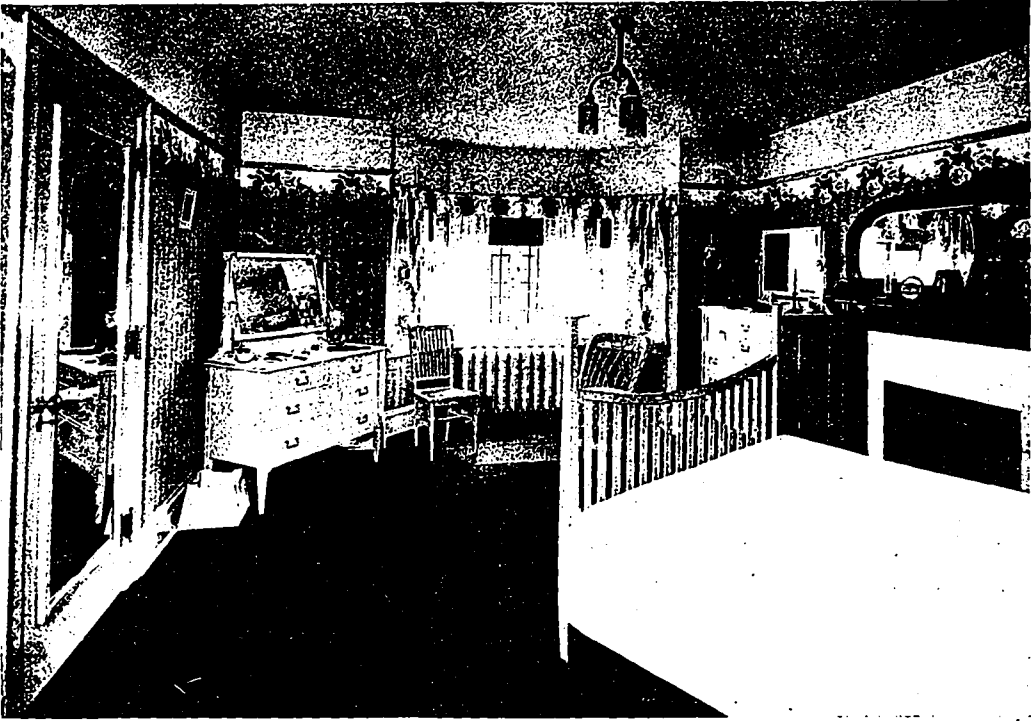
Entrance Hall, looking towards reception room and vestibule, residence of Architect Wm. F. Sparling, Toronto.



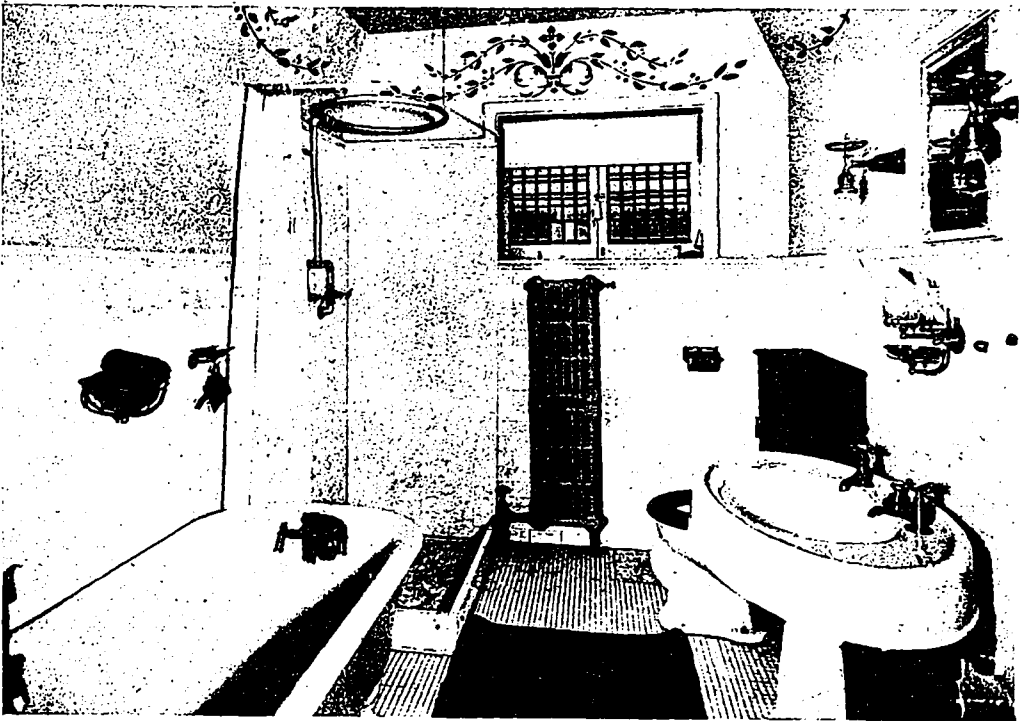
Living Room, residence of Architect Wm. F. Sparling, Toronto, showing the clinker brick fireplace with its copper hood, and the general character of the home-like appointment. Note the furniture, which was especially made to form a part of the general scheme.



Dining Room, residence of Architect Wm. F. Sparling, Toronto. The wall and color scheme of this interior is similar to that of the living-room, which it adjoins. The panelling is filled with a greenish paper having an oatmeal effect; the woodwork is in black ash and the floor in plain cut oak. Above the plate rail the frieze is done in a rich shade of burnt orange, while the tone of the ceiling tends more to the yellow ochre.



Bed-room, residence of Architect Wm. F. Sparling, Toronto. Note the complete harmony between the wall treatment and furnishings.

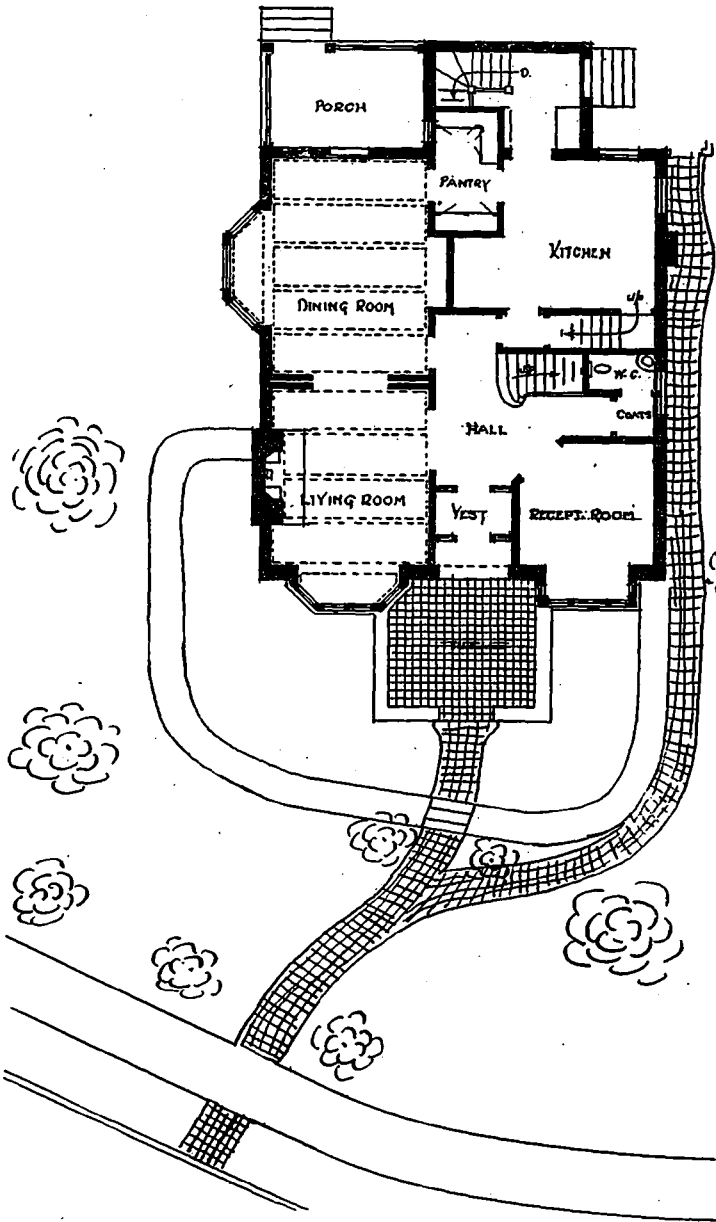


Bath-room, residence of Architect Wm. F. Sparling, Toronto. A compact but conveniently arranged and refreshing interior, equipped with the most approved sanitary fixtures and carried out with consistency of decorative detail.

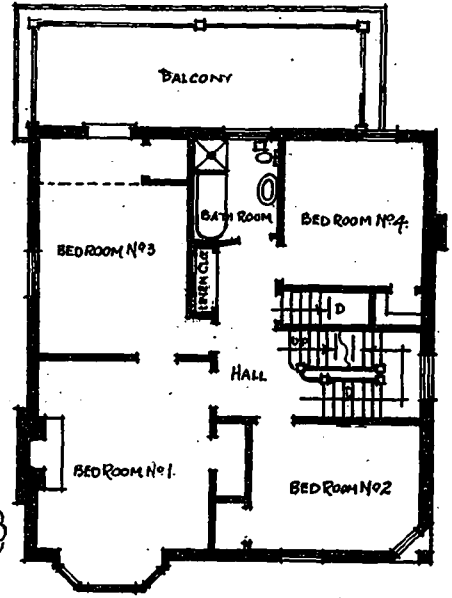
of the caves, which are unpainted boards and battens stained green, with a copper colored gutter and down pipe. The walks and piazza are carried out in red tile quarries. This with a mottled green slate roof and the green foliage, gives a finishing touch to the general color scheme. It will be noticed that the verandahs were kept from the front of the house, being placed so as to overlook the woods in the rear, the upper balcony especially, being very large and cosy, and so designed as to readily admit of it being closed in with glass.

In planning the interior, it was kept in mind that the more compact the plans the less would be the work required in housekeeping. The arrangement was therefore

impression is greatly intensified on entering the living room, for, directly across from the door is a large clinker brick fire-place—with a round copper hood and an opening capable of burning large logs—which beckons most invitingly. The whole room was designed with the sole object of harmony and comfort: and it is surprising how much the success of the whole is contributed to by the color scheme. The woodwork, including plate rail, beams, etc., is of black ash, stained a russet brown, which gives a two tone effect. The dark grain comes out a rich brown and the lighter grain a golden copper shade that is difficult to definitely describe, but which results in a most exquisite effect.



Plan of grounds and first floor, residence of Architect Wm. F. Sparling, Toronto.



Second floor plan, residence of Architect Wm. F. Sparling, Toronto.

The living room and dining room, being adjacent, are panelled and the panels filled with a kind of green paper, which gives an oatmeal effect, or which has an appearance of cork matting. Above the plate rail, the frieze is carried out in a rich shade of burnt orange and the panels between the beams a little lighter shade, more on the yellow ochre. The portieres are velours of a rich russet shade, which harmonize perfectly with the light shade of the woodwork. The curtains are a rich shade of yellow, or light orange. The furniture in these interiors was specially designed to participate in the general scheme of the rooms, and is slightly darker in shade than the general woodwork; while several of the electric fixtures were wrought by hand in black iron, under the supervision of the architect.

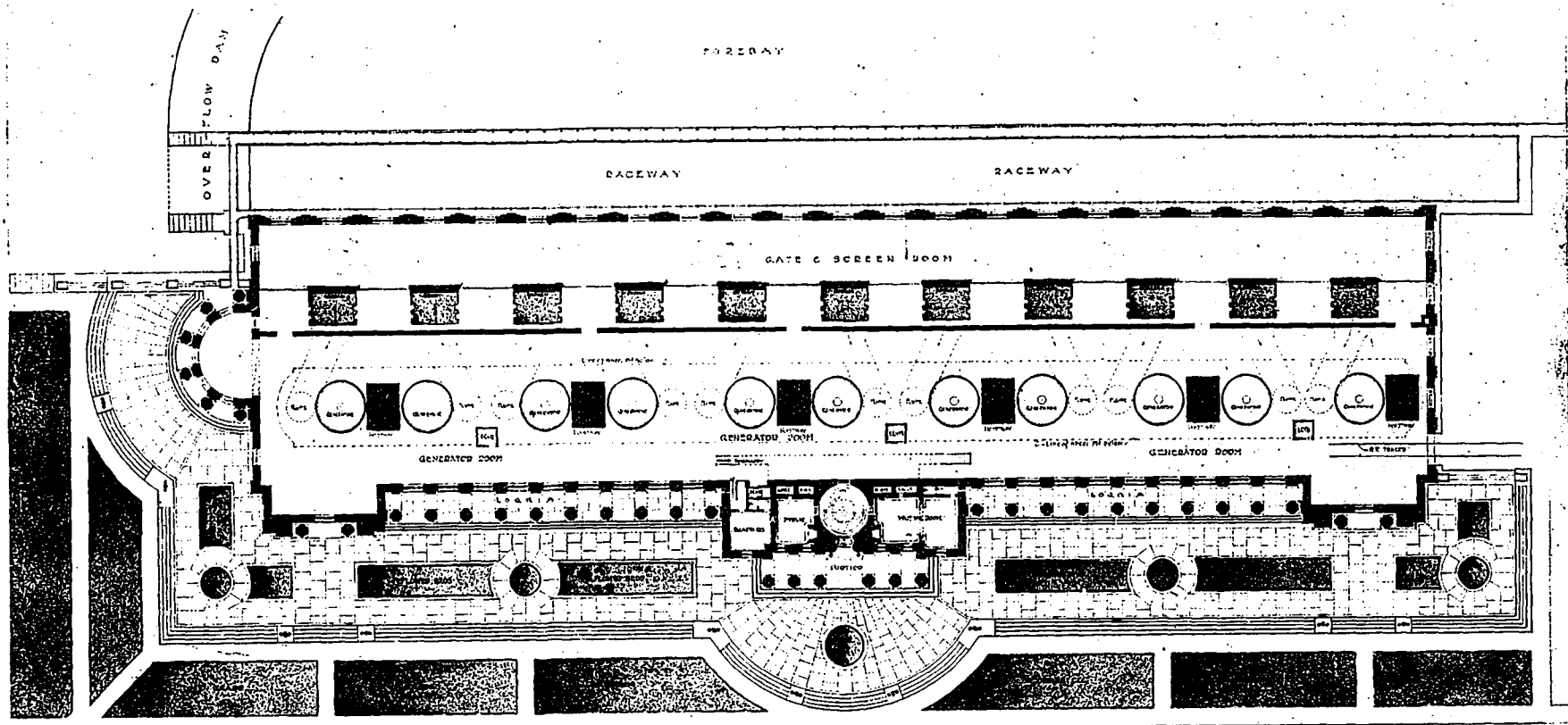
The doors are in two long panels with thumb latches instead of the regulation door knobs. The floors throughout indicate that the owner has a preference for plain cut oak, and also in the woodwork a preference for

governed so as to produce a plan which would not only afford as much comfort as possible to the occupants, but also the greatest degree of convenience in the performance of domestic duties; as after all, this later consideration is something which must always be taken into account in the designing of a successful house.

On coming in the front door one is impressed with the pronounced homelike feeling which prevails and this

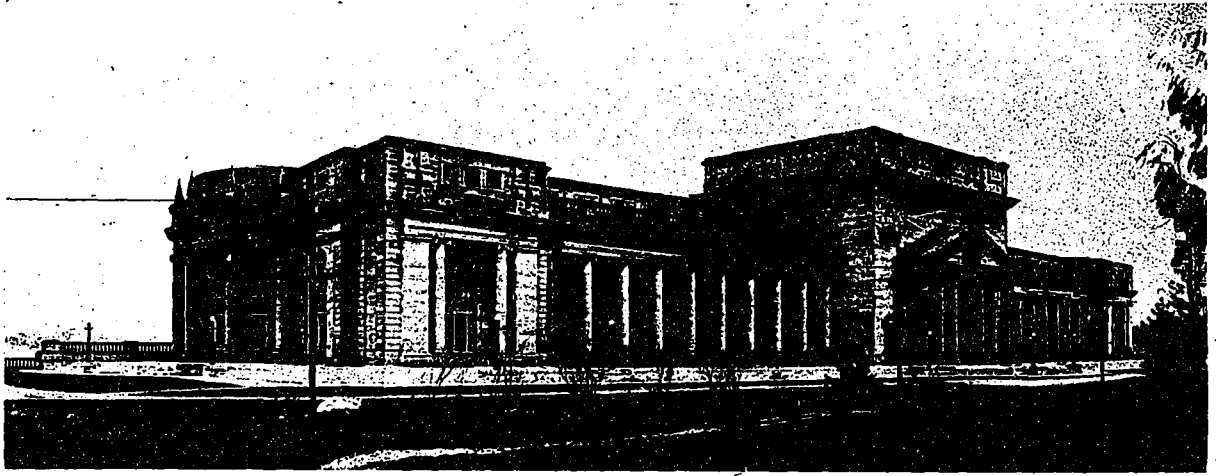
black ash to using quarter cut oak. It is claimed by the owner that quarter cut oak is more adapted to furniture, but that aside from this to obtain the desired effect, plain cut oak or black ash is far more satisfactory as the grain gives an opportunity to put a certain life into the materials when decorating, which the extremely fine texture of the quarter cut oak precludes.

(Continued on Page 51).



POWER HOUSE  
 FOR THE  
 ELECTRICAL DEVELOPMENT CO.  
 NIAGARA FALLS ONT.  
 BY LENNOX ARCHITECT ONE INCH - SIXTEEN FEET

Plan of power house and grounds, Electrical Development Company, Niagara Falls, Ont., showing Raceway, Screen-room, Generator-room and Offices. The dotted lines indicate the location of the flumes through which the water rushes to the turbines operating the huge generators; the water in turn passing into a large tunnel which empties into the Horseshoe Falls.



Generating Station, plant of the Electrical Development Company, Niagara Falls, Ont. E. J. Lénnox, Architect.

## ELECTRICAL DEVELOPMENT CO.'S POWER PLANT.— Model Generating Station at Niagara Falls, Ont.—Driven by Huge Tur- bines and Equipped with 8,000 Kilowatt Units.—Electrical Energy Transmitted Over Eighty Miles to Toronto.

**T**WO FACTORS OF VITAL IMPORTANCE in the development and operation of industrial utilities, are efficiency and cost, and how to improve the one without increasing the other has been a problem which at all times has engaged the attention of the engineering world. The cost of production of any manufactured commodity, or the cost of service to the community in the way of light, heat and transportation, is strongly governed by the cost of motive power, and anything which tends to lessen the expense of operation, renders an economic service which either directly or indirectly, is of benefit to the public.

While water power for centuries back has been one of the means employed to arrive at this end, the remarkable strides made within the past decade in the exploitation of this natural force, as the basis for generating electrical energy with which to operate our industrial units and public service enterprises, marks one of the most forward steps which has measured the progress of engineering science. Engineers, the world over, are now diligently engaged in harnessing the great cataracts to be found in commercial and industrial centres, and it would be difficult indeed to consider the vast amount of capital invested, the numerous central generating plants that are springing up, their great equipment, and the miles and miles of transmission lines, without realizing the great development which is taking place in this respect and the economic possibilities which it offers.

As a specific instance of hydro-electrical development, one can perhaps find no example more interesting than the power plant of the Electrical Development Company, situated in Victoria Park at Niagara Falls, Ont. Not alone because it derives its motive power from the great onrush of water at that point—although that, of course, is an important feature—but because when completed, it will be, both architecturally and in equipment, one of the most thoroughly designed and constructed power plants in the world.

The generating station itself is 433 feet long by 100 feet wide, and the entrance is through a large circular rotunda at the centre of the building. The floor of this rotunda is laid with marble tiles in neat pattern, and the walls are finished in exquisite colored marble with enriched cornice, from which rises a domed ceiling having

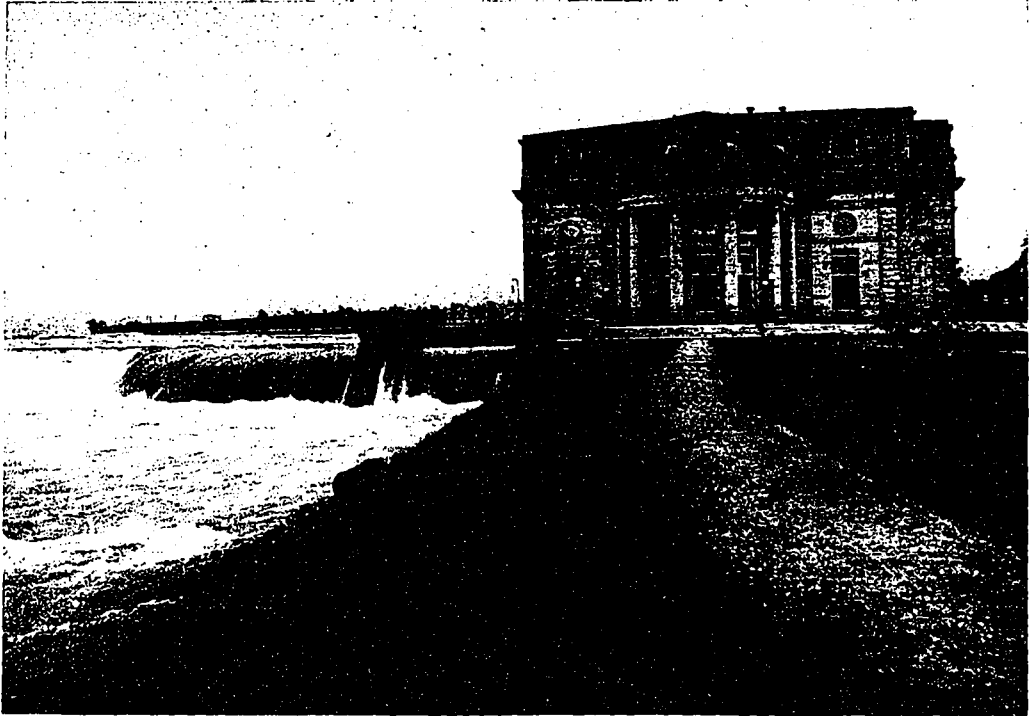
a large cut glass electrolier in the centre. To the right and left are the public and private offices and waiting room, while directly opposite the entrance door is the entrance to the generator room, in which there is space for eleven of the largest generators in the world, capable of generating 25,000 horse power each. These generators are run by water turbines, situated in wheel pit, about 150 feet below the floor of generator room. Each generator is operated by a flume of water, 10 feet in diameter, which empties into a large tunnel, and, in turn, is discharged back under the Horse-shoe Falls. When the plant is running at full capacity, about forty-three million cubic feet of water will pass through the turbines every hour.

Back of the generator room is the screen room, where the water passes through immense metal gratings to prevent ice from getting into turbines. Both the generator room and the screen room run the full length of the building, and have very high ceilings, and each room is equipped with a fifty ton travelling crane for handling of heavy machinery.

The walls of the generator room are lined with glazed brick, with cut stone trimmings, and the switchboard is in the gallery over the entrance, from which point it commands a view of the whole interior.

The exterior of the building has been designed in severe classic, having a large central pavillion and side wings, and the structure is approached by broad steps and terraces, running the full length of the building. The entrance has a lofty colonaded portico, while the side wings have a recessed colonade so that the public may view the machinery in the generator room through large plate glass windows. The exterior facades are built in Indiana limestone, with the exception of the elevation overlooking the Falls, which is of Roman stone, and the whole building throughout is absolutely fireproof. Where plastering is employed, the work throughout is either applied directly to metal lath or terra cotta; the whole of the ground floor offices having enriched classic cornices, and the general waiting room, heavy moulded beams supported by columns and pilasters which give a pleasing effect.

Operation of the plant was first started in the fall of 1906, and at present four 8,000 kilowatt generators have



End view of Power House, Electrical Development Company, Niagara Falls, Ont., showing the onrush of water which is utilized in developing electric power and energy to operate Canadian manufactories and industries. E. J. Lennox, Architect.

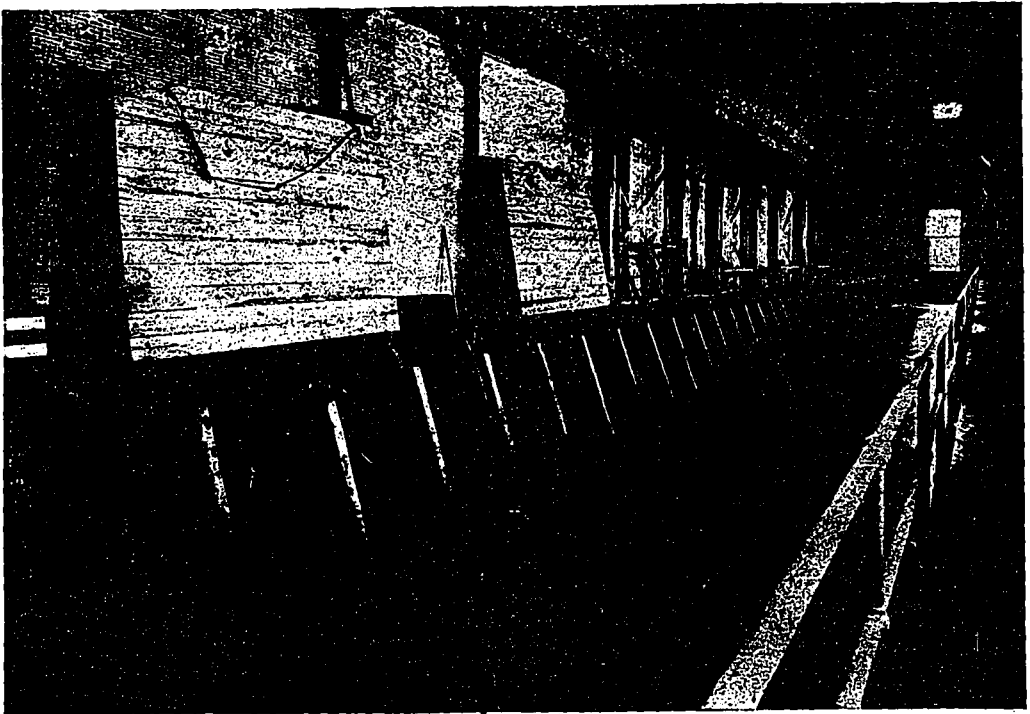


Rotunda, looking towards Generator-room, Power House, Electrical Development Company, Niagara Falls, Ont. A rich interior, circular in shape and executed in high-grade marbles. The panels of the wall are in Breche violet with a stile of English veined Italian, the sub-base being Jaune Fleuri and the door trim consisting of Rouge Jasper and Jaune Fleuri. The floor has a field of White Italian inlaid with Red Numidian, the border being composed of Rouge Jasper, Sienne, Verde Antique with Sylvian Green squares. E. J. Lennox, Architect.

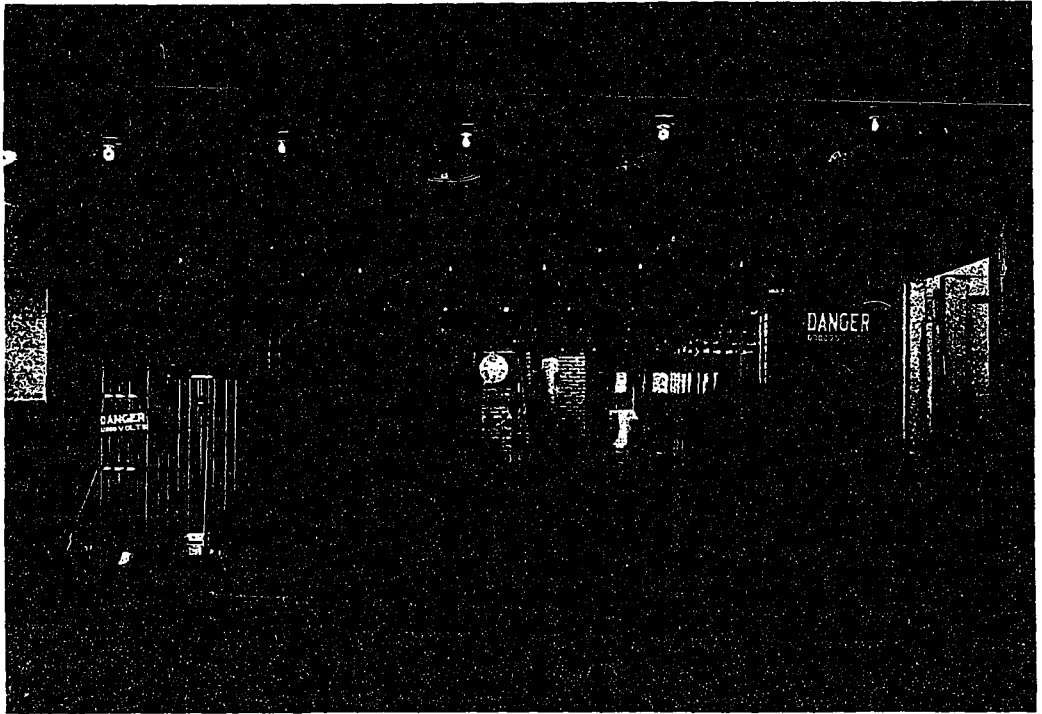




View of Generating Room, power plant of the Electrical Development Company, Niagara Falls, Ont., showing four 8,000 kilowatt generators. E. J. Lennox, Architect.



Screen Room, Generating Station, Electrical Development Company's Power Plant, Niagara Falls, Ont., showing the immense steel gratings through which the water passes to the turbines. E. J. Lennox, Architect.



Interior of Transformer Station, power plant of the Electrical Development Company, Niagara Falls, Ont., showing the terra cotta ceiling with its structural steel supporting members. E. J. Lennox, Architect.



View showing Transformer Banks, power plant of Electrical Development Company, Niagara Falls, Ont. E. J. Lennox, Architect.

been installed, although provisions have been made for seven more, which will give the station a total capacity of 125,000 horse power. These generators are the largest at Niagara Falls, and were manufactured by the Canadian General Electric Company. The electro-motive force produced is 12,000 volts, which is stepped up to 60,000 volts at the transformer station, where it is transmitted to Toronto, over eighty miles away. At Toronto, it is stepped down through transformers to 12,000 volts, and distributed to the various sub-stations throughout the city, where it is again reduced to a lower voltage for the operation of the various machines which these stations house. These sub-stations supply power for the Toronto Street Railway and the Toronto Electric Light Company.

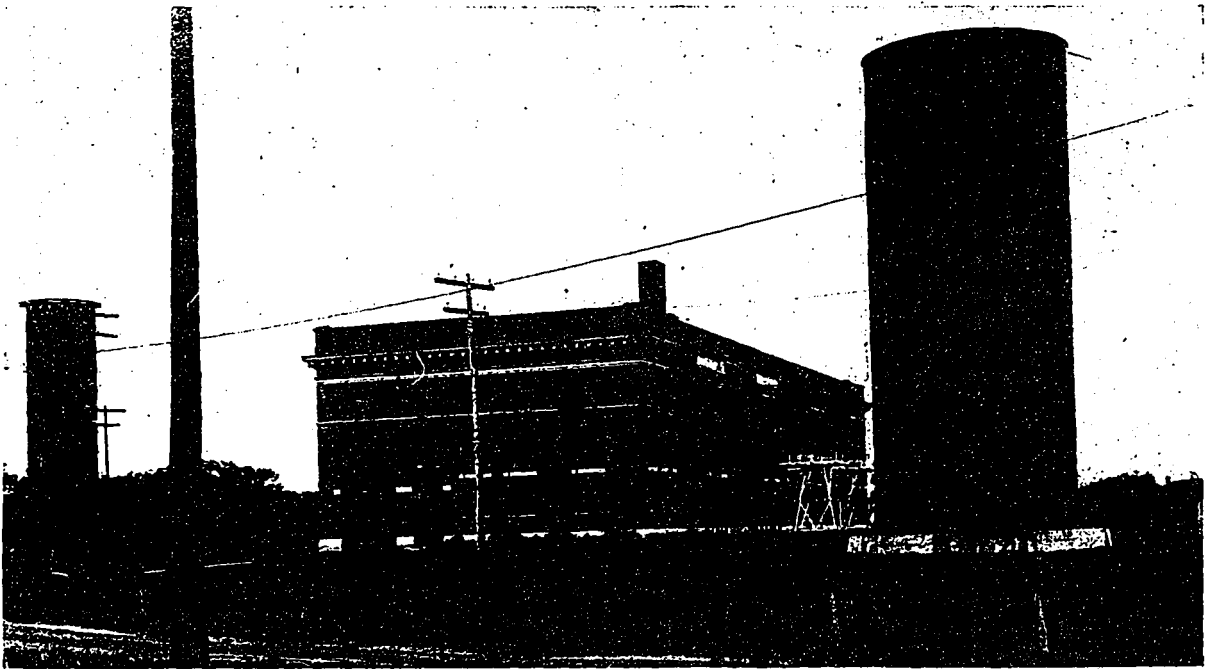
The plant in general is considered to be one of the most modern and thoroughly equipped power plants to be found anywhere. It is absolutely free from ice trouble, and its operation is unaffected by high or low water. This was amply demonstrated last winter when the high ice jam at Niagara harassed a number of plants along the gorge. As a protection against electric storms, the plant is equipped with the most approved lightning ap-

paratus to be procured, and in every way it is designed and constructed to attain the highest efficiency in service with the least possibility of interruption in operation.

way for lavatory purposes than to have either a basement stair or a side entrance at this point. Instead, the steps to the outside and the basement have been placed at the rear of the kitchen, and results in a more satisfactory arrangement.

The plan and decorative scheme of the up-stairs shows the same consistency in detail as is found on the floor below. The bath room is tiled and has a marble shower in the corner. Over the basin, having a light on either side, is a medicine cabinet with a mirror in the door for shaving. From a small trap door in the floor, runs a clothes chute to the basement, with a slide in the pantry and a small cabinet beneath the laundry ceiling for the clothes until wash day.

It was a question how to supply wardrobe room to bed room No. 3, without taking space from the bath room, or linen closet. It was found by merely placing a wardrobe in the corner of a room, gives a bad appearance. The problem was met by furring down the ceiling about ten inches in line with the wardrobe, and by running the picture mould beneath. This formed an alcove with the cupboard door opening into same. Also



Transformer Station, plant of the Electrical Development Company, Niagara Falls, Ont. E. J. Lennox, Architect.

The architect of the plant was Mr. E. J. Lennox, Toronto, and the firms identified with its erection and the installation of machinery were: Brick, cut stone, etc., Larkin, Sangster & Marshall; carpenter work, T. V. Gearing; copper work, etc., A. Matthews; steel work, etc., Canada Foundry Co.; plastering and marble work, Hoidge & Son; painting and glazing, A. M. Browne; generators, Canadian General Electric Co.; turbines, J. P. Morris Company.

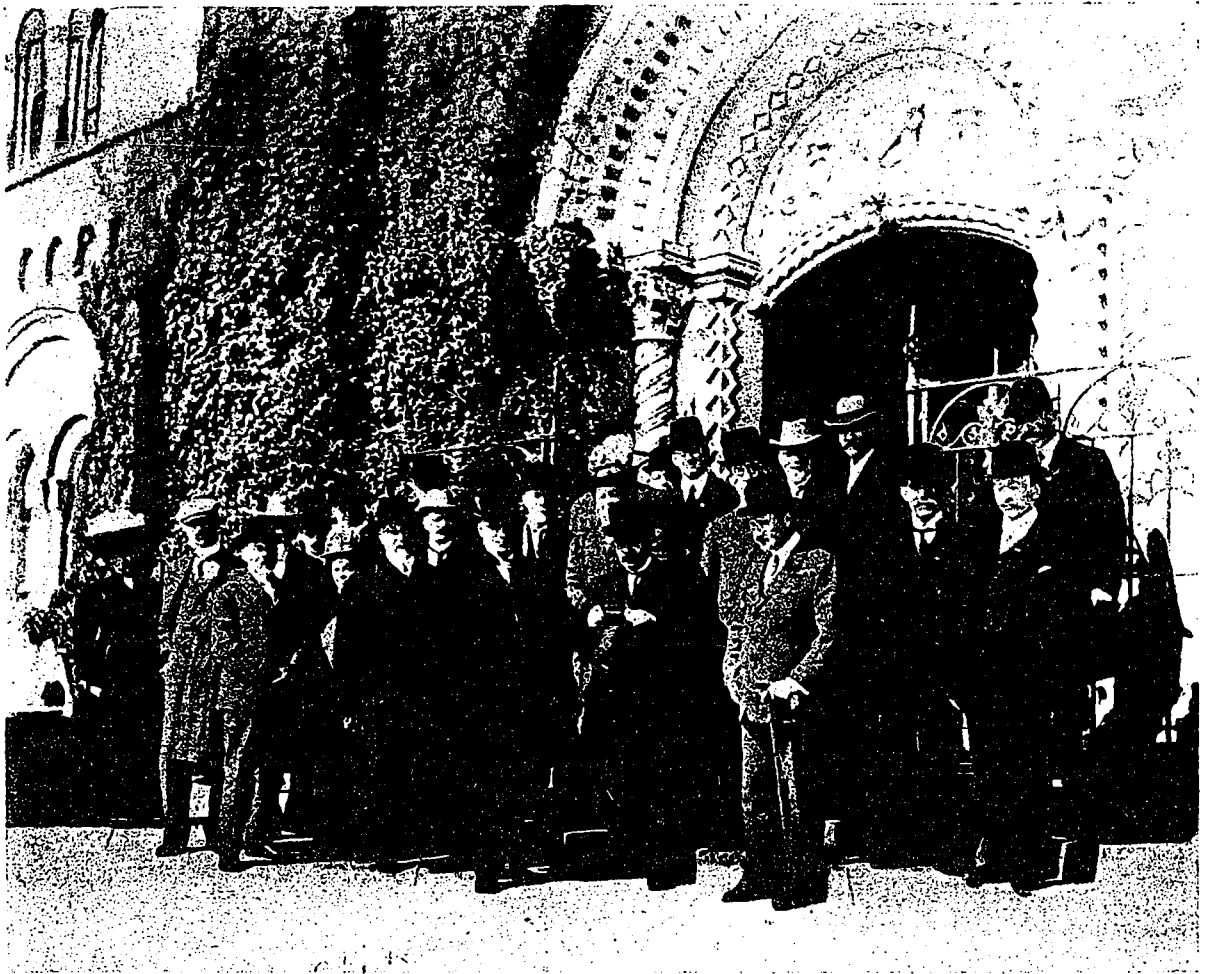
alcove with the wardrobe door opening into the same and also provided a convenient arrangement for an opening to the balcony.

The house itself faces more toward the east, and a pleasing feature has been worked out at the north-east point in the second story window which is slightly set back and placed diagonally across the corner, thus affording an exceptionally splendid view of the park beyond from bedroom No. 2. While this feature itself is not exactly an innovation, it is carried out in somewhat of an unusual manner in that a pier is continued up from the corner of the walls to the roof itself. This pier gives a strong sense of structural strength but in no way interferes with the view which is to be obtained at this point.

Church—Did you see the hotel fire?  
Gotham—Yes.  
"Totally destroyed, I suppose?"  
"Everything but a few sheets of writing paper on which was printed in large letters: 'This hotel is absolutely fireproof.'"—Yonkers Statesman.

## RESIDENCE OF WM. F. SPARLING, TORONTO.—Continued from Page 45.

The staircase in the reception hall comes forward just sufficiently to afford an easy ascent, and to screen the kitchen door from the front of the house; and it was thought preferable to utilize the space beneath the stair-



A Group of Delegates to the Second Annual Assembly of the Royal Architectural Institute of Canada, before the University of Toronto.

## SECOND ANNUAL ASSEMBLY OF R. A. I. C.—Condensed Proceedings of Convention of National Association Held Recently in Toronto—Federation of Provincial Bodies and Architectural Education Broadly Discussed—Winnipeg Selected for 1910 Assembly.

WITH THE EXCEPTION of the first organization meeting, held by the Royal Architectural Institute of Canada, the recent annual Assembly held in the rooms of the Ontario Association of Architects, Toronto, will be one of the most notable in its history. The very important question of the federation of all the architectural organizations of Canada, with the Royal Architectural Institute, was the one great, important subject before the Assembly.

This is, without question, the most important and most difficult problem the Institute has as yet been obliged to face, in so far as it is fraught with so many intricate problems, occasioned by the widely different character of the charters held by the several provincial associations, and it is only through the patient, conscientious, and unselfish handling of this subject that a strong Dominion federation may be effected.

That a national organization of architects in Canada will be enabled to effect the raising of the standard of the profession in Canada, and the giving of the profession the status it deserves, is a fact which no architect, who has the interests of his profession at heart, can gainsay, and, as one sat and listened to the many important, and

the many trivial objections raised by some of the provincial associations, and the careful, painstaking and patient way in which they were handled by the members present at the Assembly, he was impressed with the sacrificing, conscientious and broad minded attitude of these men, who have given their time and effort for the promotion of an organization, the benefits of which the architectural profession in Canada will enjoy for decades to come.

The Assembly was opened on the morning of October 5, and, in the absence of His Worship, the Mayor of Toronto, Mr. Gouinlock, President of the Ontario Association, welcomed the Assembly to the city of Toronto on behalf of the O.A.A. Mr. Gouinlock expressed his pleasure at being accorded the honor of welcoming the Institute to the city, and also to the rooms of the Ontario Association. He said that if only they could be assured of the united efforts of the provincial associations with those of the Institute, he was sure they would be able to obtain those beneficial results that they were striving for. The Ontario Association, he was sure, would do its utmost to entertain the visiting members of the Institute, while they were in the city, and he wanted them to under-

stand that, while they were in Toronto, the home of the O.A.A. was the home of the Institute.

### President's Address

Since our last annual meeting in Ottawa many important events have transpired. The granting of permission to adopt the prefix "Royal" by his Most Gracious Majesty, King Edward, the alliance with the Royal Institute of British Architects, and the consent of such men as Lord Strathcona and Mount Royal, Sir Aston Webb, R.A., Sir George A. Drummond, Sir William C. Macdonald, and Sir Hugh Graham, and many others to become honorary members, speaks volumes for the future progress and prosperity of the Royal Institute, and now that the preliminary work of the institute is about complete, it will be in order that we all should endeavor to accomplish the great object of our institute, namely, the better education of the coming architect. That, gentlemen, is the main point we have to keep in view. (Hear, hear.) This can be accomplished by a united effort on the part of all associations and their members throughout the Dominion. An article published in CONSTRUCTION for September last is worthy of perusal by all architects, and I have no doubt it thoroughly meets the views of all who have the advancement of the profession at heart. Some opposition has been given by a certain few who would seem to take exception to the efforts the institute is making towards the goal of progress and the future high standing of our architects. For what reason this opposition is put forth, no one can fathom, but I think it will eventually pass away. The aim of the institute is a noble one and must prevail. In time these few malcontents will see the error of their ways, as their kind have done before now in other countries, and I venture to prophecy that they will eventually be numbered among our strongest allies. A submitted grievance from them is that we have taken in members who are practising illegally. But we have not accepted one man who is not properly qualified. Therefore their assertion is not correct.

An outline of the whole of the proceedings of the past year will be given to you by our Hon. and worthy secretary, Mr. Chausse. Therefore, I need not delay this meeting by repeating the details of the great work which has been done during that time. Before taking my seat, however, I desire to thank especially our vice-president, Mr. Baker, for the great interest and noble work that he has done in connection with the alliance of this institute with the Royal Institute of British Architects. I would like also to thank Mr. Chausse, our worthy secretary, and Mr. Watts, the treasurer, for the very excellent work they both have done in the interests of the institute. I desire to thank at the same time all members of the different associations who have lent their assistance to the institute. Our acknowledgments are due to the press, and especially to CONSTRUCTION, for its able articles on Future Federation.

May I, in conclusion, make brief reference to a personal matter? It is to express my thanks to our Winnipeg members for the cordial manner in which they received me at their home in Winnipeg on the occasion of my recent trip out West. The Vancouver members were equally kind towards me in welcoming me to their city, and I wish to thank them most heartily.

I have also to thank the members of the institute for their attendance here to-day. I sincerely hope that the institute will benefit by their deliberations. For the present there is nothing else that I can bring forward which would be appropriate to an introductory address. Our first act of business will be the nomination of scrutineers for the election of officers and council, and the nomination of scrutineers for the election of members.

### Secretary's Report

Secretary Chausse then read the report of the Council, which was most interesting. It traced the whole history of the formation and progress of the Institute up to the last meeting of the Council, and he read the account of the various stages through which the Institute had passed, dating from April 12, 1907, at which time post cards were sent to architects in every portion of the Dominion of Canada, suggesting the formation of a national association, to the First General Assembly held at Ottawa, in October of 1908. To read carefully through these various stages in the history of the organization, gives one some idea of the sterling work performed by the promoters of the Institute. The report further referred to the fact that permission had been given by His Majesty King Edward VII. to adopt the prefix "Royal" to the title of the Institute. It referred also to Lord Grey's favor in giving his name as patron to the Association, and also the alliance with the Royal Institute of British Architects. According to the report of membership, the Royal Institute was composed of the best element of the profession, it having now 237 members, composed of 125 fellows, 70 associates, 24 honorary members, and 18 corresponding members. The report also regretted to chronicle the death of one of the vice-presidents of the Institute, Mr. Maurice Perrault. It was he who moved the resolution for the formation of the Society at its first meeting in Montreal, August 19, 1907.

### Treasurer's Report

The treasurer's report showed the Institute to be in a healthy condition financially, having a balance of cash in bank of \$803.61. A feature of this report to be commented upon is the exceedingly economical manner in which the funds of the association are being handled, and the report, as a whole, stands greatly to the credit of those responsible for conducting this most important branch of the Institute's work.

### Afternoon Session, October 5th

In the afternoon session of October 5, the subject most discussed was the federation of the architectural bodies of Canada. Mr. Chausse read his report regarding the steps that had been taken in this direction, and presented a communication which he had sent on the 9th of June, 1909, to the secretaries of each of the seven societies which were represented at the conference held in Toronto on April 6, 1909. The letter read as follows:

"Enclosed please find the report of the conference concerning the federation of the various architectural bodies in the Dominion, held in Toronto, 6th April last, and I beg to call the special attention of your society to the resolution unanimously adopted at that conference and which you are kindly requested to consider. The general annual assembly of the Institute will be held in Toronto on October 5th and 6th, 1909."

On the 3rd of September he sent another letter, as follows:

"On 9th of June last I had the pleasure of mailing your society the report of the conference concerning the federation of the various architectural bodies in the Dominion, held in Toronto, 6th April, 1909, with the request that your society consider above and send a delegation to the general annual assembly of the Royal Institute, which will be held in Toronto, Ont., on October 5th and 6th, 1909.

"I now take the liberty of reminding your society that I would be very pleased to be informed of the names of its delegates, and of the intended action of your association on the subject of federation as suggested in the enclosed report." letter from O A A.

The only reply he had received was from the secretary of the Ontario Association of Architects, dated September 15, which read as follows:

"Alcide Chausse, Esq., Secretary R.A.I.C., Montreal: Dear Sir,—The Committee of the Ontario Association of Architects which met the Council of the R.A.I.C. on the 6th April, in Toronto, will be the representation or delegates of this Association at the meeting to be held in October next, as this committee was appointed at our annual meeting in January, 1909,

"to consider the question of affiliation and report at our next annual meeting in January, 1910, and therefore has not yet reported.

"The names are: Messrs. F. S. Baker, Traders' Bank Building, Toronto, chairman; E. Burke, 28 Toronto street, Toronto; E. L. Horwood, Bank Street Chambers, Ottawa; W. A. Langton, 88 King street east, Toronto; and A. H. Gregg, 59 Yonge street, Toronto. Yours truly, WM. R. GREGG."

He received the following letter from the Alberta Association of Architects, dated September 27, which read as follows:

"In reply to your letter of the 7th Inst., we are again asking Mr. John Archibald to represent us at the meeting in Toronto next week."

"John Archibald, Esq.: Dear Sir,—At the last meeting of our Council the matter of the scheme of federation suggested by the O.A.A. again came up for discussion and I was requested to write to you and ask if you would be so good as to again represent our association at the meeting in Toronto next week.

"Our views on this matter are as follows: With reference to clauses 1 and 2, we agree with these provided that membership in the official provincial bodies will be by examination or such other tests as are required under the charters of the Quebec and Alberta Associations, and until such examinations or other tests are compulsory throughout the Dominion we cannot recognize membership of the Royal Architectural Institute of Canada as entitling members to join our association and to practise in this province.

"With reference to clause 3, we do not object to the principle of a per capita contribution provided we are satisfied that our association will receive some benefits in return.

"With reference to clause 4, we are agreeable to this method of voting provided the delegates' expenses are paid by the Institute.

"As previously expressed, we are in full accord with the attitude you have taken and the views you have expressed, and we are satisfied to leave our interests in your hands. Again thanking you for the help you have rendered us, I am, yours very truly, H. M. WHIDDINGTON, Hon. Secretary, Strathcona."

He had also received a letter from Mr. Archibald that morning, which read as follows:

"A. Chausse, Esq., Secretary Royal Architectural Institute of Canada, Montreal, Que.: Dear Sir,—At a meeting of a special committee appointed by the Council of the P.Q.A.A. to consider the scheme of federation of the Architectural Institute of Canada, the following resolution was adopted: 'After discussing the subject thoroughly, it was resolved, That whereas the Royal Architectural Institute of Canada is not composed entirely of members of our profession, the Province of Quebec Association of Architects refuses to recognize them as a body competent to initiate a scheme of federation; at the same time we recognize that the adoption of some scheme of federation would be advantageous to the profession throughout the Dominion, but that it should emanate from the joint action of the present legally incorporated professional associations. We consider the time is opportune for an expression of opinion between the said provincial associations, and that immediate steps should be taken to communicate with the said associations in order to arrive at joint concerted action.'

"It was decided to communicate with the following associations: Alberta Association of Architects, Ontario Association of Architects, Manitoba Association of Architects; also the Toronto Association and the Regina Association. And the meeting adjourned.

"We are in receipt of the following telegram from the Alberta Association of Architects: 'Fully agree with views contained in your letter written you Toronto. H. M. Whiddington, Alberta Assn. Architects.' Yours truly, JNO. S. ARCHIBALD."

Mr. Chausse went on to state that a letter was sent by Mr. Archibald to the secretary of the different provincial associations, but not addressed to the Institute. He stated that he had received a copy of the document by accident. The letter, which gave the date of Montreal, September 4, 1909, gives the resolution quoted above as having been adopted at a meeting of the Special Committee of the P.Q.A.A.

Mr. Chausse believed it seemed, to discuss the first proposal of the Institute to add certain articles to its present by-laws, which were not entertained at the conference, for Mr. Archibald, after quoting the resolution of the Special Committee, in the words already read, went on to say:

"In further explanation of this resolution, we consider that we, as provincial associations, have nothing whatever to do with the amending of any by-laws of the Architectural Institute of Canada. Furthermore, no care has been exercised in examining applications for membership in their association, and as a result their association is not composed entirely of members of the profession. This fact they recognize in their proposed amendment of article 59 of the by-law of their Institute, wherein they are prepared to federate with any association in the Dominion (consisting in whole or in part of professional members). We of the P.Q.A.A. recognize the fact that, irrespective of professional ethics, we are prevented by legal enactment from taking into our association other than those who belong to the practising staff of our profession.

"The other suggested amendments of the by-laws of the Architectural Institute of Canada are childish, and could

"not in any way be made to assimilate with existing conditions as found in the Dominion.

"The P.Q.A.A. intend communicating their views to the meeting of the Architectural Institute to be held in Toronto next month, and if such views meet with the approval of your association it will be desirable that concerted action be taken by all provincial associations so that the Architectural Institute of Canada may have no doubts whatever on the views entertained by the provincial associations. Yours truly, JNO. S. ARCHIBALD."

Mr. Baker stated that he also had received a letter that morning from Mr. Archibald in answer to one to Mr. Archibald by the committee of the Ontario Association of Architects. Mr. Archibald's letter was as follows:

"Dear Sir,—I beg to acknowledge receipt of yours of the 2nd Inst. Your Association is evidently laboring under a mistake when they put me down as seconding Mr. Langton's resolution re federation of the Architectural Institutes of Canada. The resolution I moved at the meeting last April, was merely that the scheme proposed by the Ontario Association of Architects be referred to the respective provincial bodies for consideration, and reported upon at a later meeting. I note that the report of the Architectural Institute gives the same impression.

"Further, Article 5 of the section of the Ontario Association of Architects was not read at the meeting referred to in April. The P. Q. A. A. are now putting themselves in a position that they do not consider the Architectural Institute of Canada a competent body to issue such a movement.

"Yours truly, (Signed) JNO. S. ARCHIBALD"

## Discussion

These letters brought out a very lively discussion, and it seemed to be the belief of those present that a very serious misunderstanding existed between the Alberta and Quebec Associations, and the Institute as to the manner in which the Institute aimed to bring about a federation.

It was stated by the President, Mr. Monette, and Mr. Chausse, all of whom are members of the Quebec Association, that the letter did not come from the Council of the Province of Quebec Association of Architects, and that the Report, as submitted by Mr. Archibald, would hardly be official until it had been approved by the Annual Assembly of the Q.A.A.

In the discussion that followed, there seemed to be a diversity of opinion as to the wording of the several clauses in Project "A", so that the operations of the Institute would not interfere with the rights granted the above mentioned two provincial associations through the charters they held. The members present did not approve of any method that would tend to take from any Provincial Association such powers as they now possess, and it was generally conceded that some method should be devised whereby future members of the Royal Institute of Architects should be admitted only through the Provincial Associations. Discussion followed as to whether the Institute, at its Assembly, should instruct its Council to follow a different course in the formulating of a basis upon which federation might be accomplished, or whether it was better to appoint a committee with power to negotiate with the provincial associations and other architectural bodies with a view to drawing up a scheme of amalgamation or federation. The latter, however, most of the members present thought would be simply deferring the matter, and it seemed to be the general opinion that the Assembly should give the Council recommendations, of a more or less definite nature, that would facilitate the establishment of some basis of operation. All through the discussion it was very plain to be seen that the Royal Institute was in no way desirous of laying down any arbitrary regulations under which the provincial bodies might be federated with it, but displayed a very broad inclination towards some harmonious and amicable "give and take" attitude.

With regard to Mr. Archibald's proposal that the Institute should have been formed by delegates from the various Provincial Associations, it was pointed out that the delegates at the first meeting for the organization

of the Institute, were representative men from almost every architectural body in Canada.

Clause 3 of Project "A," came in for some discussion, with regard to the portion of the fees that the Provincial Associations should hand over to the Royal Institute.

After some discussion over Clauses 4 and 5, the subject, "The Possibilities of a National Status for Architects in Canada," was discussed by Mr. Gordon, Mr. Watton and Mr. Hynes.

## Possibilities of a National Status of Architects in Canada

### Voluntary Co-operation the Main Need

Mr. Gordon said:—I have not prepared any set paper on this subject, and though it has some relation to the question which we have just been discussing it is not exactly the same. The possibility of a Federal Association of Architects has been a "live question" for some time past, but the subject we have to discuss for a little while now is the possibility of a national status for architects. In other words, is it possible that from the Atlantic to the Pacific, throughout the whole breadth of Canada, there shall be a national status by which Canadian architects shall be recognized in all the provinces of the Dominion?

It seems to me that in many ways we very often start at the wrong end. We start by assuming that certain things—very desirable things—must be legally enacted at once. We have got the old error in our minds, many of us—I know I have—that we can do almost anything by Act of Parliament. But we find, fortunately, that we cannot always get Acts of Parliament passed. Then sometimes we can get Acts of Parliament which do not accomplish the things we intended them to accomplish. However, I am not going to approach this subject from its legislative side at all, but from quite another point of view.

We are all agreed, I am sure, that it is desirable that we should have a national status for architects, because it would enhance the profession of the architects, it would raise the standard of architecture, and have a more stimulating effect upon the individual architect. The desirability is therefore conceded. What we wish to consider now for a brief space is the possibility of having a national status.

We have been talking for quite a long time this afternoon about existing architectural organizations, what this one holds and what the other one is willing to leave, and the conflict of views that are held by different people in different provinces and by different people in the same province is such as to make it seem there is little likelihood of any immediate solution of the problem of a national status for architects. I think we must first of all get rid of the idea that we can change the existing organizations. We have at least two provincial associations whose franchises give them very strong powers, and it is not in human nature to expect these bodies to surrender anything of the power they have. Then we have other organizations, some of them voluntary in character, who have by many years work accomplished certain things. We can hardly expect them to revolutionize their associations. But we may expect that in the process of years, as we practise co-operation, education, and enlightenment, and as we carry on such discussions as we have had here to-day—I say we may expect an appreciable amelioration of the existing conditions of the profession, but, gentlemen, it will be a slow process. But there is one thing we ought at once to all set our minds working upon, and that is the elimination from the existing conditions of, may I say the suspicions which architects sometimes nurse one towards the other in the different provinces? While, therefore, we cannot alter the organizations we can go a long way to improve the existing condition of things and so make for the possibilities of a national status.

It is quite wrong that there should be such great differences of opinion and differences of feeling and differences of aim among the architects in the different parts of the country, so that one man is suspicious of another man, and one implies that another is being actuated by provincial or sectional views. We must get rid of that. We must come to a place of mutual trust and understanding, the place which I hope we are all seeking and from which we can unite in an effort to advance and elevate the architects' profession. With mistrust and differences of feeling cleared away, the next question is how are we going to approach the problem of securing a national status. I think we are perhaps aiming at too much when we are striving to secure federation all at once. I felt that as we were discussing the matter this afternoon. It seems to me that where there are such divergencies of opinion, we should advance by stages of evolution. First let us seek to co-operate one with another to attain mutual betterment, and when we have thus demonstrated to one another that although there may be differences of opinion upon minor points our aims are the same; then with a closer relationship and a greater trust one in the other we may go from co-operation to affiliation, rubbing off the corners here and there, getting more and more into closer touch each with the other until we are ripe for organized union or federation. And then we should be able to have a national status that would be recognized and upheld by law.

But there is a more important and more immediate matter than getting a national status which would have legal sanction. We want a national status that can be accomplished along other lines, and it seems to me that this is what we ought ourselves to strive to do at once: This national status I refer to now must be along voluntary lines to commence, whatever the future may bring about. Whatever our progress may justify in the future, at the start the co-operation to-

wards a national status must be, as I say, along voluntary lines. And in doing this we want to assure our friends in Quebec and Alberta that we have no idea or desire to encroach upon their provincial statutory prerogatives, and no intention of lessening their provincial status. But we do have a great desire to produce a national feeling and obtain national results in architecture. (Hear, hear). We must ask ourselves and we must ask all the architects in Canada to give something and to do something towards this movement, for anything that means anything costs something. Therefore, while there may not be any need for any surrender of any of our legal rights there must be a giving up, a compromise, a modification of our opinions and views here and there in order that we may arrive at something like unanimity of action in an attempt to reach a national status.

Let me point out, after these few preliminary remarks, what lines I think we ought to proceed upon.

First of all, it seems to me that the status of an architect should be founded upon his ethical dignity as a professional man. I know there are those who submit that it is the artistic side of our profession that gives it its high importance and significance. But to-night, although I am willing to grant that, because it has an artistic side, that because it is an art, we look upon our profession in the high and affectionate way we do, still, after all, architecture is a business as well as an art, and in the practice and exercise of this business the first fundamental principle is surely the ethical side.

I do not know whether it is possible, but it seems to me that it is possible, that all provincial architectural bodies ought to unite upon the formulation and the promulgation and the publication, and the continual publication and the insistence of an ethical code. We have of course had our ethical codes. At different stages of our existence these have been passed upon, and printed—and then laid away. (Laughter). Friends, what we want first of all, above all, is to hold up and insist upon before the members of our profession, from ocean to ocean, is a proper ethical practise of our profession, so that those who are weak-kneed may be strengthened, so that others who may be in fault may be guided by the force of the opinion of the profession as a whole to do only that which is ethical and proper to the practise of the profession. That is the first thing towards the building up of a national status.

Then, while this institute cannot in a full sense be an educative body, yet the institute can be a very important element in the promulgation of architectural education throughout the country. We ought to aim at an educational status for the whole of Canada. We should seek to simulate the provincial bodies in this respect; we should seek to stimulate the provincial governments to contribute to our universities, if not to endow a chair of architecture in the different universities, or found a college of architecture. By this means we might do a very great deal to raise the standard of architectural education in all our provinces, and indeed create a national educational standard for the Dominion. There is a tremendous field of opportunities for work here.

Then when we have accomplished that, I think we might well turn our efforts to improving the relationship of the architects with their clients and the public. In other words, we may direct our efforts to the framing of a national status of fees, and to the regulating of all matters of that nature that come into the relations between the architect and his client. These are the three great lines upon which we can at once enter in relation to the setting up of a national status of architecture throughout the country, and I believe that when we have made progress on these lines it will be a very easy matter for us not only to federate but a very easy matter for us to get from not only the provincial governments, but also from the Dominion Government, all the legislation we think necessary for the further safe-guarding of our profession and for the further uplifting of architecture and the progress of our art.

### Aims and Aspirations Should be High

Mr. Hynes, at the call of the President, followed with a brief speech. "I heartily agree," he said, "with everything that Mr. Gordon has said, and in every particular, but I cannot add very much to the subject he has so ably discussed. The first thing that occurs to me in relation to the setting up of a national status is that we ought not to appear small and set up any low standard. Let our aims and aspirations be on a high standard. In every one of the learned professions, a good high standard has been taken in this country: Our legal men and our medical men stand very high not only in their profession in their own country, but when they have come into professional contact with the practitioners of other lands they have maintained a high reputation, and I hope that in relation to our own profession, upon educational and other lines we shall have the highest and best standard that it is possible to attain. In other architectural societies, such for example as the American Institute they accept men who are of proved worth, and in Illinois members are admitted only after a course of examinations. In this connection I may say that I look more to an educational standard than to any standard set up by legislative enactment. The great crying need of our profession here, it seems to me, is the provision of improved opportunities for young men to get a thorough grounding before they start to practise; better means are badly needed for technical training. In regard again to educational or legislative standards, I submit that it cannot be expected any legislative body will prohibit a man from making a livelihood because he may not be, let us say, sufficiently artistic. We cannot expect to raise the status of the architectural profession from a legislative source. It can only be properly done through the educational authorities. As regards educational facilities, I think here the architectural profession has assumed a burden which really is not its own. The profession cannot very well carry on an educational course and bring those who intended to be the architects of the future through a thorough training. This work properly belongs to the educational department of the government. Particularly in Canada, where the provincial governments assume the responsibility for higher education, it is their duty to see that the facilities are pro-

vided which it is necessary architectural students should have. Our organizations can urge on the governments to fulfil its duty in this regard, and if the professional bodies were to agitate until such grants were made to the universities the proper education of the architect could be fully provided for, with opportunities to develop the practical as well as the art side, it would be no difficult matter to raise the status of the profession to the level it ought to occupy. (Applause).

#### High National Status Possible of Attainment

Mr. Watts, in concluding the discussion, said: Mr. Gordon has expressed my ideas, and I think the ideas of all who are present, in regard to the subject of a national status for architects in this country. With respect to the possibilities of having such status, I think we may confidently say that all things are possible. To put it briefly, the righteousness of the cause will exalt the status and the profession if we only go on the lines suggested by Mr. Gordon and raise the ethics of our profession to the highest point practicable.

Touching on federation it occurred to me that we have a very striking illustration of difficulties overcome and a splendid cause gained in the case of our own country. At one time people in British Columbia refused to be called Canadians, and after the days of Upper and Lower Canada, and in the early days of the federation, I am told that on Dominion Day, the black flag was hoisted in certain parts of the Maritime Provinces. Now mark the change. All differences and difficulties have been happily overcome, and from the far east to the far west, we are all united and contented and proud to form part of one great Dominion. There is a good example for us to follow. It is hardly to be expected that we shall see the federation of all the architectural societies of the Dominion in a full sense until a few years good hard work has been accomplished towards that end. It requires the work of large, broad minded men, but the task is worth while. I am certain it would be a grand thing for the profession if we had this Dominion federation. We have to continue quietly at work. We are on the right lines to-day in having passed this resolution which puts the matter in the hands of the Council. The provincial associations can hardly call us selfish. The question will have to be thrashed out by the council and these societies, and at our next assembly I hope the Council will be able to make a report showing good faith and earnestness on both sides with a promise of a scheme which will unite us all in one national object. (Applause).

#### Session of Wednesday, Aug. 6th

Most of the session of Wednesday morning, Aug. 6th, was taken up with some minor amendments to the by-laws of the Institute, the most important changes in which were amendments to Clauses 49 and 50, which were made to read as follows:—

*"Clause 49.—New by-laws or alteration or repeal of said by-laws may be made in the following manner: Notification of proposed new by-laws or of alteration or repeal of existing by-laws, shall be given to the Honorable Secretary, signed by at least two voting members, not later than two months before the date of the General Assembly."*

*"Clause 50.—The Hon. Secretary shall issue notices of proposition, specifying the proposed new by-law or alteration or repeal of any existing by-law, which may be thus proposed, and send same to all members of the Royal Institute, not less than one month before the General Annual Assembly. That new by-law, or alteration or repeal, be adopted or rejected with the General Annual Assembly, and not less than two-thirds of the votes cast, shall be required to effect any change. The Council may also propose new by-laws or alteration or repeal of existing by-laws, and may submit same to the General Annual Assembly, as above."*

The proposed amendment to the schedule of charges, by which a rate would be fixed for the preparation of plans, within specification and supervision, after some discussion, was withdrawn. After some minor amendments to the rules for architectural competition, it was unanimously agreed to hold the 1910 Assembly in Winnipeg, the date to be fixed by the Council, after a consultation with the members of the Manitoba Architects' Association.

Scrutineers reported on seven new names that had been submitted for membership, none of which were elected, due to the fact that, in each case, there were more than 10 per cent. of negative votes. Mr. Baker gave notice of a motion to be made at the next meeting, proposing to discontinue the present method of electing members, and that thereafter the Institute should proceed with the election by a show of hands at the meeting, instead of by letter ballot. It seemed to be the general

opinion of those present that this method would be impracticable, and Mr. Baker, finally agreed to give the existing method a trial, and withdrew his notice to present the motion.

#### Officers for 1910

The following officers for 1910 were declared elected: President.—Mr. A. F. Dunlop, Montreal.  
Vice-Presidents.—Messrs. J. Z. Resther, Montreal; Sam Hooper, Winnipeg; and Edmund Burke, Toronto.  
Honorary Secretary.—Mr. Alcide Chausse, Montreal.  
Honorary Treasurer.—Mr. J. W. H. Watts, Ottawa.

#### COUNCIL.

Mr. W. H. Archer, Vancouver, 18.  
Mr. C. B. Chappell, Charlottetown, 19.  
Mr. T. Daoust, Montreal, 22.  
Mr. D. Ewart, Ottawa, 21.  
Mr. C. E. Fairweather, St. John, N.B., 11.  
Mr. A. H. Gregg, Toronto, 6.  
Mr. H. E. Gates, Halifax, 20.  
Mr. H. B. Gordon, Toronto, 20.  
Mr. E. L. Horwood, Ottawa, 14.  
Mr. G. A. Monette, Montreal, 22.  
Mr. J. P. Hynes, Toronto, 13.  
Mr. K. P. LeMay, Quebec, 9.  
Mr. S. Frank Peters, Winnipeg, 13.  
Mr. J. E. Wize, Edmonton, 13.

#### AUDITORS.

Messrs. J. Fenning Taylor and Colborne P. Meredith, Ottawa.

Note.—The elections were by Letter Ballot, and, accordingly the ballots were blank and the members were at liberty to vote for any member for any office. The Scrutineers found that most of the members voted, for the office of President, for Messrs. A. F. Dunlop and F. S. Baker. The former was re-elected on a very small majority. For the offices of Vice-Presidents, members voted for Messrs. J. Z. Resther, Edmund Burke, Sam Hooper and F. S. Baker. On this election again Mr. Baker was beaten on a small majority, and, as some of the members voted for Mr. Baker as member of the Council, his votes were divided, and though he received a larger number of votes in all, he was not elected to any office. Mr. Baker is a worker in the Council and regrets were expressed that he was not re-elected. At the Meeting of the Council, held after the Assembly, on the 6th October, Mr. A. H. Gregg, resigned as member of the Council, and Mr. F. S. Baker was elected to fill the vacant position, so, after all, through the sacrifice of Mr. Gregg, the Institute is fortunate in still having Mr. Baker on the Council.

The President, returning thanks for election, said:—

Gentlemen, I am very much obliged to you for the honor that you have accorded me this afternoon, but when I was elected as president last year, I said that I hoped when the time came round for the next president to be elected you would select a gentleman for the office from the city in which the annual meeting was to be held. I think it is only right that this honor should be moved from one city to another. I do not think it is right that one man should monopolize the office of president for year after year. I have filled the position now for two years, and I think I am in duty bound to vacate the chair and allow you to put another member of the Institute in my place. That is the way I feel about it. While I appreciate the honor very much, I really would like to see a change. I think it would be helping the progress of the Institute. Of course, I am in your hands. At the same time, I must say again that I think it would be a benefit to the Institute if the presidency were shifted from one city to another as we change the place of our annual general assemblies. With a president from Toronto serving a term and then another from Winnipeg, we shall see a progressive Institute whose officers will, as we were, "keep the ball rolling" in the way of advancement. Therefore I would like to ask you to accept my resignation and take the necessary steps to elect as president whoever might be approved by this meeting.

The feeling of the meeting, however, was that, insofar as Mr. Dunlop had given such very excellent service during the early stages of the formation of the Institution, and, in view of the fact that it had been the wish of the

(Continued on Page 74).





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

**Vol. 2 Toronto, October, 1909 No. 12**

**Current Topics**

**POLE DWELLINGS** four thousand years old, similar to those discovered in the north of Switzerland, have been unearthed in a swamp on the plateau east of Lake Vetter, 120 miles north-west of Stockholm. The excavations disclosed petrified apples, wheat kernels, nuts, pottery, flint and horn implements, amber ornaments and wild boar teeth, which the calcareous mud in which they were embedded, has kept in a good state of preservation.

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**ONE OF THE PECULIAR CUSTOMS** which obtain in Egypt is the secrecy maintained by the Government regarding the names of successful bidders for contracts and of those receiving concessions. Information of this character is not frequently given out, and it is only occasionally that such names are published in the "Journal Official." It is said, however, that some plan of early and public announcement of contractors' and concessionaires' names is now under advisement.

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**WINNIPEG'S PHENOMENAL GROWTH** was strikingly brought out in a recent report which showed that during the first seven months of this year permits were issued for new buildings entailing a total expenditure of \$6,500,000. This amount is practically double that recorded in the same period of last year. The buildings under construction, according to the report, include 20 warehouses, factories and additions; 11 schools and educational institutions; 20 business and office structures, and 22 apartment houses, several of the latter costing about \$200,000 each. It is also pointed out, that since the first of the year, about 1,700 substantial residences have either been erected or are now being built, and that the progress made in this direction during 1909 will be something truly remarkable.

**THE FIRST GRAIN ELEVATOR** in Russian Asia will soon be built at Tchalabinsk, on the Siberian Railway, with a capacity of 50,000 cars of grain per annum (cars average from 12 to 15 tons each). This undertaking, it is believed, will pave the way for a large number of similar improvements through that country. Tchalabinsk is near the border between European and Asiatic Russia.

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**THE CARPENTERS' STRIKE** at Winnipeg has practically resolved itself into a strike without strikers. A rather paradoxical situation, we admit, but at least this is the pith and substance of a recent press report. It seems that the contractors and the men have come to terms in a number of instances, and that the strife in general has materially lessened. The prospects are that any existing difficulty will be adjusted in the near future.

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**MEERSCHAUM AS A BUILDING MATERIAL** is something that is quite out of the ordinary, yet the town of Vallecas, Spain, is built almost entirely of this product. On the outskirts of the town are great quarries of meerschaum too coarse for pipe making, so it is therefore used extensively for construction purposes. As a result the town has an ivory whiteness which shines resplendently in the Spanish sun. The meerschaum comes from the earth yellow and turns white after ten days bleaching in the sun.

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**OWING TO AN INCREASED NUMBER** of papers and discussions, and the large volume of business to be transacted, the Executive of National Association of Cement users (U.S.) has decided to give the exhibitors and those who will be in attendance at the Sixth Annual Convention, the benefit of one day more than has been customary in the past. An announcement to this effect has just been sent out from the Association's headquarters in Philadelphia, stating that the next convention will be held at Chicago from February 21-25, inclusive.

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**A MARVELLOUS MOSAIC PAVEMENT** according to the Venice Correspondent of the London Morning Post, has been discovered beneath the floor of the great Cathedral of Aquileia. During drainage operation, says the writer, the whole of the right aisle, 154 feet by 27, was laid bare, resulting in the discovery at the depth of a metre of a beautiful and absolutely perfect mosaic floor, of which not a single piece is missing. The mosaic is believed to be the largest in existence, as it extends over the whole nave and left aisle as well, and the indication are that it stretches beyond the church as far as the huge campanile. The design depicts birds, beasts and fishes, a shepherd with Pan's pipes in one hand and a sheep over his shoulders, a stork with a snake in its beak, and two dolphins. The date of the mosaic is uncertain, but the design itself is most unique.

\* \* \*

**LAW HAS JUST BEEN PASSED** in France prohibiting the use of white lead. After the lapse of three years, the use of white lead or paint containing it is to be prohibited for every description of painting work. This legislation is due to a petition unanimously endorsed by the labor unions of France, asking that the use of white lead in paint be prohibited on the grounds that it was very injurious to health. The bill to prohibit its uses was introduced in 1906, but as investigation in 86 of the 88 departments in France, as well as Algeria and Tunis, showed that only a low percentage of mortality among painters could be ascribed to this cause, the bill was defeated. However, another bill for the same purpose was shortly introduced. It was enacted by the lower house of the French Congress in 1907 and was discussed in the Senate and by joint committee from time to time until July 13, 1909, when it became a law.

*THE REBUILDING OF THREE RIVERS* is rapidly approaching the final stage, and by the time the snow falls the streets of the burned district will have again taken on their erstwhile business-like appearance. Quite a number of new structures were commenced within the past few weeks, and work on these is being expedited so as to have buildings under roof before winter sets in. The new buildings are said to be of a good type in general, and many show a great improvement architecturally over the structures which they have replaced.

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*THE TOTAL QUANTITY* of Portland, natural, and puzzolan cements produced last year in the United States was 52,910,925 barrels, valued at \$44,477,653. As compared with 1907, whose production was 52,230,342 barrels, valued at \$55,903,851, the year showed an increase of 1.3 per cent. in quantity and a decrease of 20 per cent. in value. The total Portland cement production was 51,072,612 barrels, valued at \$43,547,679. This is an increase in quantity of 4.6 per cent. and a decrease in value of 19.3 per cent. compared with the figures for 1907. The average price per barrel was 85 cents. Of the four types of Portland cement, divided according to the kinds of raw material used, 40.6 per cent. was made from cement rock and pure limestone, 45 per cent. from limestone and clay or shale, 5.5 per cent. from marl and clay, and 8.9 per cent. from slag and limestone. The production of Portland cement has shown an increase each year. The natural cement industry, on the other hand, reached its maximum in 1899, with an output of 9,868,179 barrels, since which year it has shown an almost continuous decrease, until now it has become a relatively unimportant factor in the cement situation. The natural cement produced in the United States in 1908 amounted to 1,686,862 barrels, valued at \$834,509, which was a decrease of 41 per cent. in quantity and 43 per cent. in value under the preceding year. Of puzzolan cement, made by mixing blast furnace slag and slaked lime, there was manufactured 151,451 barrels, valued at \$95,468, a heavy decrease when compared with the production reported for 1907.

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*WHILE THE ANNUAL OUTPUT* of cement in the United States has assumed enormous proportions, Canada has by no means been slow in the development of this important industry. Each succeeding year has seen the production steadily increasing, and the recent merger of the various cement companies has brought within the focus of the public's eye the magnitude of Canadian resources and enterprise in this direction. Perhaps the most gratifying feature of this development is the fact that the cement industry in Canada has now practically reached that point when it is no longer necessary for Canadian contractors and engineers to make their purchase in foreign markets; and also that the importation of cement in late years has showed a most marked curtailment. According to a recent Government bulletin, the use of domestic made cement has increased from 600,000 barrels in 1903 to 2,600,000 barrels in 1908. Previous to 1904 the imports of Portland cement were larger than the total Canadian production; while for 1909 it is estimated that they will not represent more than 14 per cent. of the total consumption. In 1908, 23 cement plants were in operation in Canada, with a total daily capacity of 27,500 barrels, or an annual output of some 8,250,000 barrels if all were running full time; although the price of cement was somewhat lower than in 1907, the sales were far greater than in any previous year. The value of cement sold in 1908 was \$3,709,139; average price per barrel, \$1.39; wages paid, \$1,275,638; number of men employed, 3,029.

*A RECENT COMMUNICATION* to the Department of Trade and Commerce from Trade Commissioner D. H. Ross, Stock Exchange, Melbourne, Australia, in which reference is made to enquiries received regarding asbestos boiler covering, etc., states that catalogues and quotations for wholesale quantities upon the basis of f.o.b. steamer New York—together with a few small samples of asbestos goods—sent to the Commissioners' office would probably result in a number of orders being secured by Canadian manufacturers in both Melbourne and Adelaide.

\* \* \*

*CANADA IS THE GREATEST PRODUCER* of asbestos in the world, and yet the Dominion has done but little to convert the raw material into the manufactured product. In this respect the United States leads all other countries, although according to a brochure just issued by the U.S. Geological Survey, much less than one per cent. of the material used is mined across the border. An idea as to the relative importance of the two countries as regards this mineral can be gleaned from the fact that Canada last year (1908) produced 65,534 tons valued at \$2,547,507, while the output of the United States amounted to but 936 tons valued at \$19,624. The brochure goes on to show that there are only two active mines in the United States at present, one in Vermont and the other in Georgia, although deposits of asbestos are known to exist in the Grand Canyon of Arizona, Wyoming, and in California. In view of the fact that these properties are lying dormant, and are not being developed, it is quite evident that the manufacturers of the United States find in Canada an asbestos that is vastly superior to the product to be obtained in their own country; and it is also equally as evident that Canada, through the lack of an export duty on this mineral, has been aiding her neighbor to the south to build up a manufacturing industry which, by the very nature of things, should practically be an exclusive enterprise of the Dominion itself. Canada's nearest competitor in the production of asbestos is possibly Russia, whose output in 1907 was 10,308 tons.

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*IN A RECENT NUMBER* of the publications of the German health office, a report appears with very full details regarding the tests applied to a new pigment called vitralin, a highly lustrous paint which can be applied to surfaces with the same ease as ordinary paints, with a basis of white lead, or zinc white. Its chief value is for disinfecting, and it is prepared and sold more specifically for use in rooms, etc., where it is desired to combat pathogenic germs. In this respect it seems to be far in advance of all of the ordinary substances applied to walls, containing lime or lead compounds. Tests were made by spreading the pigment over glass, porcelain, brick and wood with satisfactory results. The disinfectant property remains for a considerable time in the coating of paint, although after the lapse of a year it was found to be distinctly weaker—i.e., a longer time was required to bring about complete destruction of bacteria. The conclusion of the investigators was that the specific disinfectant property of vitralin results from the oxidation of the linseed oil which forms an important constituent of this paint, as of most paints. Further, this oxidation is dependent upon the presence of a certain degree of moisture, and, naturally, of oxygen; and warmth as well as light is an important factor in favoring the formation of the active germicidal agent. This property of vitralin is likewise unaffected by prolonged exposure to powerful antiseptic agents, such as corrosive sublimate, formalin, kirsol-sulphuric acid, etc. It is quite possible that the paint, owing to the antiseptic properties, will be used in the warfare which is being so persistently waged in Germany against tuberculosis.



Four family cottage, built of concrete blocks, at Paisley, Scotland, where this form of construction is coming much into evidence.

## CONCRETE BLOCK CONSTRUCTION ABROAD.—European and Other Countries Adopting Manufactured Stone with Gratifying Results.—Work Shows Consideration of Architectural and Constructive Detail.—Illustrations of Introductory Use of Concrete Blocks in Scotland

WHILE HOLLOW CONCRETE BLOCKS are gradually attaining a more widespread recognition as a building material, and while their use is to be seen in almost every city, town and village on this continent, yet in too many instances buildings so constructed are at the best repulsive architecturally, cold in aspect, and an eye-sore to the community in which they are erected. This is not because the concrete block—that is the well made and properly cured block—is possessed of any inherent defect, nor because its use does not admit of the constructive and decorative possibilities of other materials, but rather because of the fact that so many individuals have gone in this field of industry without any previous experience or knowledge of concrete or the principles of construction, and have created a class of work, which no matter how liberally we view it, has been prejudicial to the interests of concrete block construction.

Perhaps the greatest drawback in this country, to the development of any new industry, has been the element of "haste." We compliment ourselves on our own initiative, and the manner in which we grasp and undertake new things, and point with pride to the progress we make in their exploitations and use. Quite often we jump into a new enterprise or industry, buy the necessary equipment, become our own task master and apprentice to-day, and to-morrow launch out as full fledged manufacturers or contractors ready for anything which comes our way. In our eagerness to "get a going," we are often prone in the early stages, to sacrifice that thoroughness in our work, which must eventually be considered, if we are to succeed; and that

is precisely what has happened in the early development of the concrete block industry.

It is not intended, however, that this criticism should apply to everyone engaged in this line of business. There are many concerns that have taken hold of the work in a thorough and intelligent manner, and the buildings erected by them reflect no little credit as regards their enterprise and skill. Again, it must be remembered in this connection, that other materials such as wood, stone, brick, etc., when first used showed a crudity of form that rendered them in appearance, far inferior to the primitive concrete block. With all materials, beauty has been evolved from utility, and in this respect the concrete block has shown much earlier manifestations than any other medium that has been adopted in building construction.

But, however, if we stop to consider the initial results in this country, as compared with the results attained in some of the European countries, where the industry is practically in its infancy and where the same concrete block machines and materials are used, we cannot help but become conscious of the fact that those abroad have greatly surpassed us in this class of work. The reason for this is that the foreign manufacturer or contractor, especially in construction work, puts forth his very best efforts, and does his utmost to obtain the most satisfactory and highest results possible. It is freely admitted throughout the Dominion and the United States, that the rank and file who have received their education and training abroad are more thorough and methodical in what they undertake, than are those who are engaged in similar walks of life on this continent.



This house shows the introductory use of concrete blocks in Scotland. It is a two-family dwelling located on the main Glasgow Road, Paisley, and was the first concrete block house built at that place. Note how carefully the architectural and constructive detail has been considered and the thorough manner in which the work has been executed.



Terrace of concrete block houses at Burnside (near Glasgow), Scotland, providing accommodation for nine families. This illustration shows how well adapted this material is to meet the needs of economical and well constructed dwellings of the attached type.

The European's success lies in the fact that he makes a study of his problem, his means of production, his materials, the possibilities which his field offers, and the results to be obtained. In construction work, he brings into play the very best of architectural and engineering skill, and is prepared, when starting out with a new enterprise, to turn out the best quality of materials and the highest grade of workmanship, that it is possible to produce.

In connection with this article, we are publishing several illustrations of hollow concrete block construction, as seen in residential work across the Atlantic, believing that these views will serve to more adequately give the reader an idea of what is being attained there in this respect, than can any verbal description. Most of these buildings are in the vicinity of Glasgow, Scotland, and they have been constructed in a locality where wood and brick structures are unknown, and where stone has been the principle building material for centuries. These illustrations show a pleasing range in house design, and a consideration of architectural and

and adopted. In Italy the investigations of a prominent firm of engineers and contractors, who visited the American continent to study the merits of this type of construction, has been followed by a most marked progress in this line. In Spain a number of concrete block houses have been built with good results. In Germany, France, Austria and Switzerland, many buildings of this kind have been built and are now under construction, and in Russia the initial work is now being done to introduce this character of building material, with no little success.

One feature which must impress any visitor to Europe is the permanency of construction to be seen in all countries. The respective governments there demand a better class of building in general than do we on this continent, and the wisdom of more strict building regulations is readily discerned in the low annual fire loss, as compared to the loss sustained each year in Canada and the United States. Little or no wood is used in the external construction of a building, and every step is taken to reduce the danger of fire to the lowest point possible. The main thing there is to produce economical, durable and sani-



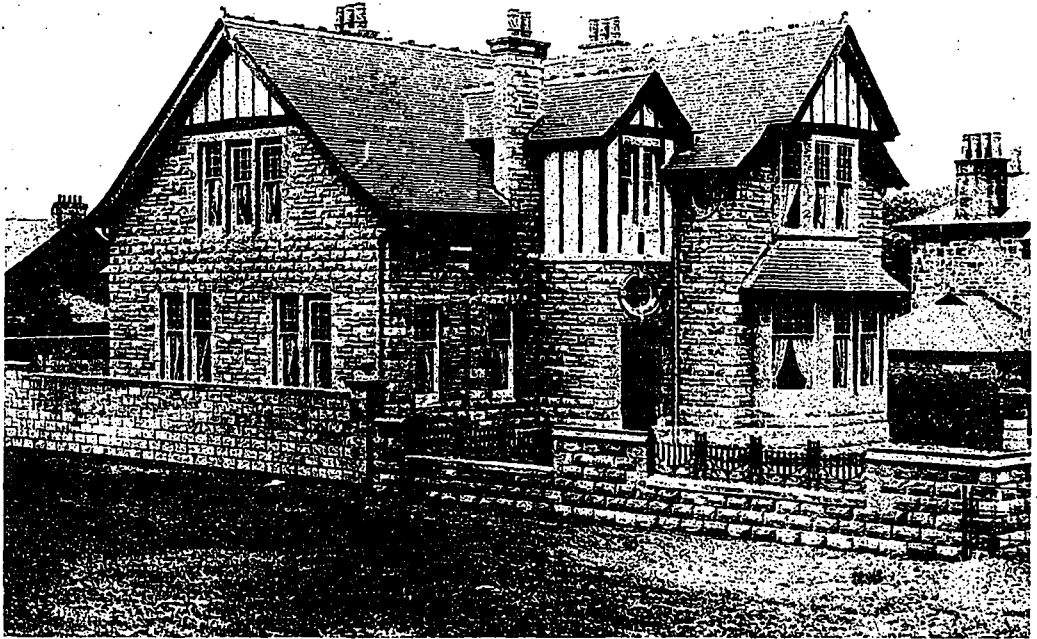
Two family cottage at Dumbarton, Scotland. A simply and pleasingly designed small double dwelling, executed in concrete block, the front of the building being of panel blocks, while the remaining portion of the walls is carried out in blocks of the rock-faced type.

constructive details which readily commend the use of concrete blocks where economical, artistic and substantially built houses are desired. In each instance the walls are solidly built, quiet and inviting in appearance, and lacking that repelling monotony which has too often characterized work of this kind; and while these houses simply serve to show the introductory use of concrete blocks in Scotland, it is quite evident from the thorough and highly creditable manner in which the work has been executed, that this class of material will be assured an important and permanent place in the future building undertakings of that country.

More progress has possibly been made in the development of this type of construction in England, Scotland and Ireland, than in any other section of Europe, although in the continental countries considerable headway is being made, and here and there in different parts are to be seen a sufficient number of instances of hollow concrete block construction, to satisfactorily demonstrate that this manner of erecting buildings is being widely recognized

and this very fact has been favorable to concrete block construction, in that five-sixths of the materials used consist of sand and gravel, easily obtained in any locality, which brings the cost down to a low figure and gives the hollow concrete block, in this respect, a decided advantage.

But European countries, however, are not the only foreign parts which are displaying marked activity in the development of this important industry. There is in fact no civilized country in the world but where the application of concrete blocks to building construction is to be seen. Their use is becoming more evident in urban and rural construction, in factories and warehouses, schools and churches, the town residence and the farm-house, and they are even to be seen in more important buildings. The Provincial Capital Building at Zamboanga, Philippine Islands, shows an interesting example of their use, the blocks having been made and laid up by native Moras, a semi-savage people. In Khartum, Egypt, the Public Works Department of the



Detached concrete block residence, Paisley, Scotland. Note the ashlar effect, with panel trim at corners and plain trim around windows and doors.



Four family concrete block house, Paisley, Scotland. Note how monotony of rock face is relieved by introduction of panel blocks and broken ashlar effects.

Sudan Government are using a large number of machines and employing concrete block in extensive construction work; and they have also come prominently into use in Australia, New Zealand, India, China and Japan, and in nearly every Central and South American country.

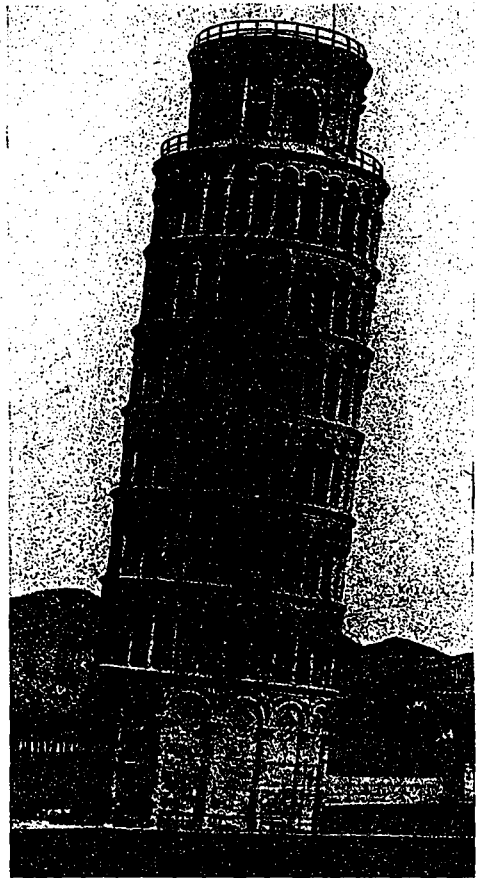
It seems quite manifest in view of the expansion which is taking place abroad, that concrete blocks are destined to play an important part in the future building construction of foreign countries. It is equally as evident that they will also be a big factor in our own development in this respect. In districts in Canada where suitable clay is not to be found, concrete blocks will undoubtedly come to be accepted as a most durable, sanitary and economical method of construction. The accompanying illustrations amply attest to the highly satisfactory results that can be obtained. All that is necessary to attain highly satisfactory work in this direction is that we assimilate the "thoroughness" of the European and study our materials and problems as he does. This continent has invented and perfected the modern concrete block machine, and most encouraging progress has been made in its use; but the European has shown us a consideration for architectural and constructive detail in the manufacture and application of this character of building material that is well worthy of imitation.

The photographs used to illustrate this article were kindly loaned CONSTRUCTION by the Ideal Concrete Machinery Company of London, Ont., and the very excellent character of these houses are fully demonstrative of the high standard of concrete block work, which is produced on the machine manufactured by this company. There is no machine on the market capable of meeting either the architectural or constructive requirements of the builder in concrete block work, more fully than the "Ideal"; and, for this reason it is employed in practically every civilized country on the globe, and has done much to popularize this economic and sanitary form of construction.

## LEANING TOWER OF PISA.

*THE LEANING TOWER OF PISA* is one of the wonders of the world, and, from a builder's standpoint, probably the most unusual ever constructed. Various reasons have from time to time been suggested for its peculiar construction, but the theory most generally accepted is that the foundation settled on one side during construction and that the building was then completed, the columns in the upper stories being made somewhat longer on the lower side to prevent, it is supposed, too great an incline. The tower was begun in 1174, and was not completed until 1350. It is eight stories high (180

there are seven bells, and from the top is one of the most magnificent views in Italy. A circular staircase around an open well leads to the top. It is said that Galileo,

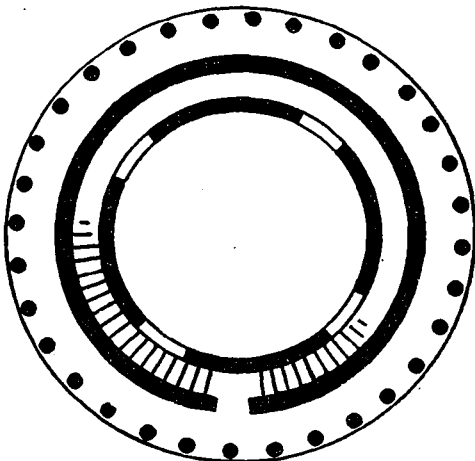


Famous Leaning Tower of Pisa.

whose ideas of the pendulum were suggested by a swinging lamp in the adjoining cathedral, later made his experiment with strings hanging from the inclined side of this tower.

*AN IMPORTANT WORK* which takes about ten years to complete, has just begun at St. Peter's Rome. It is the repaving of the vast edifice, which the feet of the crowds visiting it during succeeding centuries have worn away. It is estimated that it will cost about £80,000 to restore the 12,000 square metres of pavement damaged, and this only represents about one-half of the total surface. The restoration will be a work of patience, for it is intended to supply the place of each old stone with one precisely similar. But it is here that the difficulty presents itself. Where are the marbles to be obtained? Many of the species used for the original pavement are no longer obtainable. They came from the ancient Roman temples, from the columns and tablets found buried in the earth, and to-day such finds are very rare. Nevertheless the Chapter of St. Peter's has been able to acquire some of these rare marbles. The remaining portions will have to be sought from the quarries of Carrara.

*BY A RECENT DEGREE* the government of Venezuela has exempted sanitary water-closets, urinals, in-odorous sewers, and kindred appliances from import duty. This offers a good opening to manufacturers who are looking for markets abroad. Venezuela is one of the several Latin American countries which is taking vigorous steps to bring their sanitary system up to a high standard.



Typical floor plan of Leaning Tower.

feet) and about 13 feet out of plumb. The circumference at the base is 160 feet. The tower is built entirely of marble. The columns number 207. In the belfry

## PLUMBING SYSTEMS.—Principles on Which They Should be Founded.—By William Gerhard, C.F.

**P**LUMBING WORK comprises means and appliances for supplying buildings with water, for removing water fouled by use, and for removing storm water from roofs and paved courts and areas. I shall here consider only the removal of the water which has been used in buildings. This removal is accomplished by a system of fixtures, traps, waste, soil and drain-pipes, with the necessary vent pipes; these together constitute the house drainage system.

The individual house drainage systems form the units composing together the joint sewer system of a community. To be effective, the house drainage system must be correctly laid out and operated properly. Every such system should fulfil certain requirements, which I will state briefly.

1. The house drainage system should remove from the building quickly and completely all liquid wastes, including human excreta, water used for washing and bathing purposes, kitchen water, and sometimes, though not always, the storm water. The removal of the house sewage should be effected before decomposition sets in. It should be accomplished without contaminating the soil, the air, or the water.

2. A house plumbing system should be so arranged that under no circumstances will there be an escape of sewer air into any room in the building. This is accomplished by the proper and safe trapping of all outlets.

3. Foul-gases, originating in the house pipes, should be diluted, oxidized, and thus rendered innocuous. The entire pipe system should be without long dead ends, where the air would stagnate.

These are the three general requirements which every system must fulfil.

I come now to some more specific advice, contained in the following maxims:

1. Each building should have a separate connection with the street sewer. Large buildings may require several connections, and these are better than one pipe of a very large size.

2. All the drain, soil, waste, and vent pipes within the building, and up to a point five feet outside, should be of heavy cast-iron pipe, with lead-caulked joints, or of galvanized screw jointed pipe with recessed drainage fittings. No earthenware or tile drains should be allowed within the building.

3. All pipe conduits for sewage should be constructed air and water tight, to prevent leakage of sewage and of sewer air.

4. All the horizontal and vertical pipes should be carried as straight as possible. Offsets on vertical vent-lines should be made under 45 degrees.

5. On horizontal lines use Y branches, not tees, for junctions or connections.

6. All the pipe conduits, traps, cleanouts, as well as the fixtures, should be kept exposed and easily accessible for inspection or repairs.

7. All the pipe conduits should be of minimum diameter consistent with volume of sewage or waste water to be carried, because in this way the flow of water is more concentrated, and the pipes are flushed out better.

8. All pipe conduits should have good supports, good alignment, and a sufficient fall.

9. All soil and vent pipes should be extended the full size to the roof, or even enlarged at the roof, to prevent closing of the pipes by hoar frost in cold climates. No pipe above the roof should be less than 4 inches.

10. The number of vertical stacks in a building should be reduced to a minimum, and this can be accomplished by concentrating the plumbing work and making branches as short as possible.

11. Reduce the number of fixtures and arrange them as much as possible, and as much as is consistent with convenient use, in vertical groups. A single soil pipe may answer for the fixtures on the number of floors.

12. Place plumbing fixtures only in ventilated rooms, and confine the plumbing to bath and toilet rooms, to kitchen, pantry and laundry.

13. All the plumbing fixtures should be trapped separately and safely. The trapped waste from one fixture should never pass through another trap before reaching the soil pipe or the house drain.

14. Fixtures should be of non-absorbent material; all sharp corners should be avoided, glazed and smooth surfaces are required. Wood and porous stone should be condemned as unsuitable.

15. Modern plumbing work dispenses entirely, and properly so, with the former wooden enclosures of fixtures.

16. There are certain pipes in every house which should never be connected to a sewer or soil pipe—for instance, the overflow pipe from the house tank, and in particular the wastes from refrigerators or ice boxes. These should drop over a trapped and water supplied sink.

17. Avoid having in the house any fixture which is not in daily use, as the evaporation of water will soon unseat the trap.

Each plumbing fixture should be arranged to empty quickly, like a flush tank. All pipe conduits should be well flushed, and if the grade is slight, special flushing appliances for the house drain should be provided.

These are the leading axioms, which I shall require you to keep well in your mind. Note also the following summary of requirements: (1) Good and durable material; (2) good workmanship; (3) good supports, fall and alignment; (4) proper junctions; (5) direct and short runs; (6) accessibility of all parts; (7) safe trapping of the fixtures; (8) perfect ventilation; (9) powerful flushing; (10) instant removal of all wastes from the building; (11) noiselessness in action; (12) protection against freezing of the plumbing; (13) prevention of unnecessary waste of water; (14) simplicity of arrangement, concentration of work; (15) avoidance of all complicated mechanical apparatus.

These rules should be applied, where the plumbing is in charge of a health officer, to all new work for which plans are submitted to him. They also should be made to apply to inspections of old plumbing work.

Let me mention here one popular fallacy, viz., that "only nickel-plated plumbing work" can be sanitary. I want to assure you that you can have just as sanitary plumbing work if you use iron or lead piping, which can be made to look well by aluminium bronzing or enamel painting.

*THE NOBLEST BRIDGE IN THE WORLD* is Waterloo Bridge, according to the artist Canova, who considered that it was "alone worth coming from Rome to London to see." The French engineer Dupin, in his memoirs on the public works of England, called the bridge "a colossal monument worthy of Sesostris and the Casars." Waterloo Bridge was erected by a joint-stock company, the cost was a million, and the constructor was Sir John Rennie. It was opened on the second anniversary of Waterloo by the Prince Regent, who had with him many royal dukes, the Duke of Wellington, and many British officers who had taken part in the battle. Up till the early seventies tolls were charged on the bridge, and for the six years preceding 1873 there was an income of more than £21,000 per annum.—*SLATE TRADE GAZETTE.*



# THE MODERN CHURCH.—What Should It Be?—Hysteria in Art More Dangerous than Ignorance.—Architect's First and Foremost Duty Should be to Satisfy Requirements of Problem Before Him.—Mysticism and Inspired Architecture Uncalled for. By J. STEWART BARNEY

Much discussion has been engaged in recently with regard to the establishment of a New World Type of Architecture. Mr. J. Stewart Barney, of New York City, is unquestionably one of the most prominent architects in America, who appears to have extremely strong ideas with regard to the establishment of a New Era in Architecture on this Continent. Mr. Barney stands out as a Free Thinker in the profession, a man who with his statements has frightened the prebendaries, deans and curates of the old school of architecture. He believes that we should not import our ideas from the Old World, and that buildings should be designed with consideration for utilitarian as well as the artistic effect. He further contends that we have much to fear from hysteria in art in architecture. His more recent statements with regard to his views in these matters have caused a very wide discussion. His article pertaining to church architecture in America, reproduced herewith from a recent issue of "Munsey's" magazine, while it will not meet with the approval of many of our Old School Architects, has much in it that will prove interesting to the architect of the more practical turn of mind, who appreciates the necessity of being influenced in his work by modern and local conditions.—EDITOR.



The Broadway Tabernacle (Congregational), Broadway and Fifty-sixth street, New York, designed by J. Stewart Barney. While thoroughly ecclesiastical in character, this church is remarkable as combining, on a limited site, a large auditorium and a twelve-story office building for parish work.

that which had preceded him, or which was beyond the limits of his immediate neighborhood, the change he made was so slight that it was a natural process of evolution.

At the time of the invention of printing, we note a condition of affairs somewhat similar to that of to-day. The world was suddenly flooded with information which it was not yet prepared to receive, digest, and assimilate. The Renaissance was the result. At no period in the evolution of architecture, until the present, have such violent changes been brought about in so short a time. The architect

suddenly came into possession of some of the records of the ancients, and his effort seems to have been to exhibit to the world the recently acquired knowledge of which he was so proud. The results were as pedantic as they were illogical.

The architect of to-day, on account of the great facility of travel and the wonderful advance which has been made in the science of photography, has within his grasp the entire architecture of the world, through all the ages. He can select anything that may suit his own particular taste, whether or not it truthfully expresses the needs and requirements of any particular congregation or creed.

Exactly what sort of a building our modern church will finally be is a question of interest and importance; but he would, indeed, be a bold man who would undertake to give a definite and final answer.

If the problem is impossible of definite solution, it is not for lack of discussion and debate. Many and able have been the champions of the contending schools. On the one hand we have the Gothicist, who holds that the classic renaissance, in sweeping away the medieval style, destroyed for all time the true idea of church architecture. On the other hand, it is urged that we are but carrying out the irresistible law of evolution by the universal adoption of the style of the Renaissance.

Again, we have the sentimentalist, who is carried away by the sentimental and historic associations which the buildings of Europe have for him. He, in turn, is met by the rationalist, who insists upon a truthful and logical expression of our requirements, and an absolute disregard of precedent in architecture, if it in any way interferes with this.

One of the champions of medievalism speaks thus \* of the Renaissance and its effect upon architecture:

"Hell burst loose over all Europe, and during its dominance was developed, among other things, that

**T**HE QUESTION is often asked why, in a great modern city like New York, there may be found, often almost side by side, churches that suggest the soaring Gothic cathedrals of fifteenth-century France, the colonnaded temples of Rome, or the flat-domed mosques of Byzantium. The answer is simple. It is because photography has given to the modern architect the architecture of all countries, periods, and styles, from which he may gather inspiration. There is no reason why one should not find here the forms and ideas of a dozen periods and a dozen countries, endlessly combined and modified, flourishing in incongruous variety; whereas there were many good reasons why this condition of affairs could not exist in the Middle Ages.

An expert can, upon examining the details of a medieval cathedral, read within a few years the date of the building and within a small radius its position in Europe, simply because at that particular period, in that particular locality, they were all saying the same thing. On account of the limited means of communication and the scarcity of written records, the history of architecture was then written by hand in stone, and communicated from generation to generation, and carried from locality to locality, by word of mouth or by personal instruction. The architect stamped upon his work his own personality; but as he had little information as to

\*Article by Ralph Adams Cram in the Architectural Review, under the title "Note on Architectural Style."

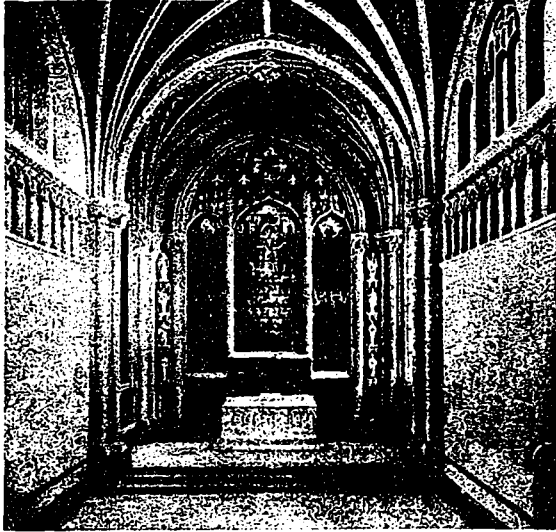
architectural style which modified and elaborated by Paris, is now offered us for universal acceptance."

This quotation represents one of the influences at work in the development of our ecclesiastical architecture. It follows this aphorism:

Classical architecture must not be used as the visible expression of Christian religion or Christian civilization.

And is followed by this blood-curdling statement:

"St. Peter's is Alexander VI. and Leo X. in concrete



St. Saviour's Chapel (Belmont Memorial), the central and largest chapel of the seven that encircle the Choir of the Episcopal Cathedral of St. John the Divine, New York. Designed by Heins & LaFarge. This chapel is of the Decorated Gothic type.

form, and any building modelled thereon expresses the debauchery, the blood-thirstiness, and the grinning hypocrisy of the time which, equally with its architecture, they were the incarnation."

This law unto God, man, and architect is delivered with the intolerance and absolutely uncompromising cruelty of the first inquisitor-general. Our modern Torquemada, with the pitiless despotism of the Inquisition, now thrusts out into utter pagan darkness all archi-

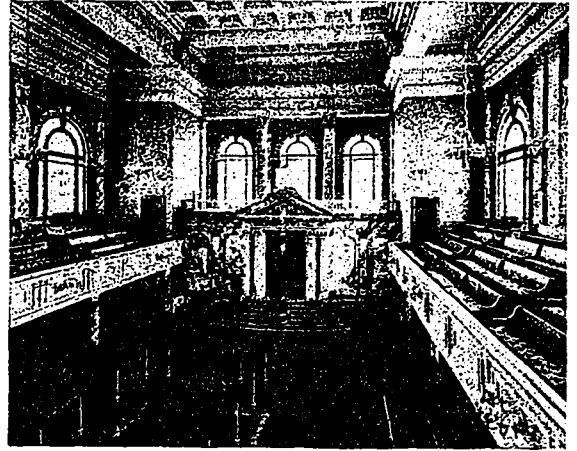


The Temple Emanu-el, the chief synagogue of New York. This is generally termed a Moorish church, but it is safe to assume that the architect, the late Leopold Eidlitz, was inspired by the Early Christian architecture, to which he has very cleverly adapted Moorish detail.

teets who are so steeped in sin and iniquity as to tolerate the sinful pagan forms. To his stern soul art is not a form of amusement. It is a sermon, if not a penance. He claims to breathe into every stone the intense heat of his religious fervor, and in some mysterious manner

this advocate of mysticism in architecture reads in the actual architectural forms the religious faith of the architect.

The sincerity of his words, which no one has the right to doubt, would have influence upon all devout



The Synagogue Shearith Israel, Central Park West and Seventieth Street, New York. Designed by Brunner & Tyron. This is probably the best example of a modern place of worship built for an Orthodox Jewish congregation.

Christians seeking the services of an architect, had he not been guilty of accusing "the classical practitioners" in no uncertain terms of a "scheme" to retain in their hands commissions that would otherwise go to men of his own school. This might suggest that his holy horror was not entirely due to the fact that "a recrudescence of religion, a reassertion of the finality of the catholic faith and the indestructibility of the visible



St. Columba's Chapel, one of the seven chapels of the Episcopal Cathedral of St. John the Divine, New York. Designed by Heins & LaFarge. The round pillars recall the Norman pillars in Durham Cathedral, while the window tracery is of a much later period.

church, formed no part" of this "scheme," but it might have a tendency to weaken his hold on the ministerial world, and force him to meet this sinful classic "propaganda" with an equally subtle one published in religious papers.

Another influence is expressed in the following quotation:\*

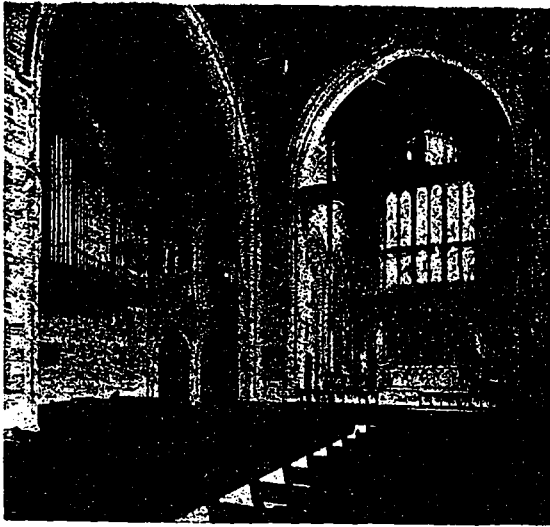
"The church . . . makes a radical mistake when it

\*Article by Thomas Hastings in the Architectural Review, under the title "A Plea for the Renaissance in Ecclesiastical Architecture."

dictates a medieval style. To this no self-respecting architect with real convictions who truly knows and loves his art can submit."

This is preceded by a gentle truism:

"If the church would seem to be what it really is, its architecture must be the outward expression of its



St. Ignatius Church (Episcopal), West End Avenue and Eighty-seventh Street, New York, designed by Charles C. Haight. A free and clever American interpretation of the Anglican parish church.

real life; to be one thing and seem another is lacking in sincerity and in truth."

This "plea for the Renaissance in ecclesiastical architecture" is as platitudinous as the arguments against it are dictatorial, but as both make a great point of the outward expression in architectural forms of the truth and sincerity of the church, it will be interesting to know how the advocate of the Renaissance proposes to accomplish this.

He first admits that "the church may require the



St. Patrick's Cathedral (Roman Catholic). This great church, designed by the late James Renwick, is in the style generally known as Late French Gothic; the details, however, might more correctly be called Decorated English Gothic.

Latin or Greek cross in plan, the high central aisle and transept, clearstory windows, flying buttresses, and the many motives generally associated with Gothic architecture, but it makes a radical mistake when it dictates

a medieval style." Therefore, if, according to his own statement, the church may employ the motives generally associated with Gothic architecture, we must infer that it is only the Gothic detail to which he objects, and to which he says that "no self-respecting architect can submit." Therefore, simply by the use of Renaissance details for our churches, truth and sincerity will be expressed, even though we use all of the motives generally associated with the Gothic architecture.

But he also states very distinctly that "style is only a matter of detail." Therefore, in advocating the selection of a style, although elsewhere this same writer declares that the "question of selecting the style" is one of the crying evils of modern times.

After he has decided that it is, after all, necessary to select a style, it is hard to understand why he selects the Renaissance, when he states, farther on:

"The Renaissance churches are not religious in character, they are not conducive to religious thought, they do not appeal to the emotional side of our nature, or lend themselves to church worship."

He explains this as follows:

"Fortunately, never since the cave-dwellers and mound-builders, until modern times, did any people ever undertake such a thing as to interfere with the great historic continuity of style. Now, forsooth, it is no



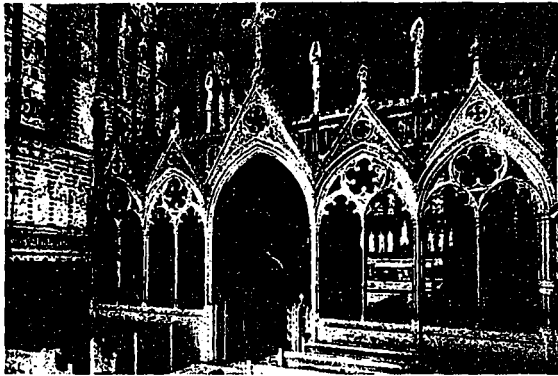
St. Charles Borromeo's Church (Roman Catholic), West One Hundred and Forty-first Street, New York, designed by George H. Streeton. This illustration is interesting as showing the charming effect of the play of light and shade in a vaulted Gothic roof.

longer a question of the study of character—to make a church look like a church; it is only a question of selecting the style."

After this it would seem inconsistent on his part to advocate the selection of the Renaissance style, which, according to his own statement, was founded on "a revolution which took place in the architectural evolution," a revolution so sudden and violent that in the very brief period of three generations it produced "the dawn of the real Renaissance." This could hardly be said to be following his principles—"the great accumulated principles of architectural composition and all rational motives of construction, unchangeable through the ages." And again, he certainly would not advocate adopting a style which, as he has already admitted, is not religious in its character, simply because he thinks that in time it might be made so. What becomes of the sincerity and truth of the church during this experimental period?

He allows that "we can study and find inspiration in the great principles of Gothic composition, but to adapt the style"—which he has defined as a mere matter of

detail—"to modern conditions of life is an inexcusable anachronism." This seems to be another statement of the principle that the use of Renaissance details for our

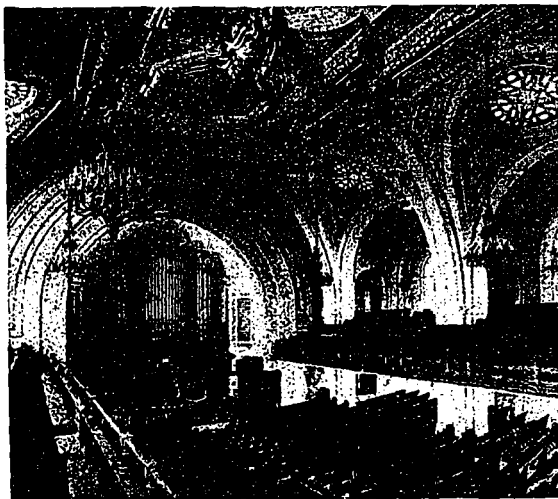


The Chapel of the Good Shepherd, in the General Theological Seminary (Episcopal), New York, designed by Charles C. Haight. This view shows the Rood Screen, a prominent feature of the English type of Collegiate Chapel.

churches will give to our church architecture the real, living spirit of religion. Such a position is rendered more extraordinary by the fact that he dwells upon the religious fervor of the Gothic architects, saying that "their very souls were in this work, praising God with every chisel-stroke," and complaining bitterly of the lack of religious fervor of the modern workman, who thinks only of his wage.

He would apparently have us conclude that truth and sincerity in our ecclesiastical architecture will be obtained by building Renaissance churches, which are "not conducive to religious thought," and decorating their exteriors with pagan detail, carved by irreligious workmen. Yet, might it not almost be considered sacrilegious to call upon the architect to express in this way an "outward and visible sign of an inward and spiritual grace?"

Still another influence is represented by the following



First Church of Christ (Scientist), Central Park West and Ninety-sixth Street, New York, designed by Carrere & Hastings. A costly church building in the Modern French style, with notably rich and elaborate decorations, verging on the Baroque.

quotation from an article\* written by a well-known literateur under the title: "What Do Our Church Buildings Express?"

"This origin of temple, church, and synagogue in a

\*An article by Charles De Kay, published in the Review of Reviews.

subterranean tomb or cave should not be forgotten when examining the religious edifices of ancient and modern peoples."

The writer apparently is one of those poetic souls who insist that the beauty of architecture must be that of association. He bases his criticism of a building upon the resemblance which he imagines that he sees between it and some old-world structure with which he is more or less familiar, and which produced upon him certain

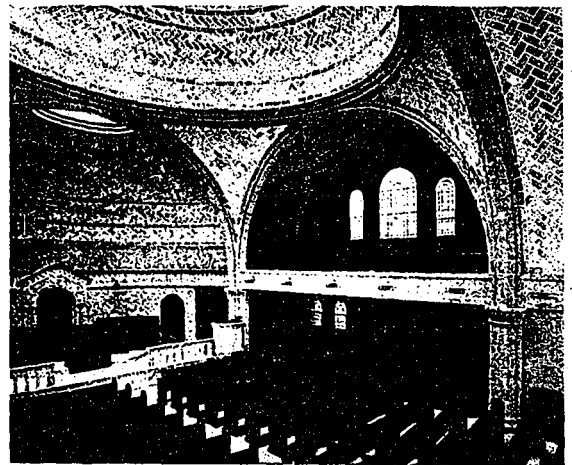


The Rhinelander Memorial Church (Episcopal), East Eighty-eighth Street, New York, designed by J. Stewart Barney. Early English timber roof, Modern English glass, Late French Gothic octagonal apse, vaulted aisles, and clear story are here combined, harmonized, and adapted to a modern city church.

effects. The resemblance does not necessarily have to be striking for him to see it, as is shown by the fact that the Broadway Tabernacle, in New York, a building which is distinctly practical and is French Gothic of the fifteenth century, has for him "a faint flavor of the Orient."

Hysteria in art is more dangerous than ignorance, though less criminal than chicanery. In the amateur, if well developed, it is incurable. In the professional, it takes the form of business policy, which he changes to suit the fashion. It is generally seen in its most acute stage in the writers of hysterical articles on the subject of art and architecture. These call upon the architect "to say something to the point which cannot be misunderstood by believers." They ask:

Why should not some great composer arise in this



Amity Baptist Church, South Fifty-fourth Street, Brooklyn, designed by Rossiter & Wright. This illustrates some of the latest methods of construction, and though rather plain in its treatment, is a new note in church architecture, indicating great possibilities of future development.

the most ennobled and majestic of all arts and voice mankind's yearning for another and a better world in terms of architecture?

It would be indeed interesting to the architects if this author were to write another article under the title: "What Should Our Church Buildings Express?"

If he thinks that an architect should express, by the details on the exterior of a church, the congregation who worships within, the architectural profession will be glad to learn what particular form of detail suggests Catholicism, Methodism, Presbyterianism, Spiritualism, or any of the many "isms" that we have to house in this country. What traditional forms has a sect which has existed for less than fifty years, such as the Christian Scientists? On the other hand, what architectural traditions has the Jewish religion, which has existed for thousands of years? Would he consider it proper to build in New York, on a limited piece of land, a New England meeting-house, which would be rendered ridiculous by the surrounding skyscrapers, in order to express to the "puzzled wayfarer" that this was the home of a New England Congregational church?

Architecturally speaking, "shingles and clapboards" might be considered "cheap and tawdry," as has been suggested by the champion of mysticism; but to regard them as "a perpetual reminder of our meanness and our hypocrisy," or of those qualities in our Puritan forefathers, seems unnecessarily severe upon the shingles, not to mention our forefathers.

"A church is a house of God, a place of His earthly habitation." True, of course, but it will be "wrought in the fashion of heavenly things, a visible type of heaven itself" only in the souls of the devout.

God may have given "Solomon the plan and the fashion of the temple," but it will be held only by those steeped in the depths of mysticism and superstition that this is true of the cathedrals of the Middle Ages. Rational, beautiful, inspiring; but not inspired. We may "bow before the rocky masses of Durham," but all are not impressed by the "mysterious caverns of Cologne."

It is difficult for a trained architect to criticize the architecture of his own period. One might be tempted to follow the lead of a distinguished church architect,\* who, in an elaborate work on "Church Building," took occasion to publish an unfortunate reproduction of the work of a brother professional, and to refer to it as "crushed and apologetic," as "modern trick of cottage walls—bad even at the best. Instead," he continued, "we have quite the reverse"; and there followed some irresistibly charming pen-and-ink drawings, made by his associate in business. These sketches, if ever built, may perhaps accomplish the artistic effect promised by both sketcher and scribe, but they do not prove anything.

It is dangerous to criticize an art when one is engaged in the practise of that art. One might be charged with criticizing a competitor for personal reasons. The architect who was reported to have said that the buildings of West Point would set American architecture back hundreds of years might be accused of this, even by those who agree with him that there is not the slightest connection between mysticism and modern gunnery.

The rationalists hold that the architect's first and foremost duty is to satisfy the practical requirements of the problem before him. If the truthful expression of these requirements does not at once seem beautiful to us on account of its novelty, then, rather than disregard those requirements out of a scrupulous respect for the past, let us leave to coming generations the task of rendering their external expression beautiful. The most beautiful buildings of the past are those which most nearly suit their requirements. Should we, in designing an automobile, follow the lines of the Roman chariot, the sedan-chair, or the stage-coach?

An architect was once asked if, in his opinion, a man who was not thoroughly inspired with the ideas of Christianity could design a church building. He replied:

"Must I be a shoemaker in order to build a shop in which shoes are to be sold?"

This remark might, at the first blush, be considered irreverent, but upon examination it will be found that it implied no disrespect to religion. The speaker merely declined to allow that there was necessarily any association between the religion of an architect and his artistic expression of the needs of any particular creed. It is within the bounds of possibility to conceive of a devout but absolutely inartistic Christian, or of a most talented artist who was absolutely irreligious.

In church architecture, as in all architecture, the first and most important considerations are the practical requirements. It is true that sometimes practical requirements, if truthfully expressed, chase away ghosts and fantoms. It is hard to conceive of a family ghost hiding in a closet that is instantly flooded with light thrown on by a switch worked by opening the door. The spirit of Christianity, however, does not hide itself away in the dark, cloistered corners, nor allow itself only to be seen in the sunbeams transmitted through painted windows, nor does it have to be aroused by the tones of the echo organ-tucked away in the vaults of our cathedrals.

Mysticism, inspired architecture, and meaningless jargon have no place with us.

"PEOPLE WHO LIVE IN GLASS HOUSES should not throw stones at their neighbors" is an adage which promises to have more than an allegorical significance. Glass houses have come, and glass bricks as building units are said to possess both a structural and hygienic value which in many cases will render them most desirable. As for "throwing stones," the watchful eye of the law will perhaps prevent any great danger in this respect, and even should the guardian of the peace take a nap long enough for some culprit to hurl a missile, it is quite possible that glass bricks will be found to withstand the shock equally as well as most other materials. Whether or not the trades representing the masons and the glaziers will conflict as to whose work it is to lay such brick, as the steel workers have done in certain parts by trying to insist that the placing of the steel reinforcing rods in the concrete was their innate right, is something which the labor organizations will adjust in their own. The main thing is that glass bricks have come into use, and that a number of interesting examples of their use is to be seen in certain European countries. Germany uses them for building purposes with no little degree of success. In Berlin is constructed a small villa, the walls of which are built of glass bricks of several shades of dark green and blue. The glass bricks are especially adapted to construction where light, cleanliness, and neatness are particularly in demand. In Hamburg they are utilized in place of windows. They admit light in walls which police regulations require to be fire-proof and windowless.

In addition to admitting light to dark hallways, rooms, etc., they are said to possess the same strength as ordinary clay bricks. They are also utilized in walls in yards and in partitions in the interior of houses, salesrooms, offices, workshops, etc., as well as for the construction of verandahs, hothouses, kiosks, bathrooms, hospitals, ice factories, butcher shops, railroad stations, breweries, stables, and in other places where cleanliness, light and uniform temperature are especially desired.

The bricks are also made with a wire coating for fire-proof walls. In some of the recently erected buildings in Milan, Italy, bricks made of glass have been adopted for ground and upper floors on account of the light obtained. They are also coming into use for partition work in some of the hospitals on account of hygienic principles.

In one of the leading banking institutions of the city of Turin the lobby office floor, which is about 36 by 58 feet, is entirely paved with glass bricks laid in iron frames for the purpose of admitting light into the basement where are located numerous private boxes or vaults.

\*Ralph Adams Cram.

## ARE BUILDING CONTRACTORS BUSINESS MEN, IF NOT, WHY?—Lack of Commercial Qualifications Detrimental to Individual and the Trade.

**B**EFORE A CONFERENCE of building contractors recently, held at Harrogate (Eng.), Mr. Jas. Townsley, for many years prominently identified with the building interests of Great Britain, gave a short paper which, while designed only to point out a condition existing in his own country, nevertheless had a more widespread application, and may, therefore, be of interest to those who are engaged in building construction in Canada. After a brief introduction, in which it was explained that the remarks were not intended as personal thrusts, but more to point out certain evils which have resulted to the trade from the lack of proper qualification on the part of many contractors, Mr. Townsley said:

Acting in a secretarial capacity to several trade organizations, and from a varied experience gained over a period of thirty or more years in the building up of a business, I have had ample opportunity for study and the acquiring of knowledge in the particular subject I have chosen to speak upon. Careful observation has led me to form opinions from time to time on the business habits of those who have elected to set up in trade as building contractors. We all know with what ease men set up in this calling, and how many of them do not possess even an elementary knowledge of business. I speak but generally when I say that most of our contractors are men whose only qualification is a practical knowledge of the trade, which, though useful in its way, is by no means the only essential necessary. Business to-day, as in all times—is a serious engagement, as distinguished from trivial transactions. Its healthy pursuit requires skill, thought, industry, arrangement, calculation, prudence, punctuality, perseverance, etc. The difference in men and their success may be attributed, in a measure, to the difference in their business habits. In fact, a large capital and excellent opportunities without them, I think you will agree, will only provoke greater disaster, and a more widespread ruin. Business therefore is a study, and he who would avoid the many pitfalls to which a business man is subject, must of necessity give his mind seriously to mastering the principles of commercial life. I do not say that before he can succeed he must be proficient in such knowledge, but I do say that the man who really desires to succeed will studiously seek to acquire such a grasp of the laws governing business practice, that he can at all times readily discriminate, arrive at fair conclusions, and act accordingly. But to-day we have to deplore an absence of such qualifications. If we select indiscriminately 100 firms to-day in business as building contractors, we shall find on analysis that a decided majority of them, judged from the standard I am setting up, are altogether unfitted for business. They are incapable of making up a tender—they lack knowledge of even ordinary bookkeeping—of finance and its careful and economic manipulation, they have no idea,—to indite a decent letter is impossible to them—to judge the fairness of an agreement submitted to them is beyond their capacity, and in matters of a minor character they are terribly negligent and incompetent. In taking on a contract, this class of man has very little regard for the value of money so long as he secures the work. Stress of competition compels him to accept a low-priced schedule, including a bare margin of profit, and this he will often sacrifice by his willingness to give extended credit, or by submitting to unfair conditions.

Another phase of a building contractor's business life which tends to destroy his chances of success, is the habit of speaking disparagingly of a competitor. He fails to see that he is revealing a strong trait in his own nature for unfairness. Have we not all met with such men, who

because they have suffered disappointment, at once abuse a competitor, and seek to poison the mind of another against him. We are impressed with these men, but certainly not for good, and our opinion of this class of person is that the less confidentially we treat them, the better will it be for ourselves. A wise business man will rarely, if ever, refer to an opponent, except in complimentary terms. A good business training will teach a man the unwisdom of taking on more work than he can conveniently manage, putting all his eggs into one basket, as it were, a truism with which we all agree, yet how often do we find this kind of procedure obtaining amongst those who lack a knowledge of business principles? I have known many men in my own time, who with limited capital have commenced on their own account, and who have felt flattered at receiving the support of some firm likely to give them considerable help. They have accepted order after order, and ultimately discovered that they have been serving an impecunious firm, and thereby lost the major portion of their capital, if not the whole.

Another point which must have forced itself upon us all at one time or another, is the silly practice of those who claim to be practical men, of taking work by contract, and because they work themselves—make no allowance for the cost of the labor. Of course, business conducted on these lines cannot hope to succeed, yet it serves to harass the bona fide firm, and to destroy the prospects of remunerative trading. By this and other stupid methods of doing business, we see how unfitted is the man who attempts to conduct a business without a reasonable knowledge of what is required of him. So far, my observations have been directed mainly against the small man who, without suitable training, enters upon an enterprise with a knowledge most vague, but I would not judge him necessarily by the extent of his business, for a man may be very big from a point of turnover and yet be devoid of business qualifications.

The empire of Rome fell because it did not deserve to live, and so many firms have brought about their own ruin by neglecting to observe those rules and regulations which common prudence dictates. It may be argued that those firms which to-day stand in the front rank of this particular trade had a small beginning and yet have succeeded. True, but if we could only get back to their inception, I think we should find that underlying their success was not a depraved, inconsiderate reasoning, but a stability of character, backed by integrity and justice, which in themselves deserves success, and invariably secure it.

Turning again to our text, and judging it from a federation point of view, the utter lack of business acumen amongst associated members and non-members alike is amazing. If a man means well, and is determined to go straight, what objection can he have to federation? By ignoring its principles can he hope to improve the trade he represents, or secure better prices for his goods or his work? Certainly not, neither can he secure from his oppressors those fair conditions of trading to which all men are entitled. To fail to give support to any honest effort, directed to the improvement of trading conditions is, to my thinking, a serious misdemeanour, and unworthy of any man not exclusively engrossed in selfish pursuits. The law of federation places upon each of its members a responsibility in regard to the rights of others, and who will deny that others have rights equally with ourselves, and if this be so, why should we ignore the claims of federation, unless we secretly and selfishly desire to secure those rights and apply them to our own use. The business man who ignores his competitors, and treats them, as too often he does, with contempt and derision, contributes in no small degree to present embarrassment—inconvenience—and ultimate difficulty.

In conclusion, I might ask why should the building

trade be so denuded of business men? The reason, I think, is not far to seek. Much of the building trade is simplicity itself, and can be undertaken by any ordinarily intelligent person—that is, so far as its technique is concerned. An operative bricklayer requires very little plant to enable him to start out as a jobbing bricklayer and if he survives the initial stage of his business career he will soon attempt contracting in a small way and thus he continues on his course, gaining knowledge by his experience, which is useful in itself, but, judging from results, he very often neglects to improve his mind in commercial knowledge, hence my contention that the average person engaged in the building trade is seriously lacking in those attributes which make the business man. The same might be said of almost each branch of the building trade. This fact induces many illiterate operatives to make a venture, which not infrequently becomes a real struggle for existence, and before they can realize their position they are so involved that failure is inevitable.

Many other reasons might be assigned for the dearth of business men in our ranks, reasons which will occur

tention to any commands of a customer—just as they would to a telephone call—having made a promise or undertaken a duty, see that it is carried out—no matter at what cost of displeasure or inconvenience—reply promptly to all communications, and where an urgent answer is needed spend the amount required in telegraphing, or send a special messenger—never repeat what a friend discloses in confidence—learn to judge without prompting what is impartable information and what should be treated with discretion—study to be fair-minded to all parties, and avoid exacting the last shilling from a customer—just try to serve other people, as we should like them to serve us.

## TA CHING GOVERNMENT BANK.

*THE TA CHING GOVERNMENT BANK* (illustrated on this page) at the corner of Szechuon and Hankow roads, Shanghai, has been erected from the designs of Messrs. Atkinson & Dallas, of 4 Peking road, Shanghai. The building is four stories in height, with attics above, built of red brick, and having Ningpo stone dress-



Ta Ching Government Bank, Shanghai, China. A recent example of Western World architecture in the Orient. Atkinson & Dallas, Shanghai, Architects.

to most thinking people, therefore I need not introduce them here. Thus my views on the question are but briefly stated, and it may be thought that I have overlooked those firms who do conduct their business on sound business lines and with great acceptance to all who trade with them. That such firms do exist goes without saying, but they are few and far between compared with the vast numbers who pose as business men, when, as a matter of fact, they are but one step removed from the operative. To disparage the humble effort to succeed is not my purpose. I merely seek to answer a question and to give my reasons for the conclusions arrived at. If on the other hand it is expected of me to suggest by what means those engaged in the building trades might, the better qualify for the higher standard of excellence to which I refer, I would urge them to avail themselves of every opportunity to extend their knowledge and improve their powers of observation by constant comparison with the methods of good business men and the study of suitable books—to give prompt at-

ings and facings at parts as shown, and treated in a free treatment of the English Renaissance style. The principal entrance to the banking hall in the Hankow road is of an ornate character in stone, and has a wrought iron gate with grill above, opening into a spacious vestibule. This feature in the elevation, which is slightly projected at this point from the general building line, is carried up as a tower, which rises to a height of 110 feet above the ground level. Where this tower rises beyond the roof it is carried up square, with similar features on all four faces, while the upper part breaks off into a circular shape, and is surmounted by a copper-covered dome. The corner at Hankow and Szechuen roads is rounded off to an octagonal shape, and finished off with a low circular dome, also covered with copper. The lower story is divided into horizontal bands by strongly-marked joints, and a stone cornice projected at the floor level to form a balcony to the first floor windows, with wrought iron enclosures. The roof is covered with corrugated galvanized sheet iron.

## CEMENT THE REMEDY FOR NATION'S FIRE LOSSES.—Appalling Figures of Annual Devastation in the United States.—By Richard L. Humphrey.

**I**N its mad rush toward a prosperity unparalleled in the history of civilization this nation has permitted abuses which are as startling to the outside world as has been our advancement. Our priceless heritage of natural resources has been squandered with a prodigality that threatens the exhaustion of many of them before the end of another century. The most serious is the depletion of our magnificent forests which have been slashed and cut with such a ruthless hand that unless drastic measures are at once taken to save what remains and strive to replace what is already destroyed by the replanting of trees, our supply, according to the opinion of the Federal forest service, will be exhausted in thirty-five years.

The greatest waste of timber is caused by fires, and the record of the United States is the most shameful of all the world.

In 1907 the property destroyed by fire amounted to the enormous total of \$215,000,000, a per capita loss of \$2.51. Of this loss, \$146,000,000 was in frame buildings and but \$68,000,000 in brick and stone. This terrible waste is not equalled by any other nation.

Our per capita is nearly eight times that of Europe, which is reported by the National Board of Fire Underwriters as but thirty-three cents for six leading countries. Under similar conditions the fire loss in this country for 1907 would have been but \$27,000,000 and \$187,000,000 would have been saved. Nor is this all. The United States has the finest and most efficient fire fighting apparatus and private fire protection system in the world. Eliminating the loss through property destroyed in fires, the cost of fire protection for 1907, amounted to \$241,401,442. There was paid to insurance companies in excess of what they returned as losses, \$145,000,000; the fire departments cost fully \$50,000,000 and private protection systems \$18,000,000. Altogether the total cost of fires in the United States during 1907 amounted to \$456,486,151, or \$5.34 per capita, or nearly one-half the cost of new building construction for the same year, estimated at one billion dollars.

Confronted by such startling figures, we naturally look for the cause, and it is easy to find. This country is filled with buildings so faultily and flimsily constructed that they are a constant menace.

In our large cities are thousands of firetraps, and one of which may at any time cause a conflagration, that will wipe out millions of dollars' worth of property and destroy the lives of many people. Our villages and hamlets are for the most part a collection of firetraps. In many instances our theaters and assemblage halls are on the upper floors of frame buildings. It is a crime against humanity to permit public assemblages above the first floor in any building that is not fireproof.

It is a crime to have a public meeting place in any building that is not fireproof. The sooner the authorities are brought to such a realization of this as will lead to the adoption of adequate laws and their rigid enforcement, the sooner will these terrible holocausts cease. The people of Cleveland have had one fearful lesson in the past year in the burning of the Collinwood school house in which the lives of more than 150 little children were lost. While this may be charged up to bad construction, those responsible for the conditions which permit such structures to exist and to be occupied for such purposes should be criminally liable. One year ago another frightful object lesson was afforded in the fire which destroyed the Boyertown, Pa., opera house and resulted in the death of nearly 200 women and children who were unable to escape.

Instead of profiting by these awful experiences, as would naturally be supposed, the country, after the horror of the disaster has ceased to attract attention, lapses into an indifference which can only be removed by another similar disaster. Scattered all over this country are Collinwood school houses and Boyertown opera houses, and these disasters will recur until these buildings are removed and our methods of construction are changed. In 1906, according to the census authorities, more than 5,000 persons died from burns in this country.

Deplorable as is the needless and criminal loss of life in fires there is another phase of the question that is most serious—the enormous drain on our natural resources resulting from the annual destruction of millions of dollars' worth of property by fire, which is not possible under European standards. Last April, a conflagration at Chelsea, Mass., resulting in an insurance loss of more than eight million dollars. Such conflagrations are possible in practically every big city in the country. The fire marshal of Ohio, Mr. D. S. Creamer, states in his annual report for 1907 that a conflagration costing three hundred million dollars is entirely possible at any time in this city of Cleveland and in your sister city of Cincinnati.

These conditions are often attributed to a desire on the part of property owners to erect their buildings as cheaply as possible in order to obtain the highest return from their investment. While this may be true in some cases, I think the real reason is that we have not as yet outgrown our primitive conditions which necessarily prevail in newly settled countries. Proper, conservative and safe building laws are the result of years of experience, and that is why Europe shows up to such advantage when compared to this country.

While our building knowledge has hardly developed into a science, we are learning rapidly the methods and materials necessary to secure the safety desired. The American people are not slow in adopting improvements when once their value is established. In the last few years we have made wonderful strides toward better construction, under the helpful guidance of the United States government. For many years the Federal officials have realized the seriousness of these conditions and the utter lack of knowledge concerning the properties of building materials. With the government spending \$40,000,000 annually in the construction of public works, it was found necessary to inaugurate an elaborate series of experiments in order that the money could be expended wisely, for the government does not insure its buildings, but rather strives to make them fireproof.

The task of finding out the best materials for such structures was assigned several years ago to the Technologic branch of the United States Geological Survey, under the direction of Dr. Joseph A. Holmes, expert in charge. These experiments have continued up to the present time and although they have been conducted primarily in behalf of the government, the results have been given freely to builders, engineers, architects and the public generally.

In the revision of the building laws of the country, the progress has been extremely slow for the reason that a certain inertia must be overcome in removing the prejudice against changing existing laws. The influence of various interests opposed to this revision for commercial reasons has been another factor in preventing the adoption of better laws. Adequate laws are the first essential in bringing about the conditions that will prevent the big annual fire losses. Laws must be enacted that will not only regulate new construction, but that will invest in the building authorities the right to condemn structures whose very existence is a menace to public safety.

This is especially true in great cities like New York where the presence of innumerable firetraps is a constant danger, which unless eliminated may some day result in



a conflagration that will sweep the city. Laws, no matter how perfect they may be, can be of no real value unless they are rigidly enforced. Many existing laws if enforced would prevent the erection of many dangerous structures.

The most potent influence in the attainment of buildings in which public safety is properly cared for, lies with the people. If everyone could be brought to a full realization of the dangers due to faulty construction, they would soon bring about a reform in methods that would result in permanent progress. It is the duty of the people to demand buildings of the highest fire-resistive type in which to live and work, in which their children may go to school, in which the sick and helpless may be cared for and in which the people may be amused. If the public would refuse to make use of a building known to be a firetrap, they would apply an effective remedy.

## NEW YORK THE MECCA OF THE MONTREAL BUILDERS.

*THE ANNUAL OUTING* of the Montreal Builders' Exchange this year took the form of a most delightful jaunt to the American metropolis, where the many contractors and material men comprising the party who availed themselves of the opportunity thus offered for a respite from the cares and worries of business routine, had a most enjoyable and interesting time. That the party made the most of their trip is quite evident from the entertaining description of the journey and the places of interest visited while in New York, furnished by Mr. Lourer, secretary of the Exchange, which is as follows:

The annual "Labor Day" excursion of the Montreal Builders' Exchange has become one of the recognized social features of that progressive institution, and proved more popular than ever during the trip just concluded. In fact, "Labor Day" has gradually lengthened out to a fortnight's outing, and every year the interest taken by the members is evident by increasing numbers.

The movement was inaugurated four years ago, and commenced by chartering a steamer of the R. & O. Navigation Co. for a sail to Quebec and Ste. Anne de Beaupre. Since then pilgrimages have extended successively in the following years to Toronto, Niagara and Buffalo; to Boston and surrounding beaches; and finally, during the present September, to New York, when about 200 members and friends entrained by special Pullmans over the Rutland route to Albany, N.Y., and thence by the splendid palace steamer "Hendrik Hudson" down the "American Rhine," meals on board being included in the round trip. New York was reached Saturday night, 4th September, and a printed itinerary prepared by the secretary giving list of theatres, hotels and principal places of interest to visit, was supplied to each traveller.

Arrangements were made for automobile sight-seeing trips through the upper residential district and parks, the lower business section, and Chinatown. One of the centres of interest was naturally the Builders' Exchange on West 33rd street, where the builders combine club and business features, occupying two entire floors of 12,000 sq. ft. each. Here the Montreal delegation was most hospitably received and entertained by Mr. Ross W. Tucker, president of the board of governors, and an interesting visit paid to the exhibit department, conducted along similar lines to that now inaugurated by the Montreal Exchange in the new Eastern Townships Bank Building.

To builders, the monumental hotels and office buildings presented attractive features; and among the latter visited were the famous Singer and Metropolitan buildings; the City Investment Building, with its \$400,000 lobby; and the Hudson terminal building, the largest office building in the world, covering two entire blocks, and having below ground an immense shopping arena,

where everything from buttons to automobiles can be purchased, besides the terminals and freight departments in the depths of the earth. Here several members were entertained by the "Machinery Club," where all persons interested in machinery congregate in their splendid quarters on the top flat (24 stories up), for which they pay the modest annual rental of \$40,000!!

The great terminal stations now in course of erection—the Pennsylvania and Grand Central—were also visited, and on account of their colossal proportions, some facts and figures may not be out of place here:

"The new station of the Pennsylvania Railroad Company, in New York City, representing the nucleus of an investment of \$90,000,000 in improvements, will be ready for the public on December 1. The station, which was begun in 1902, occupies four blocks of ground, and through it run two tunnels which start in New Jersey, pass under the Hudson River, through Manhattan, under the East River, and come out on Long Island. It is said to be the most perfect passenger terminal in the world."

We notice finally the great works connected with rebuilding of the Grand Central Terminal, including the complete rearrangement of the tracks and the erection of the new station during continuance of regular traffic; the following statistics will give an idea of what changes will accomplish:

Total area of the old terminal, 23 acres.

Total area of new terminal, 64 acres.

The new terminal will provide 39 tracks on the upper or express level, and 15 tracks on the lower or local level, assuring ample means for handling the increased traffic for many years to come.

The present station building, which was erected in 1871 and enlarged in 1898 and 1900, will be entirely removed, making way for a structure of very much larger dimensions.

The new station at the street level will be 600 feet long, 300 feet wide and 105 feet high. Below the street level it will be 745 feet long, 480 feet wide and 45 feet deep.

All trains using the Grand Central Terminal are operated by electricity, the use of steam locomotives having been entirely discontinued.

The new terminal will be the best in point of construction in all the details of arrangement that money and engineering skill can provide.

With this brief notice of a most interesting and instructive outing, we must reluctantly draw to a close. On the 14th inst. the last stragglers of the Montreal battalion reported for "home duty," just in time to welcome their own back-to-Montreal homecomers. It proved the most successful of the four annual trips organized by the Builders' Exchange of Montreal, and again demonstrated the value as a "business asset" to all our members of getting to know each other better socially; and to realize that even successful competitors are not enemies to be avoided, but precisely those whose ability and good qualities are best discovered by friendly and genial intercourse.

*AN AMUSING TYPOGRAPHICAL* error appears in the advertisement of a well known cement stone company, in the annual publication of a western association of architects. This company bases some of its claims for approval on the non-staining properties of its stone, but the printer evidently not only disagrees with them on that point, but condemns them on one far more important, for the advertisement begins with "A manufactured non-sustaining cement stone." This is surely a "solar plexus" which neither the advertiser or the architects in issuing their year book, had anticipated. However, as the stone in question is being used extensively by the architects in that particular section of the Dominion, there is no real danger of the advertisement seriously affecting the interests of the manufacturers.

## SECOND ANNUAL ASSEMBLY OF THE R.A.I.C.—Continued from Page 56.

Institution that he should retain the office, that his resignation should not be accepted. The President replied that he was in the hands of the Institute, and that, if it was their desire to have him retain the office, he would be pleased to do so, and, while thanking them very much for their vote, he still had his same views on the subject.

The question of federation was then opened by Mr. Gordon, who moved that Clause 1 of Project "A," should read as follows:—

1.—*The Conference recognized the Royal Architectural Institute of Canada as a representative Canadian body.*

2.—*The Institute is of the opinion that the Architects of each Province should be recognized in a Provincial Association, and that in each Province where there is no Provincial Association, the members in the Institute, leaving any such Provinces, be urged to take steps towards the formation of such an Association.*

3.—*The candidates for election to the Institute, living in a Province where there is a Provincial Association of Architects, should, before being admitted to the Institute, become members of the Provincial Association, and that Clauses 3, 4 and 5 of the Project, be eliminated.*

This motion was seconded by Mr. Watts, and was carried.

Mr. Chausse then proposed a vote of thanks to the Ontario Association and to the various organizations and individuals that had been instrumental in making the Assembly a success. The proposition was carried by acclamation, and special thanks were accorded to Mr. Gordon and Mr. Hynes and the Toronto Architects' Club, for their co-operation.

Mr. Wickson made a motion expressing the appreciation of the Institute for the work done by the present members of Council, and Officers of the Institute, Mr. Watts and Mr. Chausse, who had performed a great deal of work in the interests of the organization during the past year.

A special vote of thanks was moved by the President for the vast amount of detail work done by Mr. Chausse. We might just note here that the Institute is exceedingly fortunate in having a man of the ability and energy of Mr. Chausse, as its Secretary. It would be exceedingly hard to find a man so capable, who would give up so much of his time to an undertaking which carries with it practically no remuneration, and it would be impossible to find a man who is better capable of taking care of the many details, in the manner that Mr. Chausse has. He has had a vast amount of correspondence to do, and a lot of times of apparently discouraging organization work to handle.

Prof. Nobbs of McGill University, Montreal, gave an interesting talk in connection with twenty slides of representative Canadian buildings, that were thrown on the canvas. The descriptions and criticisms were entertaining, as well as being highly instructive.

### Annual Banquet

The Annual Banquet of the Institute, which was held at the National Club, on Wednesday evening, was, to say the least, a most enjoyable one, and the various members and guests present seemed to fall in with the jovial spirit of the evening. President Dunlop occupied the chair.

The first Toast was that of "the Royal Institute of British Architects," responded to by Mr. F. S. Baker, Toronto. On behalf of the Royal Institute of British Architects, he wished to thank the Institute for the very cordial manner in which they had received the toast. He referred to the alliance that had taken place between the

Royal Institute of British Architects, and the Royal Architectural Institute of Architects, since the last meeting in Ottawa, and, while he stated in Ottawa last year, that he believed the alliance might be brought about, he did not have any idea that it could have been accomplished within so short a time, and it was a matter of great gratification to the Royal Institute of British Architects, that this relationship has been consummated.

The next Toast was to "The Quebec Association of Architects," which was replied to by Mr. Monette, by singing the song "O Canada, Mon Pays et Mes Amours." The song was highly applauded, after which the President submitted the Toast "The Ontario Association of Architects," which was replied to by Mr. Gouinlock, President of the O. A. A.

Mr. Gouinlock, stated that they had been delighted to have had the honor shown his association by having the annual conference of the Institute in Toronto. The Ontario Association was doing its best to elevate the standard of architectural education. The O. A. A. was respected throughout the Province, and he believed that they were gaining ground in many ways, in view of the fact that they were receiving applications for admission this year, from men who had hitherto stood aloof for a number of years. Speaking on the question of the federation of the various Provincial Associations with the Royal Architectural Institute of Canada, he stated that it would be a very excellent thing, if conducted on proper lines. He believed that, if architects were going to make a success of the profession, and educate the public to their aims, they could only do so by united effort in the direction of giving better facilities for the education of students.

He referred to the architectural exhibit at the Toronto Exhibition, recently, and stated that it carried with it a national importance as far as the profession was concerned. All the architectural associations throughout the Dominion has assisted in making the exhibit worthy of the profession. Although it had been conducted under the auspices of the O. A. A., there were 34 or 35 exhibits from Toronto, Winnipeg and Montreal. This was the first opportunity the profession had been given to make a national exhibit and demonstrate the national character of the profession. Marked interest was shown in the exhibits, the room being thronged all the time, by people who were manifestly interested in what they saw there displayed.

He wished to appeal to the Institute for their support and interest, in order that they might widen the scope of the exhibit next year, by making it not merely a national, but international affair, through securing loan exhibits from the principal countries of Europe. The manager of the exhibition was going abroad shortly, and, if the Ontario Association had the support of not only the different provincial associations, but also of the Royal Institute of Canada, in having Manager Orr take with him letters of introduction from the president of the Royal Institute, and from the presidents of the Provincial Associations; to architectural bodies abroad, it would very appreciably help him to obtain a very representative loan from England, France and other countries.

The next toast proposed by the President, "The Health and Prosperity of the Manitoba Association of Architects," was received with considerable applause. The President referred to his recent trip to the Coast, and spoke in glowing terms of his visit to Winnipeg. He could not say too much for the enthusiastic, generally cordial reception he received at the hands of the Manitoba Association of Architects. He knew that this Association had the interests of the Institute at heart, in so far as they would not have received him as president of the R.A.I.C. as they had.

In response, Mr. Greenfield expressed his appreciation, on behalf of his Association, at the decision of the Insti-

tute to hold their Third Annual Assembly at Winnipeg. He was sure they would not be sorry that they had so decided, and that the Institute would be given a good, true Western welcome. He spoke of the growth of Winnipeg and the West, and, although he was an old Toronto boy, he now considered himself a Westerner. He expressed the sympathy of the Manitoba Association, with the objects and aims of the R.A.I.C. Canada was a country of great possibilities. It was bringing up a nation of young men, every one of whom had a determination that Canada should advance, and as Canada advanced, so would the architectural profession advance. The standard of architecture had been materially raised during the past two decades, and the profession now looked upon the young men to carry it up to a still higher standard. It was, therefore, the paramount duty of architectural organizations, to see that these young men secured a proper training. Architecture depended upon education; education depended upon character; and, if architects would throw into their work that character of moral, physical and mental ability that is theirs, he was sure there would rise up in Canada many monuments to their skill that would be to the credit, not only of the Dominion, but a credit to the whole world.

The next toast proposed by the President was that of "The Toronto Society of Architects," which was responded to by Mr. Lyle, who touched briefly upon the status of the architect and architectural education as conducted by the Toronto University. He did not believe that the architectural profession had, in the past, received the proper consideration and appreciation from the lay public, and he maintained that one of the important duties of the Institute was to, by some means or other, promote a lay interest in architecture. He believed that the Institute could generate such a current of opinion as would force the public to give better opportunities for the education of architectural students in the universities. McGill University, Montreal, had a very good course of architectural education, but the facilities provided for architectural education in Toronto University were a joke. It was not the fault of Mr. Wright, who had done everything in his power to improve this department, but had, unfortunately, been unsuccessful. He was of the opinion that the University authorities were shortcoming in their duty. Parents were of the opinion that, when they sent their children to this school of learning, proper facilities were provided to educate them, which, as far as architecture was concerned, was not a fact. He referred to some disputes and disagreements between the Ontario Association of Architects and the Toronto Association, and believed that the hatchet should be buried, and that the members of both organizations should get together and formulate some definite policy to lay before the University authorities. He also referred to the fact that some of our cities have inadequate building by-laws which were very loosely enforced. He believed that this was another subject for the association to take up.

Mr. Burke referred to an instance that came before his notice, of a young man from Newfoundland, who came to the city of Toronto, with a liberal education, and wanted to find some school wherein he could receive an architectural education. He tried the Architectural School in Toronto, but found that the course of training was so limited that he could make no progress, and had, eventually, to take a position in an architect's office. Mr. Burke thought this was a most unfortunate condition of affairs, and then proposed the toast "Our Guests," which was replied to by Mr. Berry on behalf of the Engineers' Club.

Mr. Berry stated that, owing to the numerous duties that an architect was obliged to perform in relation to the practice of his profession, he was unable to give sufficient attention to the engineering branch of building con-

struction. He believed that, as in England, architects should call into consultation with them, engineers, on such work as designing of structural steel and reinforced concrete. He believed that the engineer would more than save his fees through the economies he would effect in the building. He hoped that his remarks would be received in the spirit in which they were offered, and believed that if there was a closer union between architects and engineers, it would be a great advantage to both.

The next toast, "Architectural Education," was proposed by Mr. Monette, and replied to by Mr. Hynes of Toronto. Mr. Hynes referred to the efforts that had been made by the Toronto Society of Architects, and the Ontario Association of Architects, to induce the Toronto University to provide better facilities for education. He believed that legislation should come first, education second, and registration third, but in his opinion things in Ontario had gotten reversed. However, to secure the desired end, as far as education was concerned, it required the united effort of the architects of the province of Ontario and the University Board and he hoped that the present meeting might bring about this result.

The following other toasts were then proposed: "The Press," "Our President," and "Our Secretary," all of which were responded to briefly.

## CONCRETE WORK IN CHINA.

*WHILE ON THIS CONTINENT* and in European countries concrete is regarded as being the most recently accepted method of constructing houses and walls, at Swatow, a seaport town in China, it has long been a recognized industry. Work of this character was first instituted there several hundred years ago, and the absence of any buildings or walls constructed of bricks or other materials is conclusive proof of its stability and lasting qualities. The industry originated with a French priest, who constructed one of his chapels of this material.

In a late report, U.S. Consul Pontius gives the following interesting description of the nature of the concrete and the method of construction employed:

Very small pebbles or shale, sand, and lime are the ingredients of which the material is made. The mixture, after being thoroughly incorporated, is slightly moistened, and then pounded in a rough wooden mold which is elevated in a runway supported by firmly set poles, and in spite of the crude methods employed, a height of 60 feet can be easily reached. When the walls have been constructed, all supports are removed and the concrete is for some days exposed to the air. To this exposure is its characteristic solidity solely attributed. The walls vary from 12 to 16 inches in thickness, and the cost of construction is considerably less than brickwork. The thickness of the walls give absolute guaranty of fireproof qualities. Storehouses and buildings constructed of this material many years ago are conclusive proof of its strength and durability. No single instance has been known of the accidental collapsing of such concrete-built walls.

In some instances split bamboo poles have been used to reinforce the material, the wood preventing cracks from appearing and adding to the strength. Bamboo imbedded in the concrete in this manner does not rot, and it seems odd that the practice is not more general. Steel or iron reinforcing, owing to the added expense, is never used.

# LIVING ROOMS, LIBRARIES AND BOOK ROOMS.—Interiors Which Should Reflect Best Efforts of Architect and Decorator.—Modern Tendency to Combine Sitting Room with Library.—Woodwork, Color Scheme and Appointments.—Essentials to be Considered. ∴ ∴

IT would seem hardly necessary to make a distinction between libraries and book-rooms, for a real library is always a book-room, but of late the word "library" has lost its original significance, and is often used interchangeably with living-room. The average house does not contain sufficient space for a book-room pure and simple, and the tendency has been to combine the sitting-room with the library, a plan which has both advantages and disadvantages. There is an undoubted charm to the well-appointed living-room with its books and pictures and comfortable furniture, and if it does not have to serve as a reception-room, it meets the usual requirements very well. It is often the largest room in the house, and has grown to be an expected feature of the modern house. The shrinkage in the hall in the modern ground floor plan is largely due to the increased size of the living-room. It is in this big room that not infrequently the architect does his best work.

If the decorator is equally successful the color scheme is quiet and restful, and the room is probably the most attractive of the house; but it cannot be called a book-room, and "library" is usually misapplied. If the room has but a few books, say low, built-in cases on either side of the fireplace, the word library is inappropriate, and it is better to use the term living-room. Where bookcases extend around the entire wall and the atmosphere is one of books, "library" might be used, although in the average house this room will also be the living-room.

Whether the room has few or many volumes it has several distinctive features, and as it is the part of the home used most by the family it is worthy of the decorator's best efforts. In the well-designed house the architect has given every assistance to the decorator, and if the latter does not err, the room cannot fail to be attractive, unless it is marred by the unfortunate final touches, which many householders consider necessary. There is really very little to do to the living-room, for the architect has done so much. The well-designed trim, usually in the form of a high wainscot, the generous fireplace, often extending to the ceiling, and the built-in bookcases occupy most of the wall space. There is little space to be decorated, and the simpler this little is treated the better.

Where the trim is oak, the ceiling beamed, and the fireplace of brick, sand-finished plaster furnishes a satisfactory wall treatment. It suits the living-room as the more dainty wall coverings do the drawing-room, and provides a consistent background for the simple, sturdy furniture necessary in a room used as a library. Such a wall treatment makes superfluous many pictures. In fact the room is better for their absence unless they are few in number and carefully selected. Pictures and prints suit well the atmosphere of this room, but no matter what the wall decoration they should be made of secondary importance to the books. If there are many prints, a plain paper or textile makes a better background than plaster, which, by reason of a certain largeness and simplicity, is ill-suited to many pictures. It is a decoration in itself with its lights and shadows, and shows to best advantage when seen in large, unbroken masses. Whether stained or left in its natural color, it has great claims to consideration, particularly in a half-timbered house. Unstained plaster, if there is a good deal of oak woodwork in the room, gives splendid results. Many people find it colorless, but this is because they do not see color except in strong tones. They are not gifted with an eye for

color, and have not been trained to look for it. To such as these, plaster, unless stained green or some other decided tone, has little attraction. Green plaster, if not too intense, is an attractive wall finish, so are the lighter browns and some yellows. It is impossible to "do over" plaster unless you cover it over, and the advice of one architect is to try your stain first in a closet or cupboard where a mistake will not prove fatal.

Before deciding the wall treatment for any room the amount of light must be taken into consideration, and this condition will be governed by the exposures, the number and size of the windows, and by the proximity of other buildings. If the house is in the country there will be other considerations. Sometimes the living-room is shaded by trees, sometimes by a piazza, both of which make a great difference in the amount of light.

In rooms with windows facing south and east cool greens, blues, browns if not too golden, mauves if they contain a good deal of blue, and most of the grays can be used. Mauve is a color little favored in decoration on this side of the water. We would not recommend it with stained oak, but used as English decorators employ it, with ivory paint and certain shades of green, it is very effective. In rooms having only eastern exposures cool colors should again be used, but they would better be a shade lighter than when chosen for south-east rooms, as east rooms are comparatively dark in the afternoon.

North-east rooms are attractive in warm but not intense tones. Terra-cotta, not too deep, light golden brown, tans, greens if they contain yellow, and warm grays are attractive here. The difference between the apparent light of a room hung in blue-green and one in yellow-green is marked. North rooms are brightened by buff, yellow, orange, by red if of an orange cast, also by light yellow, green, and warm gray. Green for a north room should be one-third yellow. Red should never be used for it absorbs light, nor should it be selected for a small room, no matter what exposure, for it contracts. Mauve has this latter quality though in less degree. A certain portly English queen, Anne, we believe, wore deep crimson on state occasions because it made her look smaller. The average house needs expansion rather than contraction, but an occasional room is helped by warm, deep brown, claret, mulberry, Venetian red, or old-fashioned crimson, but it must be chosen by "one who knows," otherwise the walls will be unduly prominent and proclaim themselves in no gentle manner.

Sometimes a crimson textile the color of old vestments is used with telling effect, but only when a background is needed for old Italian walnut furniture, or for rare Chinese teak, or for something else equally unusual. Where fine old furniture has to be taken into consideration, the woodwork is often especially designed for it and the conditions are not those of the average room. Crimson makes a beautiful background not only for furniture of certain types, but for the faded gold of old Florentine frames, and for gilt sconces and brass lamps. A dark room could not take this color unless it was artificially lighted.

North-west rooms receive steady light from the north all day, and a strong light from the west in the afternoon. The colors should be warm but not bright, else the room will seem garish at a time when it is most used. West rooms are comparatively dark in the morning, and well lighted in the afternoon. A morning-room facing west needs quite a different treatment from a living-room

facing west. What would make one cheerful and cozy would cause the other to be too bright. If a living-room with a western exposure is shaded by a piazza it can take a fairly warm tone, for nothing so successfully cuts off the sun as a piazza, a fact which has practically doomed the long veranda.

Color treatment in relation to the amount of light received in a room is a broad subject, and all such suggestions must be general, unless specific rooms are under discussion. Broadly speaking, rooms finished in dark wood need stronger tones than rooms where white paint or light woods are used, but there are many exceptions, notably the combination of unstained plaster with dark oak. A beautiful living-room is recalled where the trim is Circassian and the furniture old Italian walnut. On the walls is an oil stain of warm ivory color. Old-rose curtains, and rugs in which old-rose is the principal color form the only strong color-notes. It is a most successful room, but the color scheme could not be imitated with success unless the conditions were similar.

In a colonial living-room an old landscape paper is sometimes very effective, particularly if the bookcases are low, and the paper is regarded as a decoration in itself and not made a background for pictures. Some of these old papers are in two tones of gray, others are more brilliant and require plain curtains and comparative plain rugs. The rugs for a library are usually deeper in coloring than those selected for a drawing-room, for the whole scheme of color is in a lower key. A rug lighter than the walls will throw a room out of scale, and it is well to remember the old rule that the floor should be darker than the walls, and the walls darker than the ceiling.

In a room where the trim is white the built-in bookcases should be of white also. Detached cases of mahogany are harmonious in a library done in colonial style. Sometimes a high, old-fashioned bookcase of mahogany is most effective in a room where the built-in cases are painted white. Placed between two windows, or where it will balance a door, it usually helps the proportions of the room. When finished with traceried glass it forms a fitting storing-place for books with fine bindings. Such a piece of furniture is particularly useful where there are rare books, for most built-in bookcases are without glass doors. If there are many books, and the locality is a dusty one, glass is necessary for protection, although the charm of the open shelf admits of no dispute. There is something very intimate and personal about shelves filled with volumes in reach of every member of the family, but the bindings often suffer from dust, heat, and dampness, particularly from heat, which is one of the great enemies of bookdom.

#### SECTIONAL BOOKCASES.

Where a library is constantly growing, sectional cases have many desirable features, and there is no question of the protection that this type of bookcase gives. Great improvements have been made in sectional designs, and it is now possible to buy bookcases which conform to all styles of interior trims. The old criticism that they were unnecessarily deep and consequently took up a great deal of room does not hold good, for the improved type is of admirable proportions. They are also recommended on the ground of economy and durability.

The low, built-in bookcase has been a great fad in this country, but its popularity is now diminishing. A scheme growing in favor is to sink the shelves in the walls, and, if the room is paneled, to place them in such a way as to add to architectural value. Frequently when a real book-room is desired the shelves are built flush with the walls, and if the books are not of sufficient number to line the room the additional space is paneled. Sometimes these panels are made with doors which can be removed at any time as additional shelves are needed.

Rooms of this character have a dignity which it is not possible for the living-room-library to achieve, and while doubtless more costly in the beginning on account of the paneling, the extra cost, if space permits, would well be justified. In a living-room, the space on each side of the fireplace could be filled with shelves built flush with the walls, or one end of the room could be thus treated, and if the shelves balanced a fireplace or a group of windows, an additional beauty would be gained for the room. Architects delight in planning such schemes, and would doubtless be glad to depart oftener from cut-and-dried traditions.

In one delightful city house the bookcases are in the form of "alcoves," such as are seen in the Bodleian at Oxford and other famous English libraries. A great many volumes can be housed in this way, but it needs a master-hand to design the cases, also a large room where the light is well distributed—and such a place is always a library, never a living-room.

What the living-room-library walls should contain besides books depends on the extent of the wall space and the taste of the owners. It is seldom in the decorator's province to plan the pictures. This is sometimes fortunate, sometimes otherwise. Many beautiful living-rooms are ruined by crowded walls quite as often as by cluttered mantel-pieces. If the walls are hung in grass-cloth, buckram, burlap, or other plain textile, an excellent background is provided for photographs, prints, and engravings. Where the bookcases extend around the room, a print collection looks very well strung along the wall, over the cases. Black and whites are particularly effective thus treated. A good many prints can be used in this manner and not mar the quiet of the room, when, if hung hit or miss, or even with care, they would seem to fill the wall space. After the books are in place, if a few things are added, such as a beautiful picture, a decorative bas-relief, a really fine piece of bronze, little more is needed. The books in their colored bindings are part of the wall treatment, and this fact should be taken into consideration in planning the room. The books, the well-designed woodwork, and the comfortable furniture, the generous fireplace, above all the home-like, cozy atmosphere, make of this room the very heart of the house.—  
VIRGINIA ROBIE IN THE HOUSE BEAUTIFUL.

#### VANCOUVER'S DEVELOPEMENT.

*THE INDUSTRIAL DEVELOPEMENT* and building growth of Vancouver is strikingly reflected in a recent report of U.S. Consul-General Geo. N. West, who, in commenting upon the attention being paid to that city by outside investors, says: An American steel company proposes to erect a branch plant for making steel by the open-hearth process; also rolling mills, tube works, nut and bolt works, freight-car works, etc., with 1,500 employes to start. Another American concern from the State of Washington has bought 30 acres and will erect a branch iron works, with a blast furnace, machinery shop, etc. A saw-making company will build a new factory in the suburbs. A fish-packing company will erect a \$1,500,000 cold-storage plant at Claxton, on the Skeena River, for freezing salmon and halibut for shipment in casks to eastern Canada, the United States, and Europe. These are only a few of the new industries, while many others are projected. Banks and business concerns are constructing new modern buildings, some from 5 to 13 stories high, many with steel frames. These and nearly all other new buildings have cement rubble concrete foundations. A few business structures and many dwellings are built of concrete blocks. The building permits issued from January 1 to September 18 covered \$5,478,012 of construction work. Great activity is also manifest in real estate transactions, the daily transfers for several months having amounted to \$500,000.

# ARCHITECTURAL EDUCATION.\*—Lack of Affiliation a Hindrance in the Attainment of Higher Ideals.—Educational Facilities in the United States.—Schools Raising Entrance Standards.—Atelier System Approved for Supplemental Work at Universities. <sup>BY</sup> RALPH A. CRAM

THE COMMITTEE ON EDUCATION has little to show in concrete form as the fruit of its work during the year 1908. Perhaps such results are not to be expected from a Committee which, by its nature, can have no official relation with the great educational institutions of the country. It can act only in an advisory capacity; it has no executive arm and is impotent to put any of its recommendations into practice. Were the institute possessed of a junior body, bearing to it the relation maintained by the English Architectural Association to the R. I. B. A., and acting as the concrete educational agency that stands between the office and the School of Architecture, taking over very largely the educational responsibilities of the institute, but subject to the advice and supervision of its Education Committee, then, in all probability, actual results would be more rapidly forthcoming than is now the case. For this reason, and without prejudicing the question from any other standpoint, the committee expresses the hope that a way may be found for the union of the Institute and the League in one powerful and co-operative organization.

At the last convention the committee asked and received a grant of \$150 for prizes to be given in an intercollegiate competition between the advanced students in the several schools. This competition has not been held and the money has not been expended. The difficulties in the matter of time and conditions that developed as soon as the attempt was made to carry out the intention of the vote of the Institute were very great, and before these could be surmounted the available time, viz., the spring term, had passed. The committee believes that such a competition would now be possible, and therefore asks that the amount voted last year be transferred to the current year and placed at the disposal of the committee.

The committee has always endorsed in principle the teachings of advanced design by practicing architects in ateliers associated with the different schools. This atelier system has been maintained by Columbia,—the only school of architecture which accepts and enforces the scheme in its entirety—while, since the last report Pennsylvania has established an atelier under Professor Gret, intended of course for advanced men. Credit is allowed towards the master's degree to graduate students taking its work under suitable conditions. At Harvard the work in advanced design, under practicing architects, has been continued, the architects for the year being Mr. Day and Mr. Cram.

In its last report the committee urged most vigorously "that the pressing need of education to-day is not curtailment but extension." It was urged that the standard should be one preparatory year, four years in a school of architecture, one or two years of graduate work in Paris, Rome, an American Graduate School, or American ateliers, and finally a year of travel and observation undertaken on lines recommended by a board of advisors to meet the special inclinations, or remedy the special deficiencies of the student. Certain definite advances have been made during the last year towards the accomplishment of this end. The school at Harvard has definitely become a graduate school, a degree being necessary to all entering students. As was to be expected, this change has resulted in a decrease in the number of students, with a corresponding increase in ability: amongst the students are graduates not only of Harvard, but of Yale, Chicago and other universities.

A year ago there was every prospect that the Massachusetts Institute of Technology and Cornell would adopt five year courses in place of four years. At neither place has this reform been accomplished as yet, but at Cornell it is probable that a five year course will be announced during the current year. At the M. I. T., Professor Chandler has been unable as yet to convince the Trustees of the necessity of the change, which is sure, however, to come in time. Meanwhile, both at this school and at Cornell, the entrance requirements are being materially stiffened, which amounts more or less to the same thing, though leaving still undetermined the question of the source from which the student is to gain the preparatory training which may enable him to pass the more stringent examinations.

At Columbia where the lack of adequate facilities to this end has been felt, the rudiments of architecture have been included in the program of the Summer School, which students intending to enter the school in the following year will have to attend.

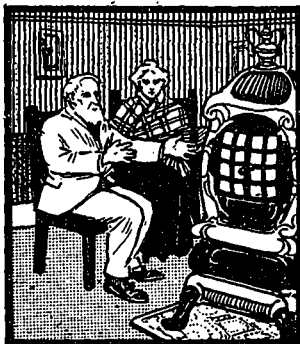
It is evident, therefore, that during the last two years a definite advance has been made towards the extending of the educational period from four to five years. That the institute has not been without influence in this matter is indicated by a letter from Professor Chandler of the M. I. T. to the chairman of the committee, in which he says:

"Even if no immediate practical results have been obtained from the meeting of the Committee on Architectural Education and the heads of those architectural schools invited to meet in consultation, I am sure that this evidence of active interest in these schools by the American Institute has planted good seed. It has served in my own case, to make more forceful my regular appeal to the Corporation in the president's report to require five years' attendance to attain the bachelor's degree. This time I have said that until now our experience alone governed our desires in this matter, but now there have come pressing demands from the architectural profession for a higher standard of graduation, which, if met, makes it important to lengthen the course. This same interest on the part of the American Institute for a higher standard of results is also a very effective stimulus to improve methods and to avoid ruts."

All the schools report a raising of entrance standards and a steady increase in the number of students, except at Harvard where, as has been said above, the change to a graduate school has of course meant a temporary falling off in numbers. At Pennsylvania two-thirds of the states and two foreign countries are represented, while at Columbia inquiries regarding admission have been received from England, Switzerland and Cuba, indicating that even abroad the advantages of an American training are being recognized as worth striving for.

In the matter of the general broadening of the curriculum until it comes to lay more stress on the humanities and the other arts allied to architecture, which it may be remembered was another of the specific recommendations of the committee in its report for 1907, no information is at hand from any of the schools to indicate that any definite action has been taken in this matter. Believing, as it does, that such a broadening on the lines of general culture is imperative, and that reforms of this nature

\*Report of Committee on Education at last annual convention of the American Institute of Architects.



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may be effected only by iteration and reiteration, the committee again asserts with all earnestness and emphasis that in its opinion "reasonable proficiency in Latin should be made a pre-requisite to a degree in architecture: that the study of the history of civilization and the development of architectural style as expressing the varying modes of this civilization be given the utmost prominence possible without unduly prejudicing the other branches of education"; and "that calculus, while valuable as a training agency, is by no means indispensable and might well be eliminated in favor of studies that tend more directly towards the development of general culture."

A subject of vast importance before the American Institute of Architects at this session is that of the proposed establishment of a governmental Bureau of the Fine Arts. It need hardly be said that to this committee such an action seems one of the most important in the line of education that could be taken by the government, and it has therefore its enthusiastic support. To this committee the time seems opportune, therefore, to recur to a principle enunciated in its report to the Convention of 1906, namely, the ideal to which we should work, of a Graduate School of Architecture, and the other arts as well, to be established in Washington, and having the closest possible relation to the proposed Bureau of Fine Arts whenever it shall be established. This committee is unanimous in its recognition of the masterly system of the teaching of design now maintained at Paris, and believes it only voices the convictions of the whole profession in acknowledging the great debt American architects are under to the French government for the courtesy accorded us in common with other nations of availing ourselves of the privileges of the Ecole des Beaux Arts. At the same time the committee repeats what it said in its 1906 report, viz., that "we object to considering our own schools merely as feeders for the School of Fine Arts in Paris." Within the last ten years the position of American students relative to those of other nationalities in Paris has wholly changed: then they were not recognized at the start as possessing any greater dynamic force and professional potentiality than any other nationality: now they are a power, and accepted as such at the start. It is safe to second to none in Paris.

And yet, if the contention of this committee as to the need of broad and general cultural studies in the making of an architect is exact, then the Ecole des Beaux-Arts falls just in as far as it ignores and disregards the value of such humanistic training carried on simultaneously with the study of pure design. To this extent Paris fails of being the perfect and efficient agency we must demand of our graduate school. The best work done in the actual practice of architecture has been at the hands of Americans who have received their final training in Paris, not by the French architects themselves; but while this is true of many, and is a matter of great pride, it is equally true that a far larger number of Beaux Arts men have fallen by the wayside: not by reason of their indifferent furnishing for the practice of an exacting and exalted profession: not because of defects in the schools from which they graduated to Paris, but simply because, under the system there in vogue, they were not enabled to distinguish between the magnificent underlying principles and the frequently indifferent forms and not impeccable taste through which they were expressed. With no equipment for the applying of taste, weighing of value, and discrimination between essentials and inessentials furnished them through that co-ordinated study of the humanities and the artistic form of this manifestation, these students, left to their own devices except in matters of design, taught as a pure science, have been unable to sift the wheat from the tares, and, wolfing all, have demonstrated in practice that the matters that impressed them were less the enduring principles themselves than

the very errant form through which they were manifested.

Now, considering the conspicuous ability demonstrated by the body of American students, as a whole, in Paris, and the fact that where failure has afterwards followed it may with some justice be traced more or less directly to the very quality in the Ecole des Beaux Arts which is diametrically opposed to the recommendation of this committee, and, as well to the general sense of the profession in America, it seems reasonable to urge upon the institute and its friends, the desirability of keeping always before them the ideal of a great and national school at the seat of the government, where pure design shall be taught not less well than now holds in Paris, and after similar methods, but where those elements of inclusive culture and liberal humanism on which such stress is laid, may be inculcated in the student, as does not happen to-day in Paris, or in any other school instituted for the advanced training of men to fit them to play their due part in one of the greatest of the arts.

Until the end of time every prospective artist in any department of the Fine Arts must go to school, for the whole period of his life, to the monuments of past civilizations in Greece and Rome, Italy, France, Spain, Germany and England, but it is no longer necessary, and if unnecessary then most unfitting, that we should be compelled to depend for our crowning education on the charity or the friendliness of another contemporary people. Every nation develops its own type of civilization, solves its own diverse problems after its own native fashion. American civilization is other than that of France, or Italy, or England, and art, which is the flowering of civilization, as well as its touchstone, must vary accordingly, however at one it may be at root with the art of all men at all times.

This committee insists that in so upholding the idea of a great central Graduate School of Architecture for the United States, it shall not be charged with any lack of sympathy with the successful efforts now being made by several of the schools towards the teaching of advanced design, or with any intention of discrediting or discouraging the graduate courses that have been established. In each report made this committee has strenuously urged the raising of the standard both for admission to the several schools, and for the receiving of a degree in architecture. It would be a matter for congratulation were every school to establish a Graduate Course, as Harvard has done, but were this end achieved there would still be the same demand, in the opinion of the committee, for a central Graduate College to which should come men from the schools in every part of the country to contribute their quota of individuality derived from each school in all its desirable diversity, and to acquire from personal contact with other types of men and schools, the breadth and liberality of view which is one of the strong claims Paris now puts forth before architectural students.

Mechanical uniformity is the last thing to be desired as between one school and another: Cornell must differ from Harvard and the Massachusetts Institute of Technology from Columbia, just as the saving strength in the nation lies in the diversity that exists between Virginia and Ohio, Massachusetts and California. And as in the nation the individuality of the states is—theoretically at least—harmonized and co-ordinated by the Federal Government, so in architecture a great central Graduate School should prove both a clearing house and a vital inspiration, giving the several Graduate Schools and courses their true objectives, uniting them in the maintenance of a final school of the highest standards, that is neither French, nor English, nor German, but American.

It may be said that, granting the desirability of such a school, Washington is not the place for its foundation, since it is not in esse a world-capital like London, Paris,



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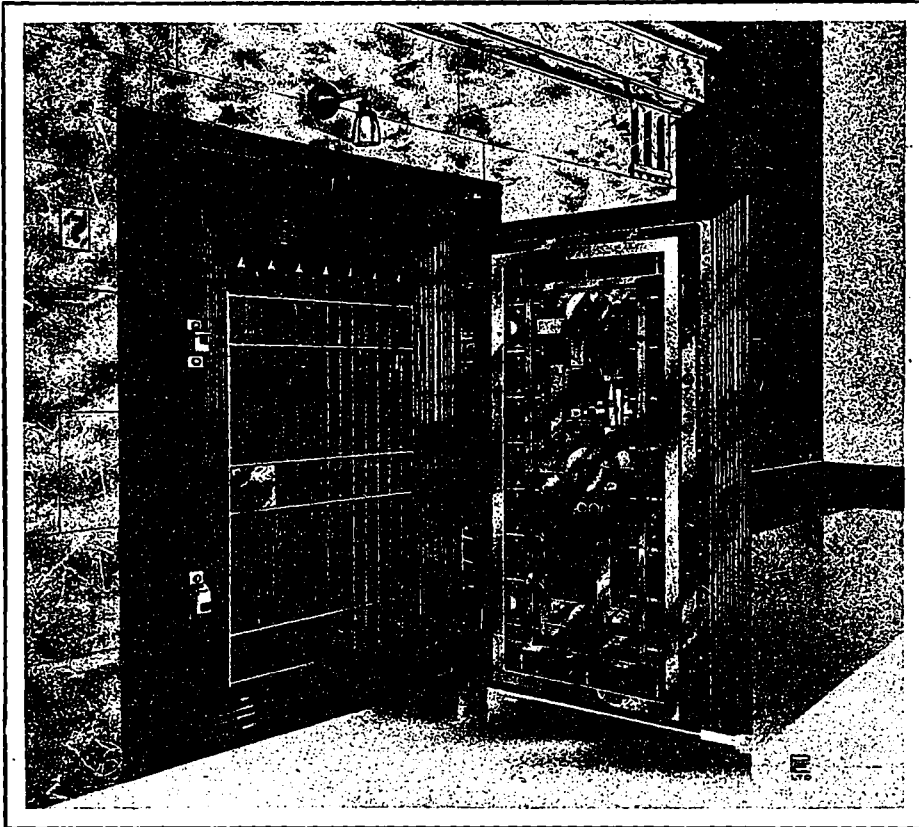


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or Berlin, but is such only in *passé*. The reply to this is that the only way to make it such is by the foundation of precisely such institutions as this: it is said to be necessary to go into the water in order to learn to swim, and if nothing is done to hasten the development of Washington into a world-capital, it is reasonably safe to say it will never become such. The locus of the school proposed has little to do with the principle involved, and actually need not be brought into the discussion at this time, but it may be well for those who question its fitness to ask themselves, after careful consideration, whether Chicago, Philadelphia, New York, or Boston is possessed, any one of them, of the qualities supposed to be lacking in Washington. In the natural course of events such a school as is proposed could not become a matter of fact for some years, and daily, Washington is acquiring something more of that metropolitan and universal character we now desiderate of the capitals of the Old World. Acceptance of the principles, the proclamation of the ideal, is all that is asked for now: the working out in terms and space will be in accordance with actual conditions as they exist when the time comes for putting the ideal into concrete form.

Let us look forward then with eagerness and confidence, let us labor steadily and consistently towards the realization of this crowning ideal of architectural education in America, the establishing in Washington of a great school of Fine Arts, built on the everlasting foundations of art as it has shown itself at all times and amongst all peoples, but framed on lines of the broadest and most liberal culture, directed by men of our own blood and speech, and so conducted as to meet the demands of our own racial civilization, solve our own national problems, making our own successors in the best and broadest sense, American Architects.

### T.S.A. ELECTS OFFICERS.

AT THE ANNUAL MEETING of the Toronto Society of Architects, held on October 19, the following officers were elected for the ensuing year: President, C. H. Acton Bond; vice-president, J. C. B. Horwood; secretary-treasurer, R. B. McGiffin; committee, J. P. Hynes and S. G. Beckett.

### SOLIGNUM.

ARCHITECTS AND THE PUBLIC are both coming to more fully realize that wood preservatives possess an economic value which make them absolutely essential where wood is intended to withstand the ravages of time for any protracted period. Without the use of some element to arrest decay, the life of wood at the best is extremely short; while on the other hand, when subjected to some recognized treatment of this character, it is given a lasting quality which greatly enhances its value. A novel demonstration of use of wood, preservatives was made by F. Sturgeon, Toronto, Dominion agent for Major & Co., of Hull, England, manufacturers of "Solignum," at the Canadian National Exhibition this year. Mr. Sturgeon's unique exhibit which is illustrated herewith, showed, apart from the excellent preservative qualities of this preparation, the high decorative possibilities which "Solignum" admits of, as the various colors in this small structure blended most harmoniously and without the slightest clash to the artistic eye. Everything was treated to one coat of "Solignum"—the shingles, half-timbered work, interior panelling, floors, chairs, and table. The interior panelling was an especially interesting feature, and demonstrated how "Solignum" brings out the grain of the wood, making even common pine and spruce look twice their value for an interior finish. The

models of an English house, farm buildings and railway station, which were specially imported for the Exhibition, also strikingly demonstrated the uses of "Solignum," and created a great deal of interest, as they showed the gen-



Exhibit of F. Sturgeon, Dominion agent for Solignum, at the Canadian National Exhibition.

eral styles of buildings in the Old Country. These models are now being shown by the Montreal agents, Messrs. Wm. Stewart & Co., at the Builders' Exchange in that city.

### A NEW CONTRACTING COMPANY.

CANADIAN CONTRACTS, LIMITED, is the name of a new engineering and contracting organization to which a charter has been granted. The headquarters of the company will be in Toronto and the capital is \$100,000. The officers are: President, W. A. Lamport; Vice-President, William de Leigh Wilson; Managing Director and Secretary-Treasurer, C. H. Mortimer. The new company is well equipped for the carrying out of contracts for engineering work of all kinds, including the construction of power transmission and telephone lines.

### ACCEPTS NEW POSITION.

MR. A. D. DAME, late sales manager of the Galt Art Metal Company, has accepted a position with the Expanded Metal and Fireproofing Company, Limited, of Toronto. Mr. Dame is well known to the trade, and he has a host of friends and acquaintances who wish him every success in his new position.

THE NEW RESERVOIR which is being constructed for the Metropolitan Water Board at Chingford, Essex, England, will be the largest of all London's lakes. It will extend to 416 acres, with a circumference of nearly five miles. The new channel for the River Lea, which is being built outside the reservoir, is three miles long. Among other materials there will be required 157,000 cubic yards of concrete, and 21,000 tons or 350 barge-loads of Portland cement. The time for the completion of the works is four years from March, 1908.

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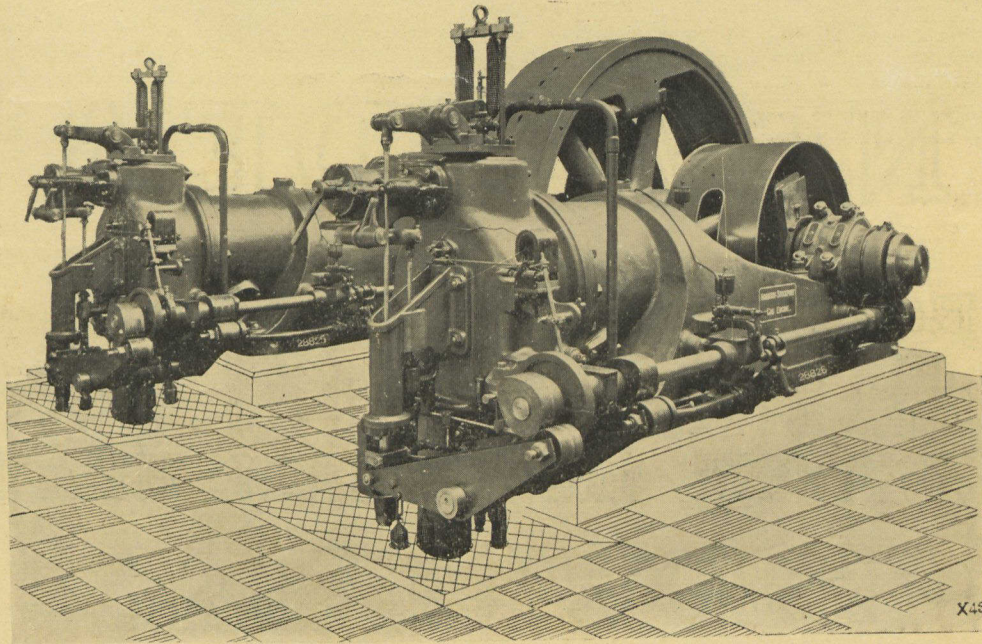
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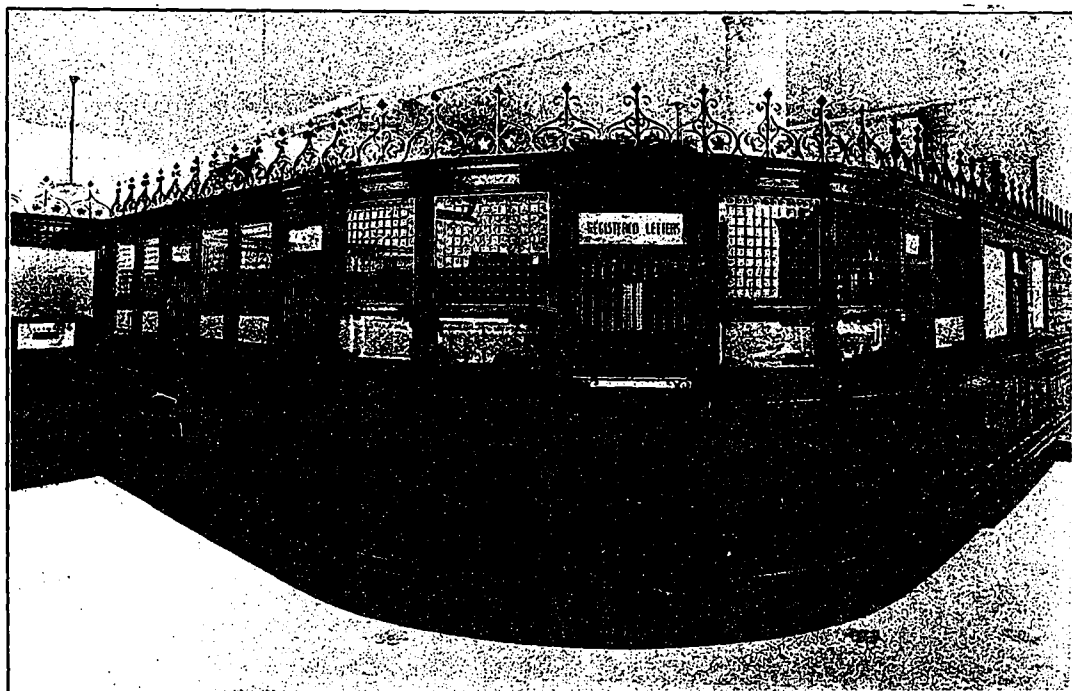
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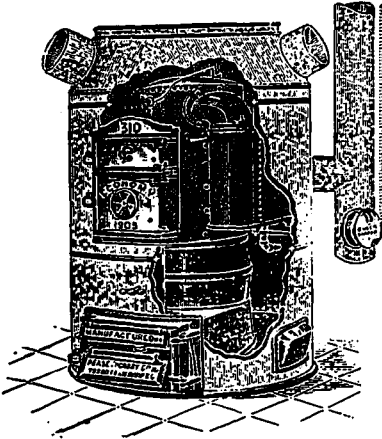
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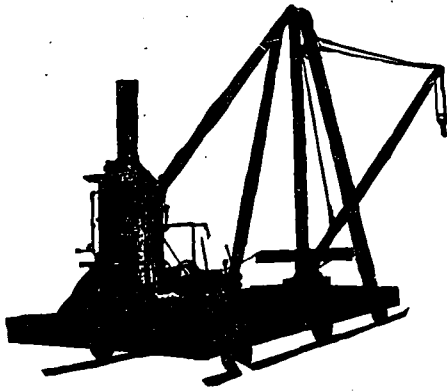
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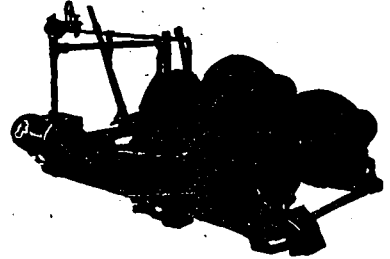


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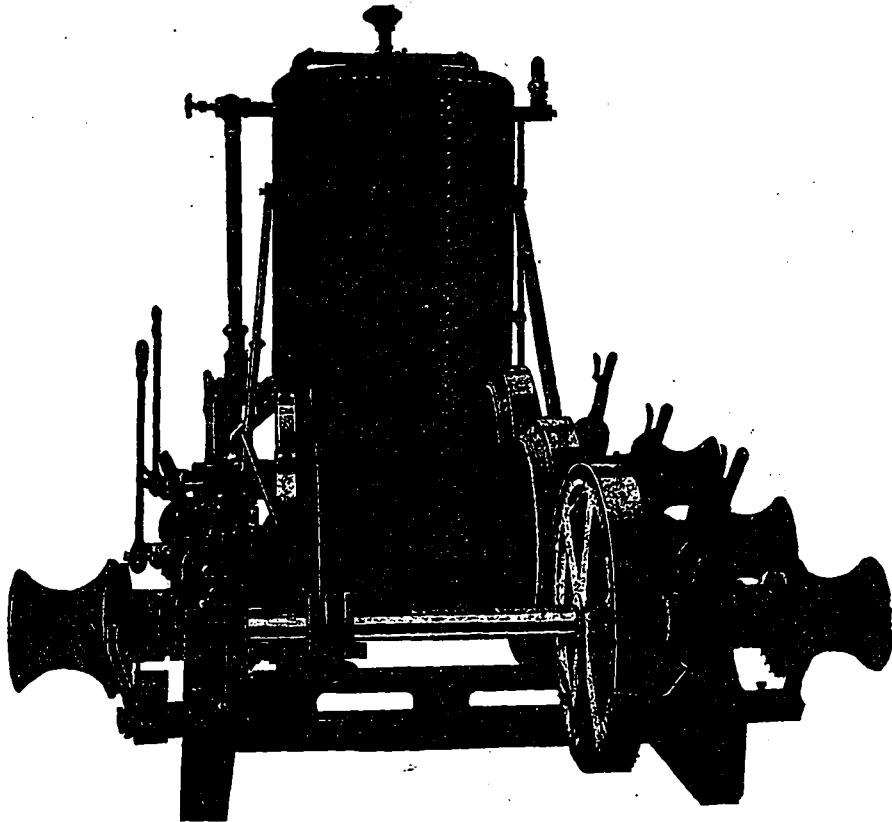
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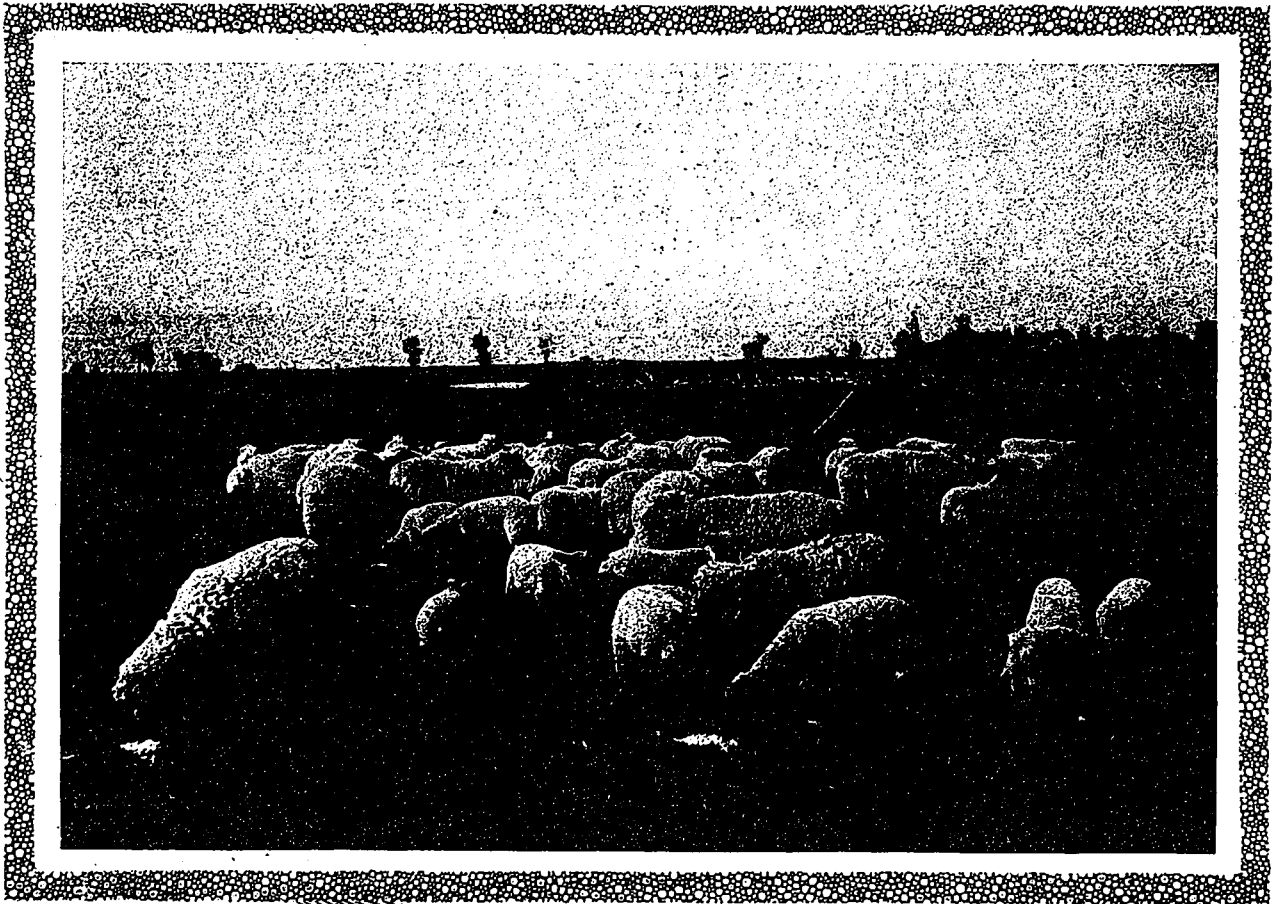
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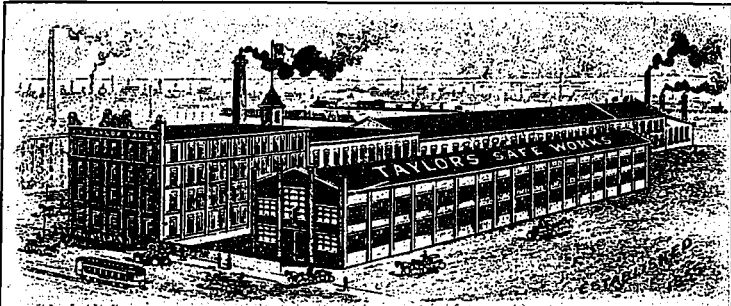
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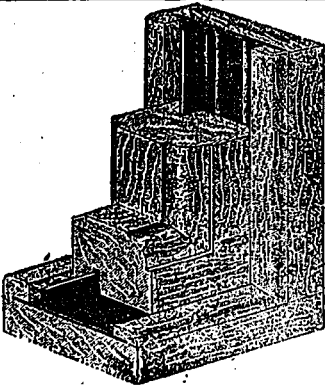
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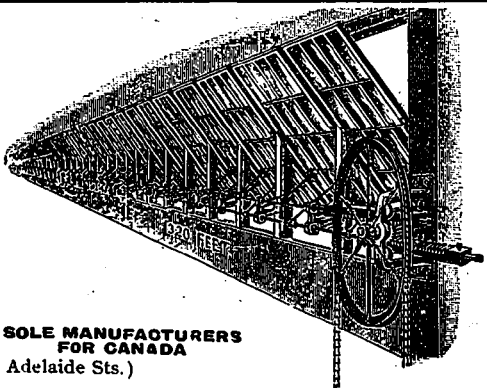
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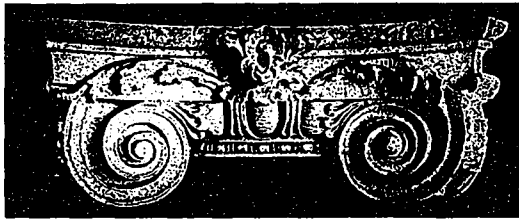


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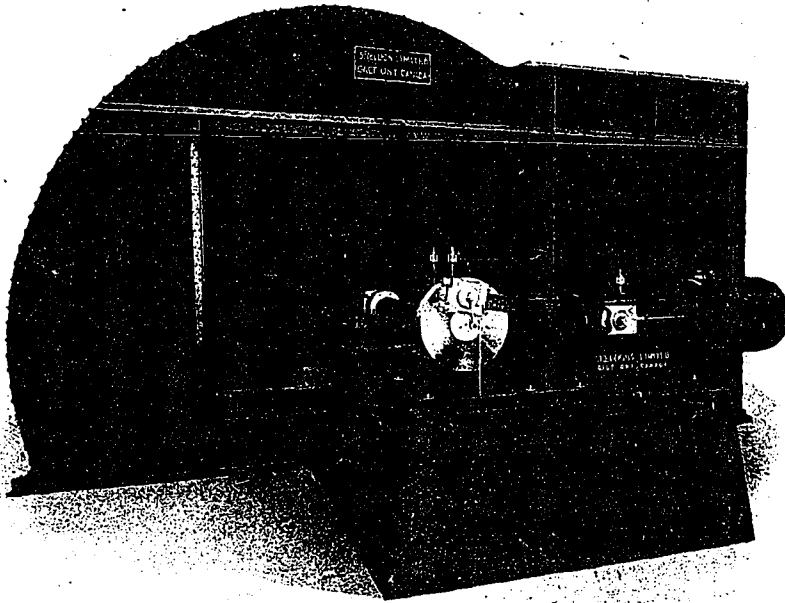
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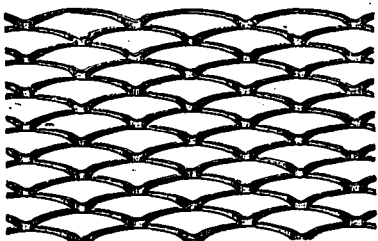
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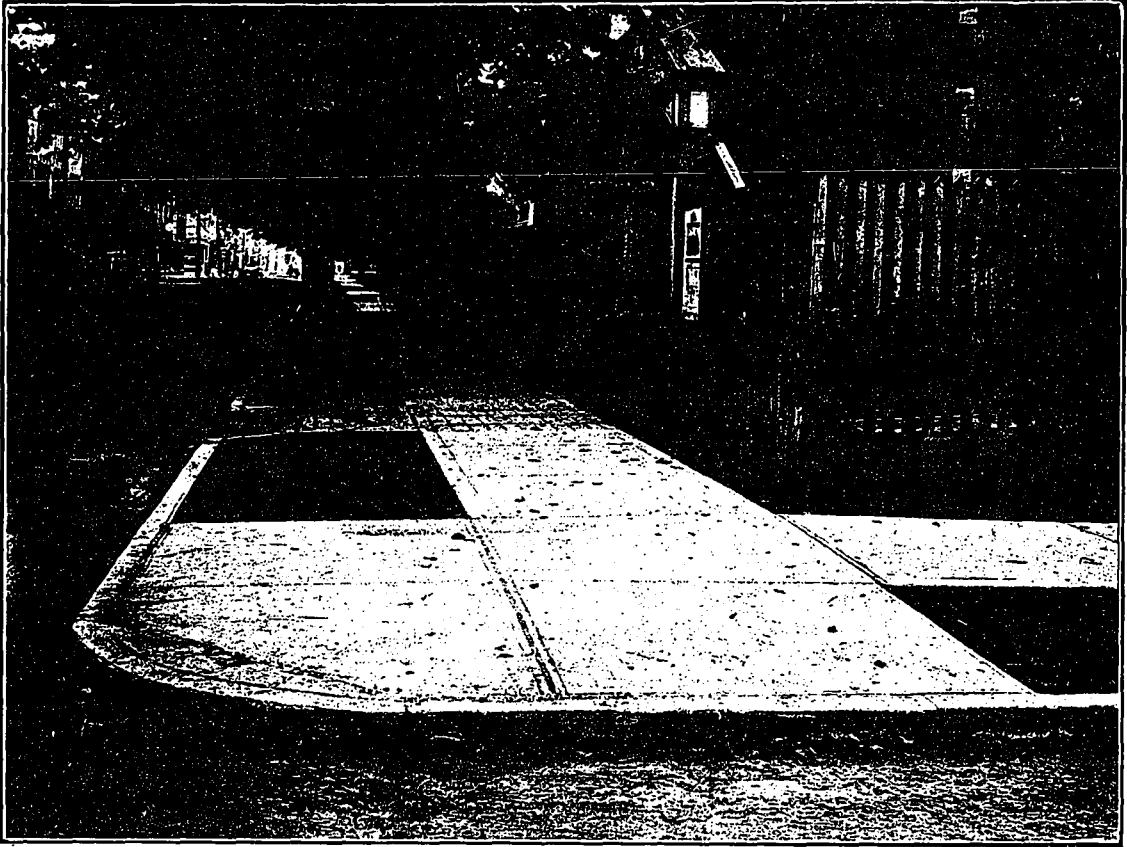
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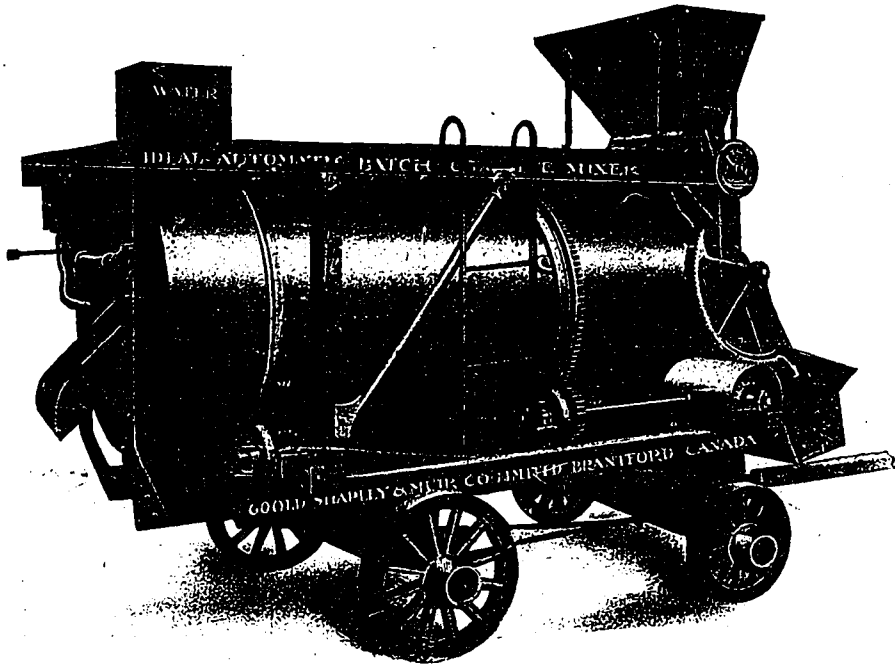
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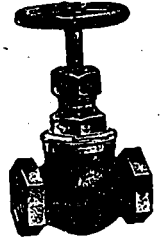
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