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DECEMBER, 1910

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# CONSTRUCTION

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



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10/11

# **“MEDUSA”**

## **Water-proof Compound**

**Makes Concrete Impervious to Water  
Prevents Discoloration and Efflorescence**

It is a dry powder, to be thoroughly mixed with dry cement before sand and water are added, thus becoming an inseparable part of the concrete.

“MEDUSA” GIVES ABSOLUTELY PERMANENT RESULTS, WILL NOT AFFECT STRENGTH, SETTING OR COLOR OF PORTLAND CEMENT.

## **Medusa White Portland Cement**

A true Portland, perfectly White in color—Stainless—Guaranteed to Pass Standard Specifications.

Equal or Superior to any other White Portland Cement known. For Exterior and Interior Work where any High-Grade Portland is required.

A beautiful product adapted to Ornamental Artificial Stone Work of the Highest Grade.

**REQUEST FREE SAMPLE, CIRCULAR AND PRICE.**

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Manufactured in Canada by

**Stinson-Reeb Builders' Supply Co., Limited**

9th Floor Eastern Townships Bank Building

MONTREAL, P. Q.

WE WANT AGENTS IN EVERY CITY AND TOWN TO HANDLE THIS MATERIAL

What's in  
a Name

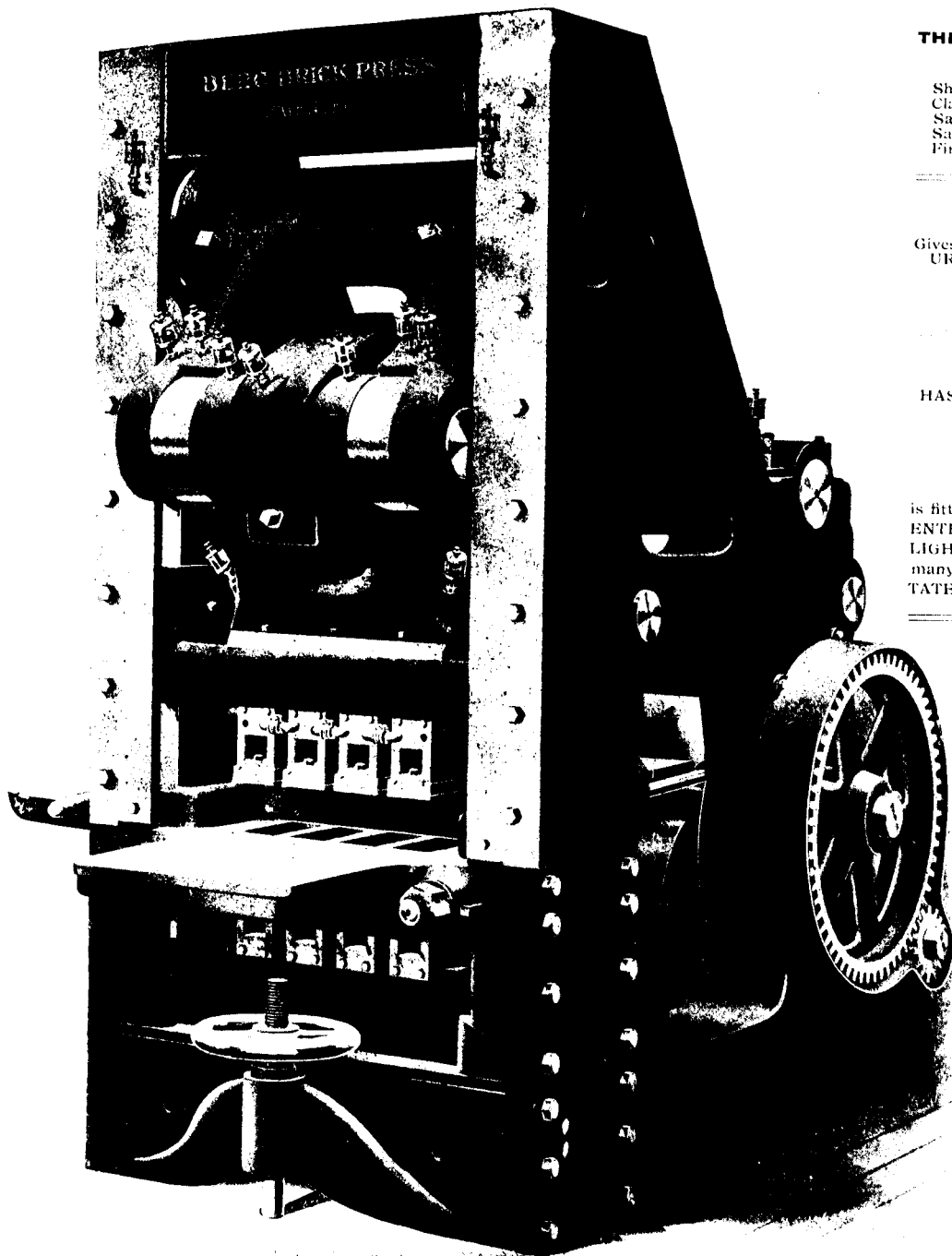
**S**IMPLICITY  
**T**RENGTH  
**D**URABILITY

**A**CCES  
**S** TO ALL  
**P**ARTS

**C**REATEST  
**P**RESSURE

**B**EST  
**P**RODUCT

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

CORRESPONDENCE SOLICITED.

**THE BERG PRESS EXCEL**

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.

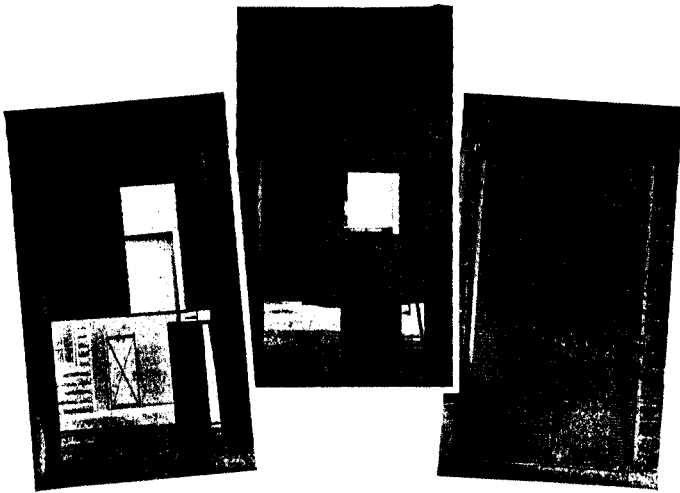
Molds can be  
Changed in a Few  
Minutes Owing to  
the SIMPLE  
MECHANICAL  
CONSTRUCTION.

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 Tor-  
onto, Canada, ex-  
clusively. Also all  
equipments for  
Pressed Brick  
Plants to make  
Sand-Lime  
Brick, Sand-  
Cement Brick,  
Shale Brick,  
Clay Brick and  
Fire Brick.

**THE BERG MACHINERY MANUFACTURING CO., Limited**

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



**USE**  
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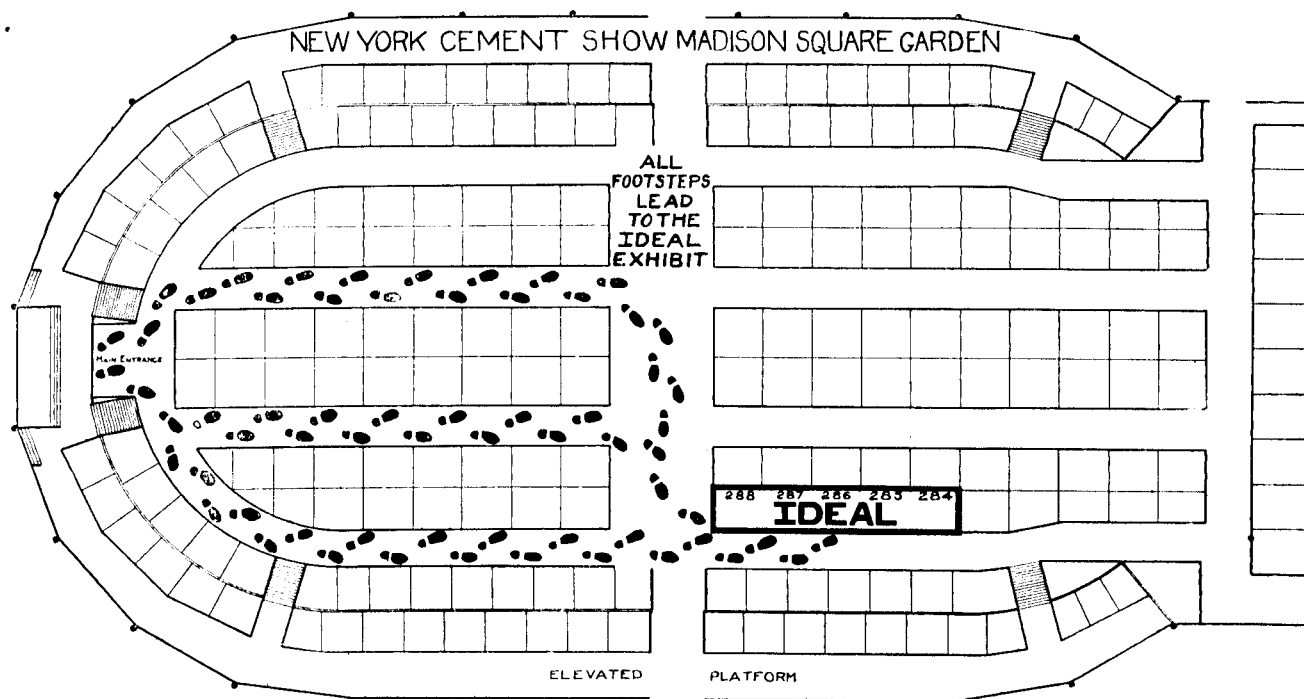
**Fireproof**  
**Compact**  
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***A Great Cement Show of International Importance will be held  
at The Madison Square Garden, New York City  
Dec. 14th to 20th, 1910***

## OUR INVITATION

It is our pleasure to call attention to this elaborate cement show and urge the attendance of every person interested in its allied industries. This show will be an inspiration, education and help to everyone who can attend.

*Especially*, we extend the hospitality and welcome of The Ideal Concrete Machinery booths Nos. 284—285—286—287 and 288, to our many customers—also to those who are interested in learning the unusual advantages and wonderful completeness of Ideal equipment.

Ideal Concrete Machinery has so many features and advantages over all other concrete machinery that the man who wants the *best* and the *most profitable* outfit owes it to himself to study our exhibit of machinery for the manufacture of

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|---|--|
| Concrete Blocks, Bricks, Veneer Blocks,<br>Sills and Lintels, Sewer Pipe, Drain Tile,<br>Fence Posts and Silo Blocks. | Ornamental Stone; also Automatic Power<br>Tampers, Scraping and Finishing Attach-<br>ments and Batch Mixers. |
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We also will make an elaborate display of the remarkable development in Tycrete Blocks and Products.

We will be glad to furnish all information possible concerning rates, accommodations, etc., relative to this show. Address all such queries to *Promotion Service Department*.

**You Are Welcome**

The Opportunities of this Show are of a Lifetime

**Ideal Concrete Machinery Company, Ltd.**

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### KUDOS

Designed specially for installation in Schools, Hotels, Public Buildings, Etc., having an extra large waterway, special design bent wood tank piano polished, heavy copper lining, fitted with the latest improved side-lever push, our patent elevated high-pressure ball cock, with valve, and post hinge seat.

UNCONDITIONALLY GUARANTEED.

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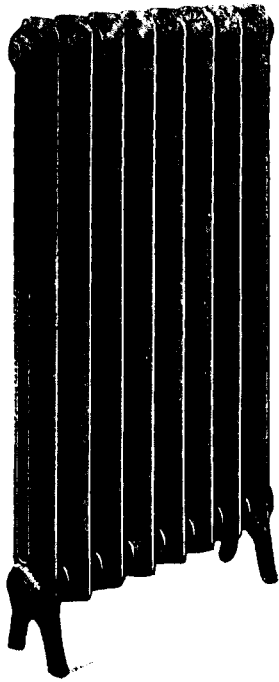
MONTREAL

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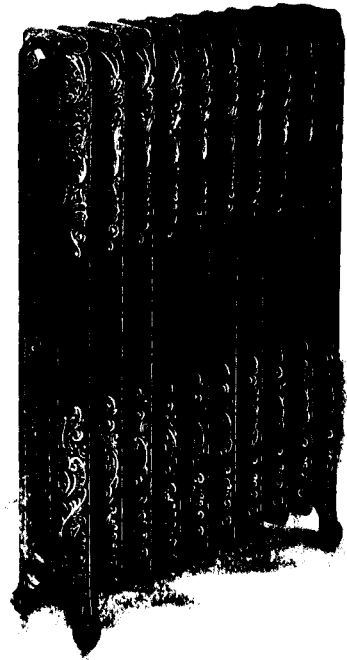
WINNIPEG, MAN.

# SAFFORD RADIATORS



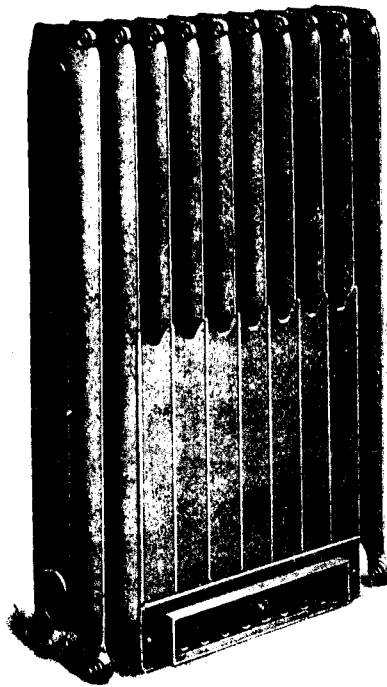
Zenda Plain Single Column.  
The Narrowest Radiator Made.

The outstanding feature of the "Safford" line is the magnificent assortment of styles and patterns. There is no requirement in either heating or ventilating apparatus that cannot be fully satisfied by the installation of "Safford Radiators."



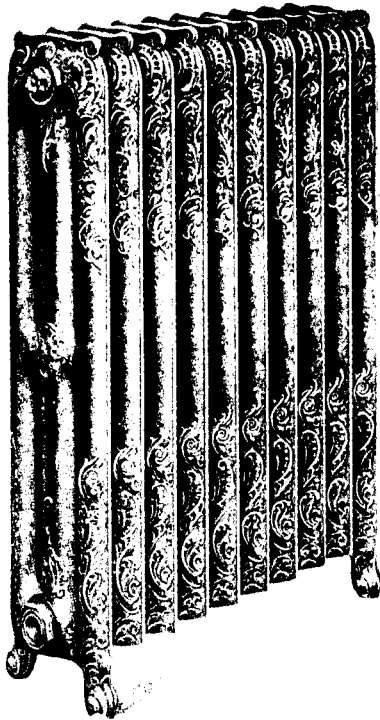
Regina Ornamental.  
Two Column.

Not only in the perfect symmetry of outline, but in absolute mechanical accuracy, does the Safford excel.

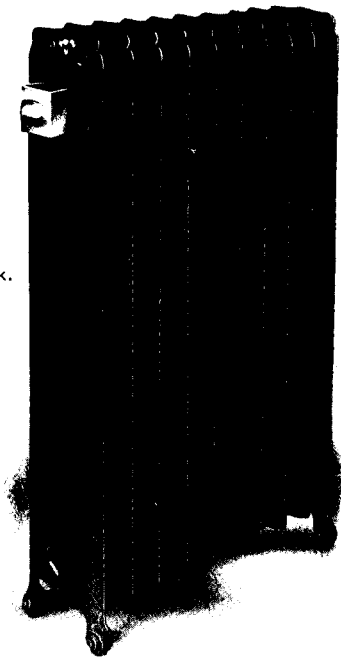


The New Adjustable Box Base for ventilation work.

Safford Radiators emit a greater number of heat units, per square foot of catalogued radiating surface, than any Radiators manufactured.



Trident Ornamental.  
Three Column.



The Empress Humidifying, with  
Vapor Pan.

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**THE DOMINION  
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Porte Cocheré, an example of our Ornamental Iron Work.

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TORONTO, CANADA

**Ornamental  
Iron**

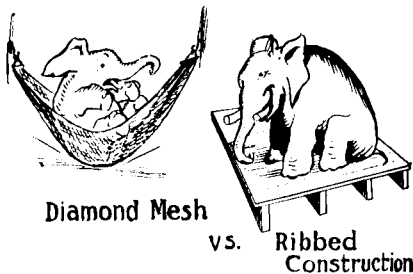
Architectural and Decorative  
Work in

**Bronze,  
Brass,  
Wrought Iron**

Particular attention given  
to Architects' Requirements

**Herringbone Metal Lath**

can again be delivered promptly. Again we can tell you why we find it so hard to keep up with our orders.



**Herringbone Lath**

**Spans Sixteen Inches**

Standard building construction has joists and studs spaced sixteen inches on centers. Herringbone Lath is the only brand of metal lath that will go directly on standard construction. If you don't use Herringbone you use furring strips--an additional cost of nine cents per square yard.

**CLARENCE W. NOBLE** General Sales Agent **117 Home Life Bldg., Toronto**

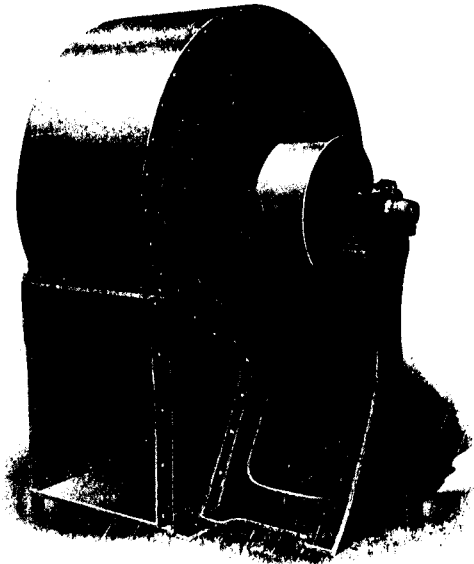
METAL SHINGLE AND SIDING CO., Manufacturers



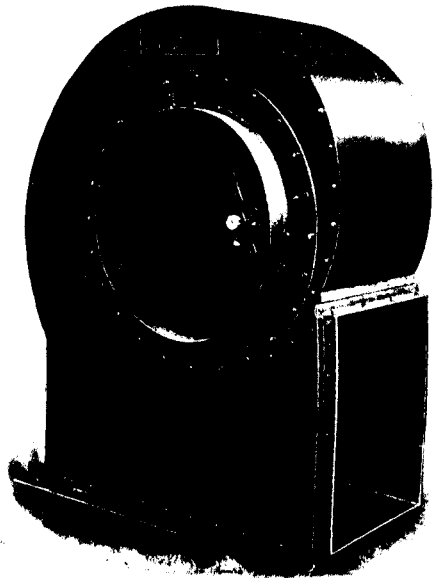
— THE —  
**ÆOLOS FAN**

(Pronounced E-O-LOS)

The  
 King  
 of  
 The  
 Winds



ÆOLOS FAN, pulley side, bottom discharge.



ÆOLOS FAN, inlet side, bottom discharge.

Canadian  
 Patent  
 No. 122822

"ÆOLOS," the new Model Sheldon Patented Air Fan, represents absolutely the latest development in centrifugal fan construction. In designing this fan tests were made of almost every known type of fan wheel in order to secure a wheel which would offer the least resistance to the flow of air and at the same time deliver a maximum volume at a given pressure.

"THE ÆOLOS FAN WHEEL represents the result of these tests."

The ÆOLOS FAN WHEEL differs from all others in design and construction; the blades are set at an angle peculiar to these fans only; they are so set that they take advantage of the natural flow of the air in its passage through the fan and simply assist it on its way. These blades are not curved or buckled in any way, but being perfectly straight and flat on their surface, offer the least possible resistance.

Some idea of the mammoth capacity of ÆOLOS FAN WHEELS may be gained from the fact that

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Specify ÆOLOS FANS

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## The Various Structural Purposes for which Cement can be Used are Practically Unlimited.

**F**ROM the common garden walk to the most stately and superb edifice are the extremes which define the boundaries of concrete's usefulness.

There is hardly a piece of construction, employing wood, or brick, or stone, for which cement cannot be used to better advantage.

The very general application of cement within recent years to the erection of buildings of the domestic, public and business order demonstrates its superiority where the triple virtues of economy, durability and beauty are especially desired. And its

usefulness has been even extended to cover every branch of civic and municipal engineering. The editorial pages of the representative architectural and engineering journals indicate in no small measure the tremendous hold which cement has taken on the building profession of Canada and the United States.

Members of the engineering and architectural professions in Europe have long since become steadfast and earnest advocates of cement for almost every form and type of building construction.

Indeed, it is largely due to their recognition of

its many advantages and their signal success in directing these advantages to the furtherance and betterment of architectural design and scientific engineering, that cement chiefly owes its general and universal introduction and usage.

Because of its elastic adaptability to various recognized artistic types of classical and modern architecture, combined with its essential qualities of economy, beauty and durability, cement furnishes sufficient reasons for its present popularity among

members of both the architectural and engineering professions and their clients.

No fact is more obvious, however, than that the success of concrete work, depends almost altogether upon the quality of the cement used. To be sure of absolute purity under all conditions, specify

# Canada Cement

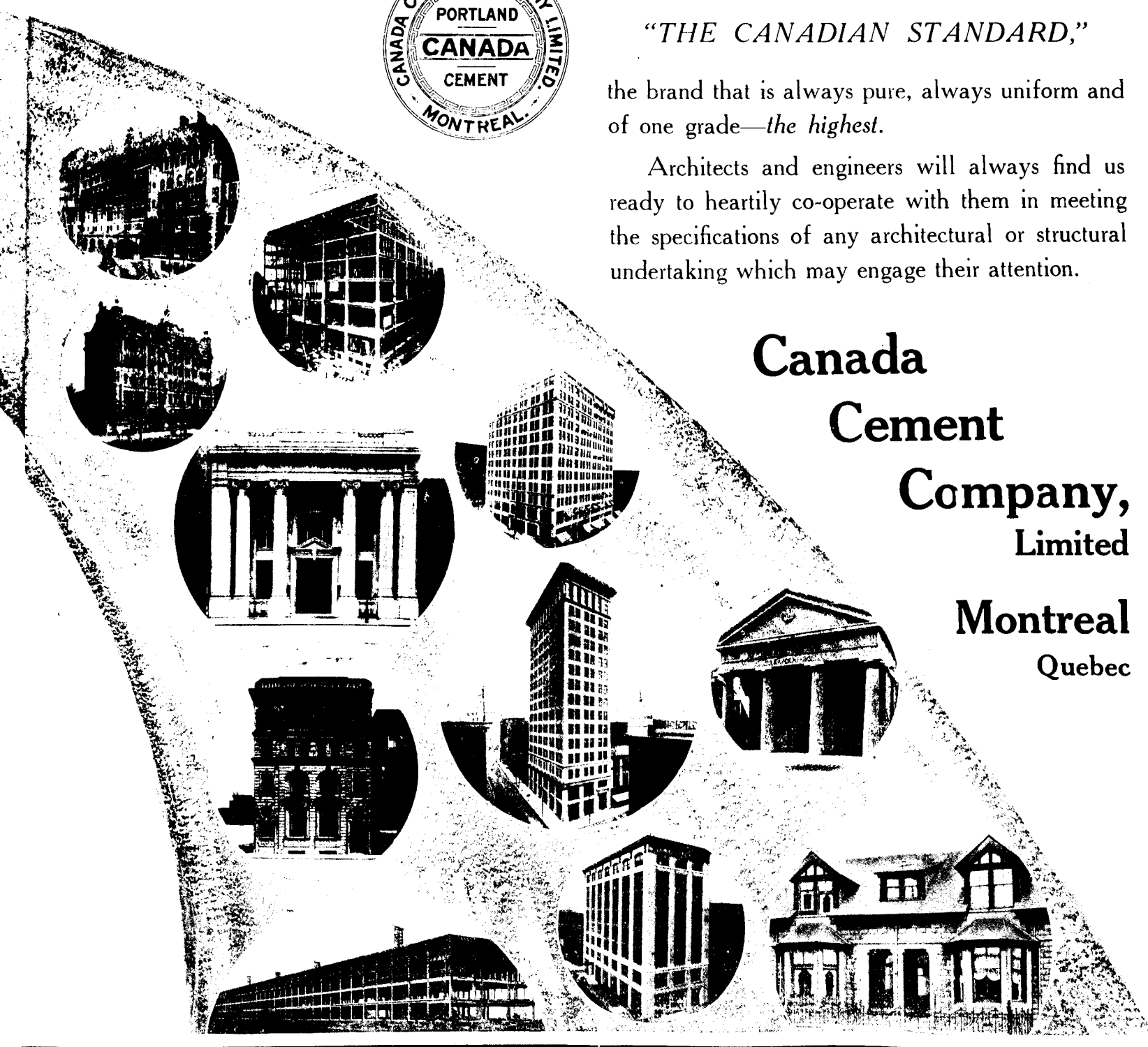
*"THE CANADIAN STANDARD,"*

the brand that is always pure, always uniform and of one grade—the highest.

Architects and engineers will always find us ready to heartily co-operate with them in meeting the specifications of any architectural or structural undertaking which may engage their attention.



**Canada  
Cement  
Company,  
Limited  
Montreal  
Quebec**



**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.

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**Largest General Engineering Works in the Dominion of Canada**

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You Prices and Dates  
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# PORTLAND CEMENT

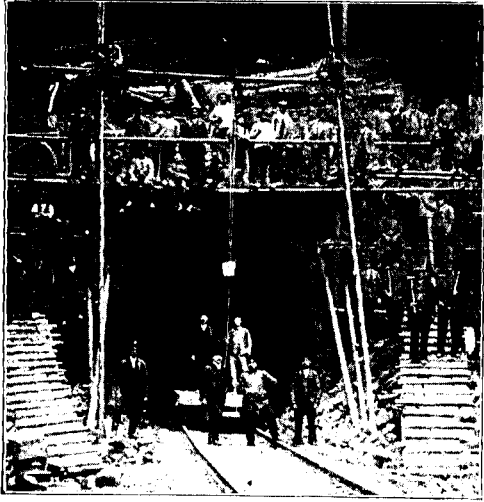
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## **ALFRED ROGERS**

**2 Manning Arcade, TORONTO**

Phone Main 4345

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Ruppertsberg Tunnel, 1 mile long, constructed by the German Government, waterproofed with Ceresit. (This is only one of the many tunnels which have been waterproofed with our material.)

# CERESIT

is a milky paste which is simply added to the water used in mixing concrete and mortar. With the water Ceresit penetrates to all parts of the concrete and mortar and assures a permanent water and damp-proof job.

No expert help required; no scientific and expensive mixing.

CERESIT is not an experiment, but has been used with complete success on hundreds of tanks, pits, foundations, dams and bridges. It has been employed by practically all Governments in the civilized world. **MORE THAN 5,000,000 CUBIC FEET** of concrete and mortar have been waterproofed with CERESIT in 1909. The use of

Ceresit is complete insurance against the penetration of moisture or dampness, even under a pressure of more than 70 pounds per square inch.

*Ask for our free book. It is money in your pocket to know all about this excellent material.*

**CERESIT WATERPROOFING CO., SOLE MANUFACTURERS**  
CHICAGO, U.S.A.

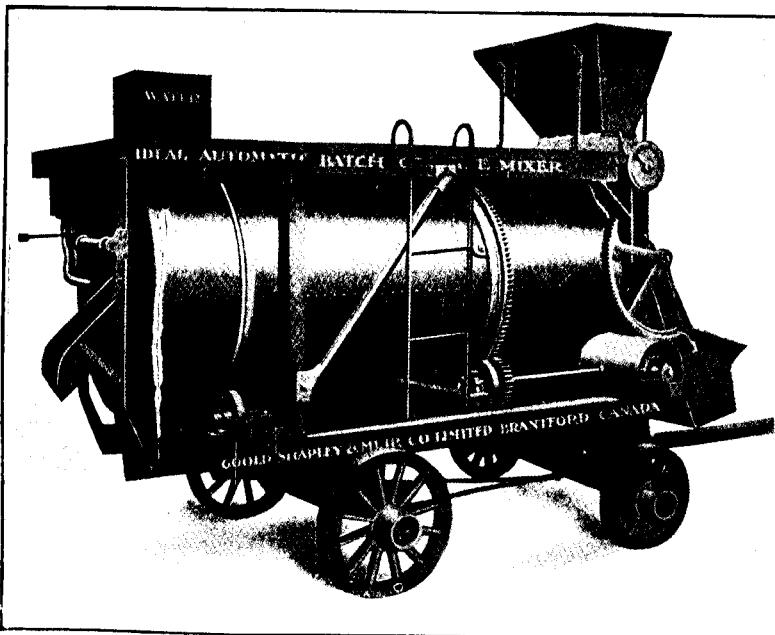
Winnipeg. Western Dealers **SOLE CANADIAN DEALERS** Toronto, Ottawa, Montreal  
**GROSE & WALKER, 259-261 Stanley St. EADIE-DOUGLAS, Limited**

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### AUTOMATIC BATCH CONCRETE MIXERS

Will do more work with less help than any other.  
We also Manufacture GAS and GASOLINE ENGINES,  
TANKS, TOWERS, HOISTS, &c.

Write for Catalogues.



**GOULD,  
SHAPLEY &  
MUIR CO.,**

**BRANTFORD,  
CANADA.**

# Electric Dumb —Waiters—

**D**UMB WAITERS are now considered a necessity in restaurants, hotels, apartment houses and large private residences. The **Electric Dumb Waiter** is worked automatically by means of a push button, a series of push buttons being arranged according to the number of floors the conveyance has to serve. Its operation is simple and reliable, consisting of the mere pressing of a button with number corresponding to the floor to which it is desired the waiter to go. We have installed these waiters in Toronto and other cities in Canada, where they are giving the most complete satisfaction. Send for list of buildings in which they are in use.

We also manufacture **Dumb Waiters** operated by hand, cable or rope.

## The Turnbull Elevator Mfg. Co.

John Street, Toronto

Branches—22 St. John Street, Montreal

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## Qualities Required in Composition or Terrazzo Flooring

are

That it does not crack

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**Possesses All These Qualities**

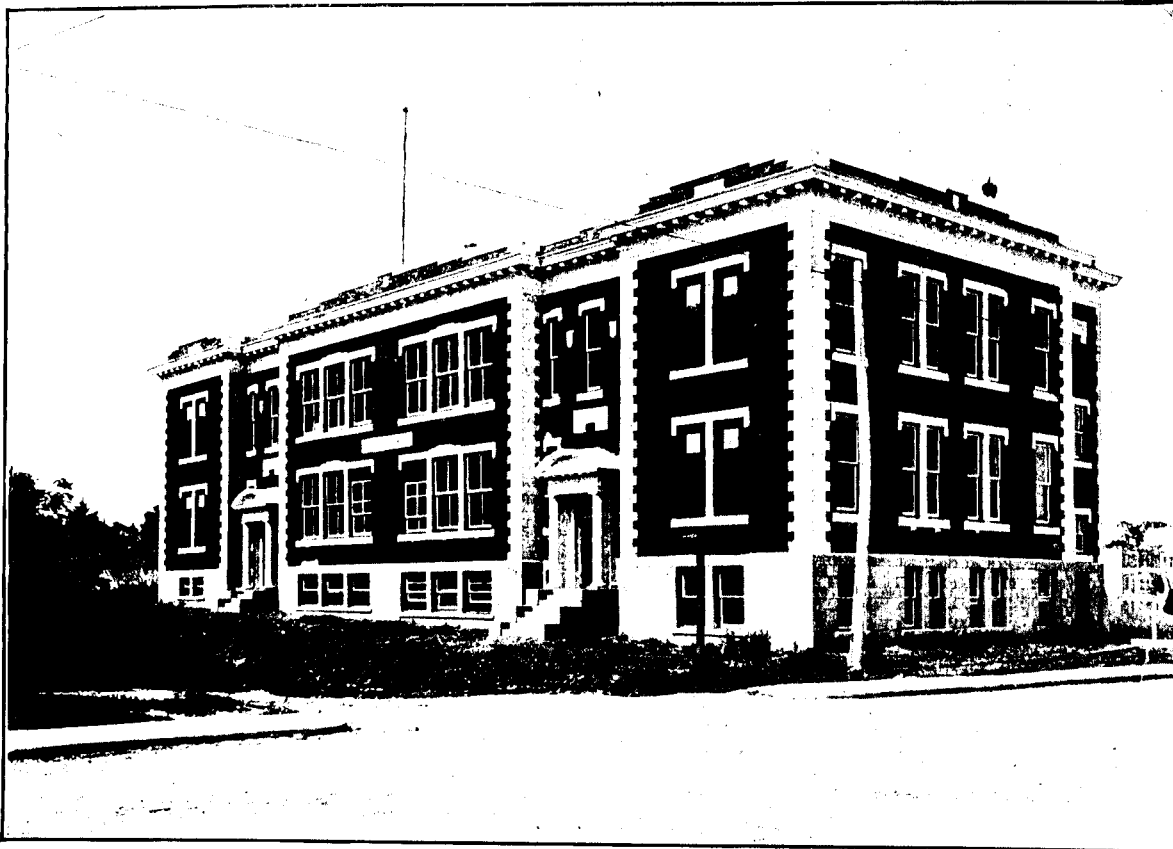
*Let us send you a list of important  
buildings containing our flooring*

We are also manufacturers and contractors  
for Mosaic Marble Floors, and all designs  
in Floor and Wall Tiles

**Toronto Flooring Company**

166 ADELAIDE ST., TORONTO Phone M. 7590





**Querbes School, Outremont, Montreal**  
**JOS. PERRAULT, Architect**

“The most sanitary school building in the city and district of Montreal.”  
 DR. LEBERGE,  
*Medical Inspector.*

**WALLS LATHED WITH 24 GAUGE**

***PEDLAR***  
**Expanded Metal Lath**

All ceilings supplied and erected by The Pedlar People.  
 All outside angles on walls reinforced by Pedlar Universal Corner Bead.

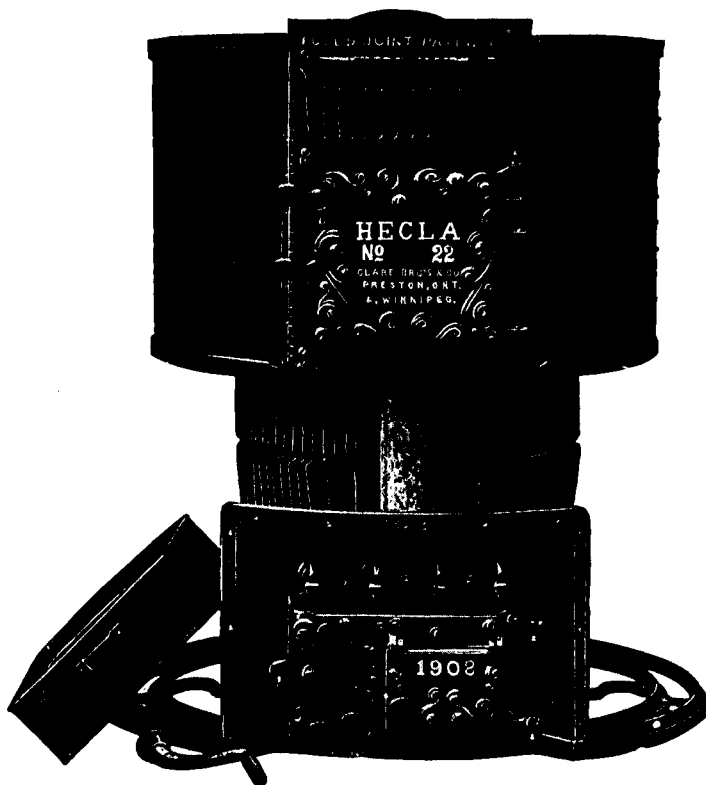
**The PEDLAR PEOPLE of Oshawa ESTABLISHED 1861**

HALIFAX 16 Prince St.	ST. JOHN 42-46 Prince William St.	QUEBEC 127 Rue de Pont	MONTREAL 321-3 Craig St. W.	OTTAWA 423 Sussex St.	TORONTO 111-113 Bay St.	LONDON 86 King St.	CHATHAM 200 King St., W.
PORT ARTHUR 45 Cumberland St.	WINNIPEG 76 Lombard St.	REGINA 1901 Railway St.S.	CALGARY Room 7, Crown Block	EDMONTON 633 Fifth Ave., North of Jasper	VANCOUVER 319 Pender St.	VICTORIA 434 Kingston St.	

ADDRESS OUR NEAREST WAREHOUSE. WE WANT AGENTS IN SOME SECTIONS. WRITE FOR DETAILS. MENTION THIS PAPER.

# "HECLA" WARM AIR FURNACE

## 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**  
**INDIVIDUAL GRATE BARS**

**PATENT FUSED JOINTS**  
**CAST IRON COMBUSTION CHAMBER**

# Clare Bros. & Co., Limited

## PRESTON, ONTARIO

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# Iron Clad Paints

for metal surfaces exposed and encased, composed of the best pigments for the purposes obtainable, and pure oxidized linseed oil specially prepared

## Muresco

is the acknowledged high-class interior WALL FINISH. Possesses the merits necessary for the finest decorations. It is made in white, sixteen tints and sixteen colors. There is only one grade of MURESCO and it must be mixed in Boiling Water. Under ordinary conditions one coat is sufficient, although another can be applied, consequently it is very economical. MURESCO is absolutely sanitary.

## Sani-

## - Flat

is a sanitary flat oil paint for interior use, unfading and extremely durable and economical. It is a non-poisonous oil paint, is thoroughly washable, and dries out perfectly flat, gives a soft, rich soothing effect.

## Mooramel

a perfect flowing enamel for interior and exterior use, does not set quick or show laps. Makes a permanent and beautiful finish. It will not crack or turn yellow and can be washed frequently, water having no effect upon it.

## "Impervo Brand" Varnish

**BENJAMIN MOORE & CO., Limited**  
 NEW YORK, CHICAGO, CLEVELAND, CARTERET, N.J.  
 W. TORONTO, Can., Phone 589 Junction.




# STEEL AND RADI

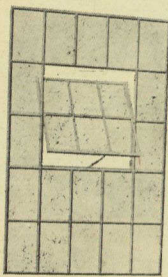
**T**HE fact that several of the largest manufacturers of steel and newspaper announcement, in so far as the architectural and

It is due the readers of "Construction" that we place briefly have served to make our leading products, standard with both the

Herein are enumerated eight of our leading and most widely known

## Fenestra Sash

A wrought steel sash with a patent joint, that gives each intersection maximum strength and rigidity, with minimum bulk and weight. Unlike other joints, in this one practically no metal is taken out to weaken it.



Fenestra Sash has come to be recognized by leading Architects and Engineers as the only adequate solution of the "light" problem for modern industrial structures. Fenestra, moreover, is essential to an absolutely fireproof structure.

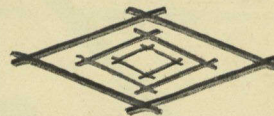
Frame and sash combined—shipped ready to install—a radical departure.

Plan your buildings to take "Fenestra."

## "Steelcrete" Expanded Metal Reinforcement

The Architect or Engineer specifies "Steelcrete" as a reinforcement, because he knows that in doing so, he will get the proper area of steel in the proper place, and that his slab, when "Steelcrete" is used, is reinforced throughout instead of just at intervals, as in cases where straight bar and ordinary fabric reinforcement is used.

A slab reinforced with "Steelcrete" does not, under severe loading, develop unsightly cracks, as other systems do. Owing to the strands being rigidly connected, and owing to the peculiar shape of the mesh, the load is distributed uniformly throughout the whole slab. By the use of "Steelcrete" there is produced a mechanical bond unsurpassed by any other mesh fabric or rod system.

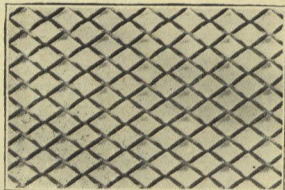


There is nothing of an experimental nature about "Steelcrete"—this wonderful reinforcement is a proven success.

## "Steelcrete" LATH

It has been demonstrated to the satisfaction of every architect and plasterer in the country, that our new square mesh lath is entirely in a class by itself. This lath creates an ideal plaster key owing to the manner in which the square mesh is twisted.

When the Architect specifies this lath, even for his very finest work, he can be assured that there will be no possibility of cracks or stains. The development of corrosion is also obviated by reason of the complete imbedding of the lath.



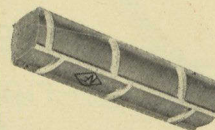
"Steelcrete" Plasterers' Corner Bead should always be used.

## N. F. "Klutch" Bars

The mechanical bond insured by the use of N. F. Bars is made possible through the ingenious cup formation of the surface of the bar.

Where the "Klutch" Bar is used, the concrete must be sheared along the surface of the bar before failure from slipping can occur.

Made from the highest grade of steel, "Klutch" Bars not only provide for all tension stresses—they are fabricated in such a manner that all shearing stresses are amply provided for. By bending the ends of the bars upward at an angle of 45 degrees, so that such ends are imbedded well



beyond the neutral axis of the beam, we get the effect of the deformation working against the bearing properties of the concrete, thus insuring prevention of failure by diagonal tension.

When You Specify

HEAD OFFICE:  
Fraser Avenue, Toronto

# "STEEL AND RADI

# DIATATION, LIMITED

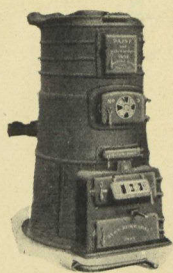
heating apparatus have united, calls for something more than a mere engineering interests of Canada are concerned.

before them, in one comprehensive announcement, the features that profession and the trade.

lines---together with a few of their outstanding qualities.

## Daisy Boilers

These boilers have been installed in 40,000 homes in Canada. In every part of the country Daisy Boilers are known and appreciated. In every one of these 40,000 homes, they give the utmost satisfaction; providing fresh, warm air at a minimum of trouble to the owner.



The fire-pot and fire-travel of the Daisy Boiler are so designed as to get all the heat out of the fuel burned—none is lost up the chimney.

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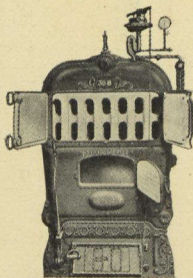
The patterns included in this line will be found the most artistic ever produced, both in the plain and the ornamental designs. King Radiators are handsomely built in æsthetic proportions and the relief ornamentations are such as to readily lend themselves to various combinations in interior decorative schemes.

The KING is a screwed nipple radiator, and each section we guarantee to have the full amount of rated surface. The illustration shows one of the special forms of King Radiators, of which there are many, to suit individual requirements of interior arrangement.



## "Viking" Boilers

Made without manifolds or headers, Viking Boilers can therefore be increased to any capacity without disturbing connections, and with no expense other than that for additional sections. The value of the above mentioned feature must be apparent to all, and while it is but one of many distinguishing characteristics of the "Viking," it is a sufficiently unusual feature to be mentioned especially.

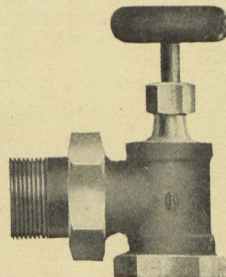


This boiler is famous for the quality of its castings, and gives a maximum heat from minimum fuel, because of the great steam space above the flues. This feature further insures a perfectly steady water line.

The ratings given for these boilers are guaranteed to be absolutely reliable.

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Steam fitters will find us ready to give prompt and careful attention to their wants.

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# EVIDENCE

**Q** We have been illustrating in these pages, buildings including Residences, Banks, Office Buildings, Factory Buildings, Power Plants, etc., erected at various points from coast to coast in Canada in which

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(TRADE MARK REGISTERED)

has been specified by many of Canada's most prominent Architects, and intend to continue to do so for the purpose of proving the wide scope of different types of structures in which "ROMAN STONE" has been used with pronounced success, also with the object of demonstrating that the most beautiful architectural effects can be produced by us *at a great reduction in cost* over the laborious method of cutting and carving natural stone. The colors and texture of this material are more uniform and pleasing to the eye than that of Natural Stone, and the snappy, crisp effects of clay modelling are present in the execution.

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William Dawson School - -	A. F. Dunlop.	Masonic Hall - - -	Munro & Mead.
Kensington School - - -	A. F. Dunlop.	Merchants Fire Ins. Bldg. -	B. Jarvis.
Earl Grey School - - -	A. F. Dunlop.	Standard Bank, Avenue Rd.	J. H. Power & Son, Kingston.
Beardmore Building - - -	H. C. Stone.	Physics Bldg., Toronto Uni-	
German Lutheran Church -	R. M. Roden.	versity - - -	Darling & Pearson.
Montreal West Town Hall -	Peden & McLaren.	Ontario Motor Car Co. - -	Smith, Hickman & Grylls.
Tatley's Apartments - - -	A. F. Dunlop.		Detroit, Mich.
Duschesneau Building - -	C. Duford.	Sir Henry Pellatt Estate -	E. J. Lennox.
Magic Apartments - - -	E. Doran.	Western Hospital - - -	E. J. Lennox.
		Bank of Commerce, in all	
		parts of Toronto - - -	Darling & Pearson
		Electrical Development Co.,	
		Niagara Falls, Ont.,	E. J. Lennox.
Carling Building, Ottawa -	C. P. Meredith.		

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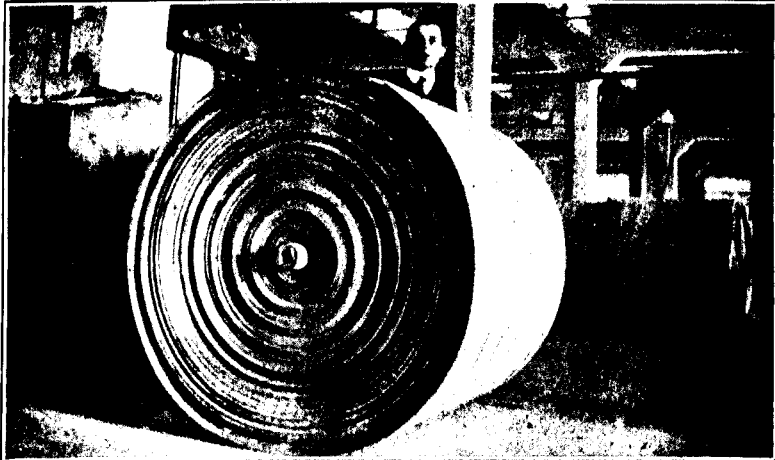
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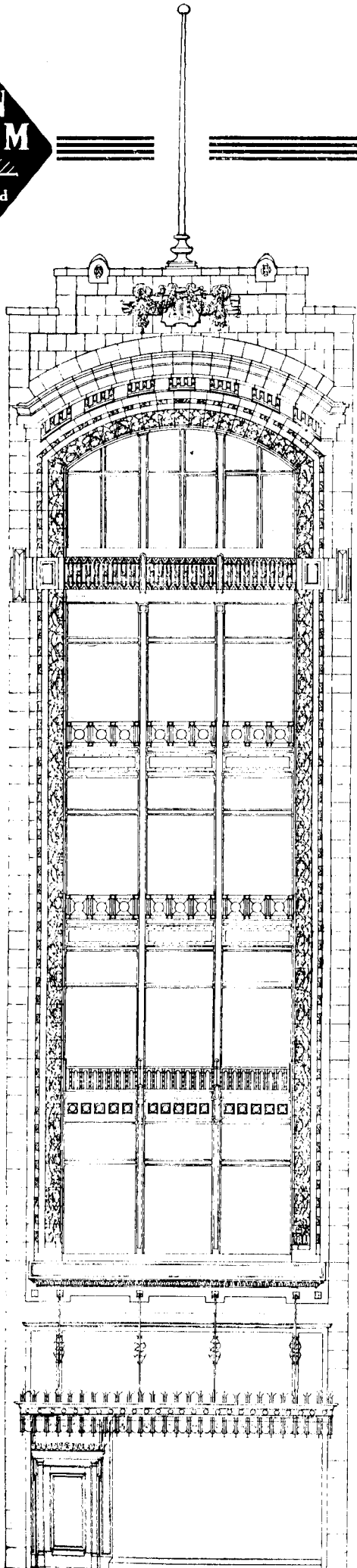
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This building will not burn down, thereby throwing the owners out of business until new premises are secured. This is by all odds the best kind of insurance. Its structural members will not weaken by rust or decay, but will grow stronger year by year. Its maintenance and insurance costs will be the minimum.

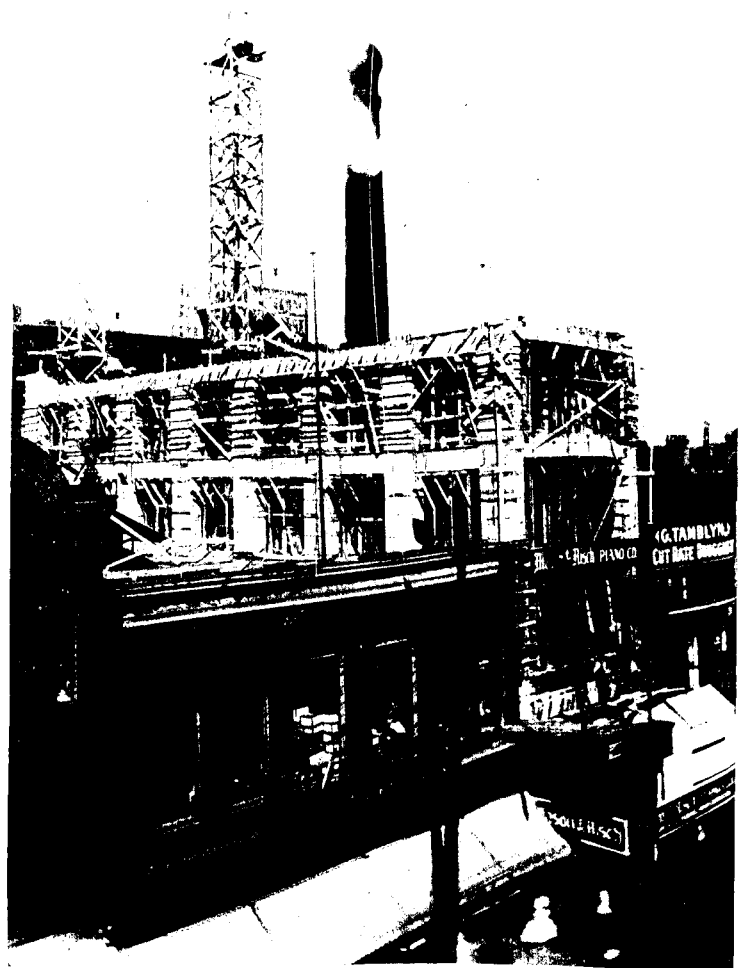
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No confusion, but a rapid, steady advancement to a preconceived end, because there is a KAHN SYSTEM product for every requirement of a modern, reinforced concrete building—KAHN TRUSSED BARS—CUP BARS—HY-RIB—RIB METAL—WATER-PROOFING PASTE—all these products were used in this building.

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## TRUSSED CONCRETE STEEL

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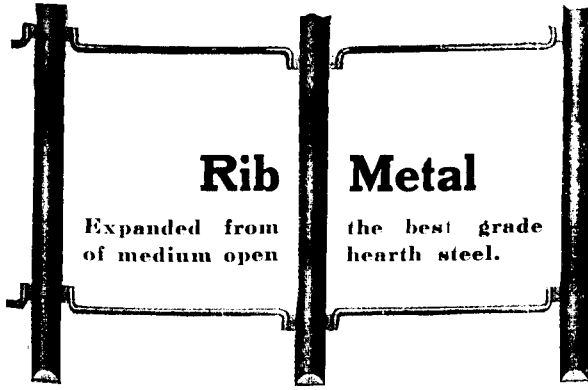
Front Elevation of Mason & Risch Piano Warehouse, 230 Yonge Street, Toronto. Messrs. Bond & Smith, Architects. Bishop Construction Co., Contractors.



# SYSTEM

**KAHN  
SYSTEM**

Reinforced  
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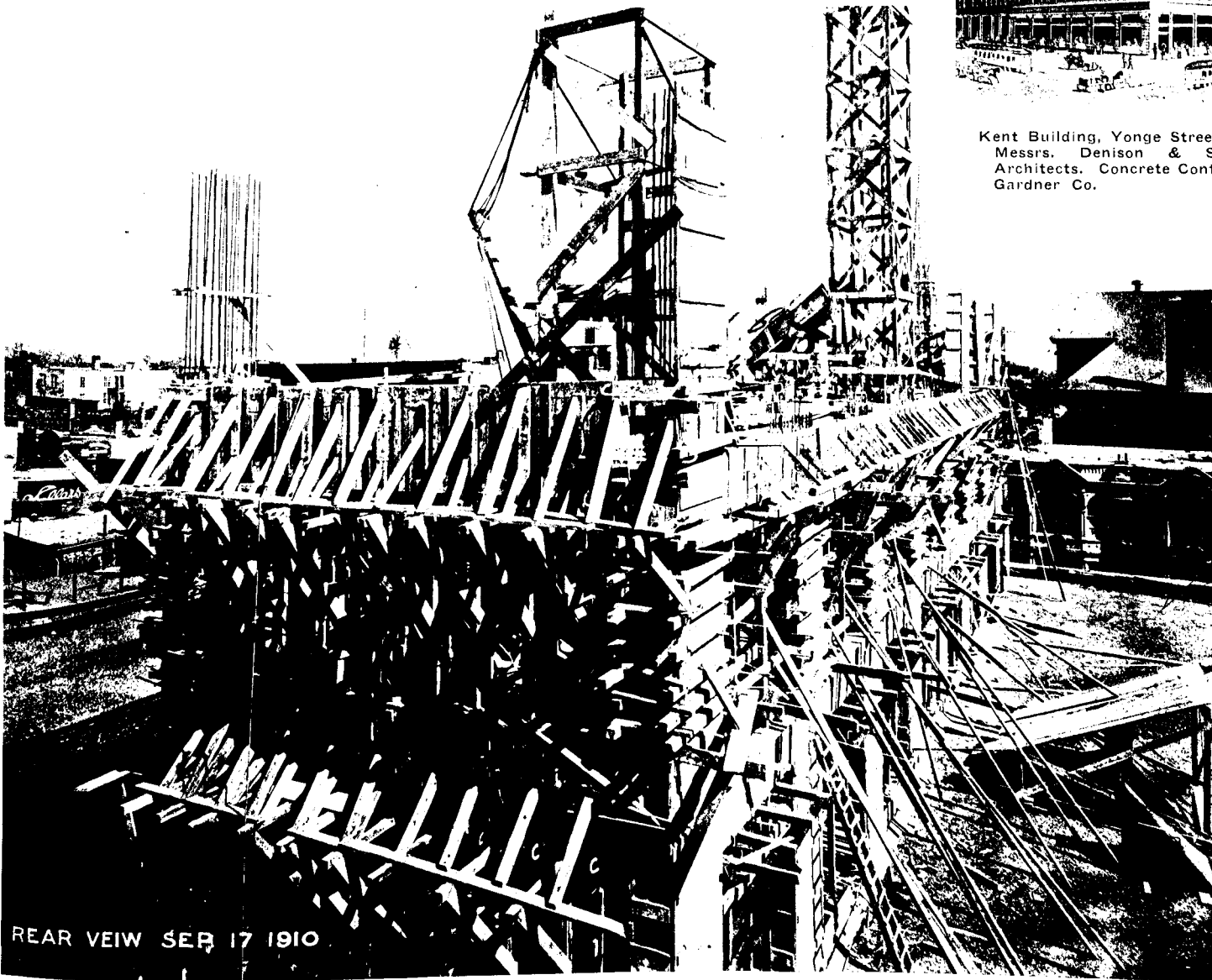
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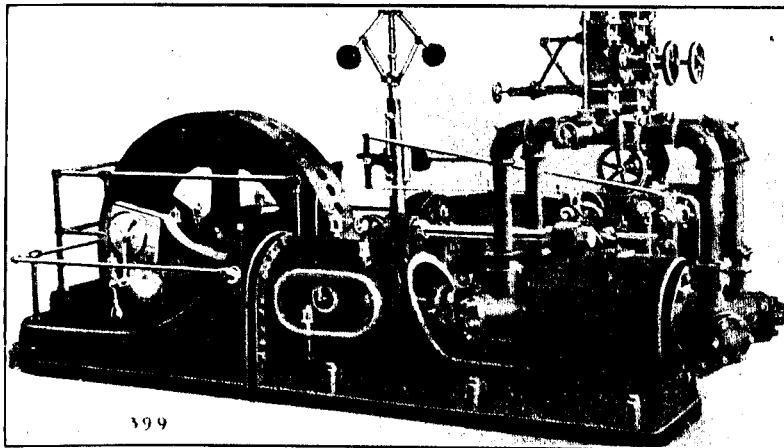
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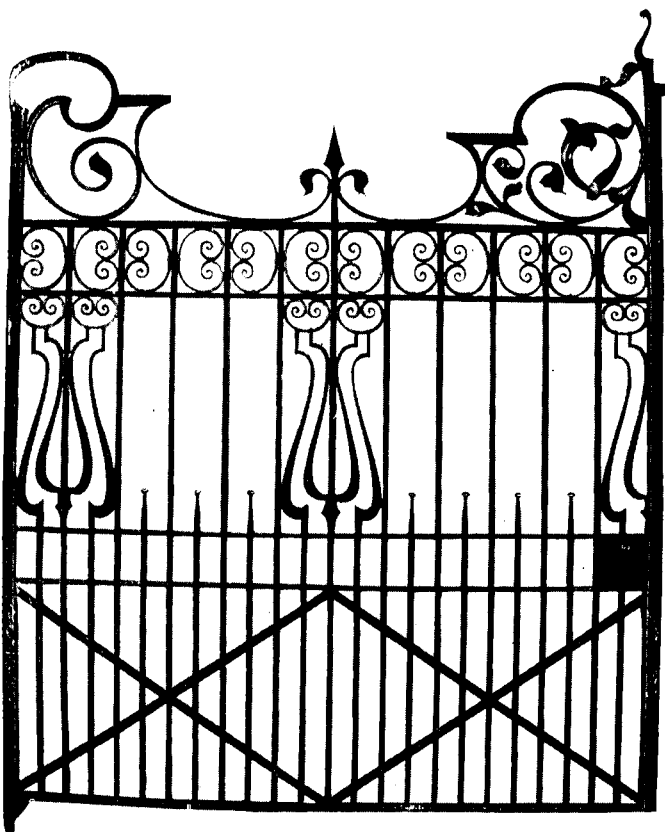
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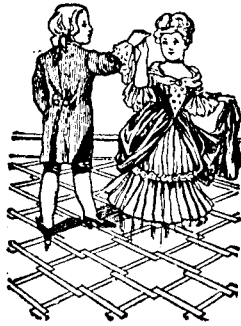
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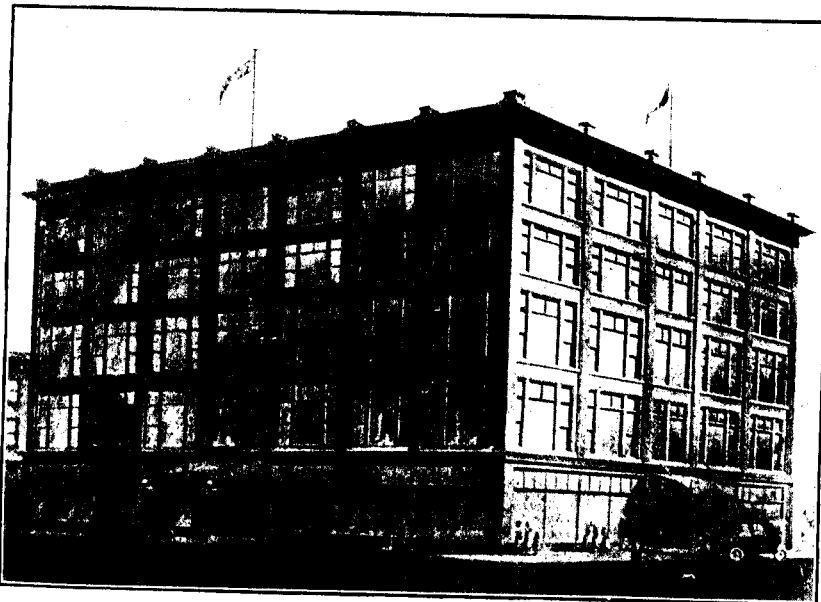
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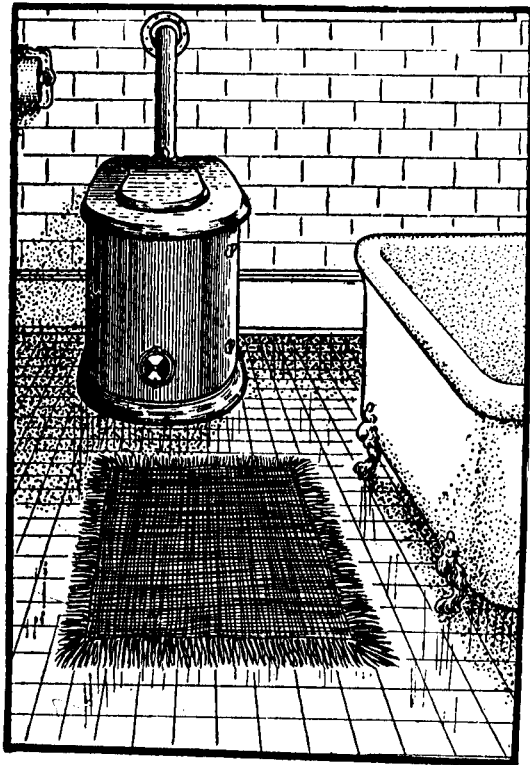
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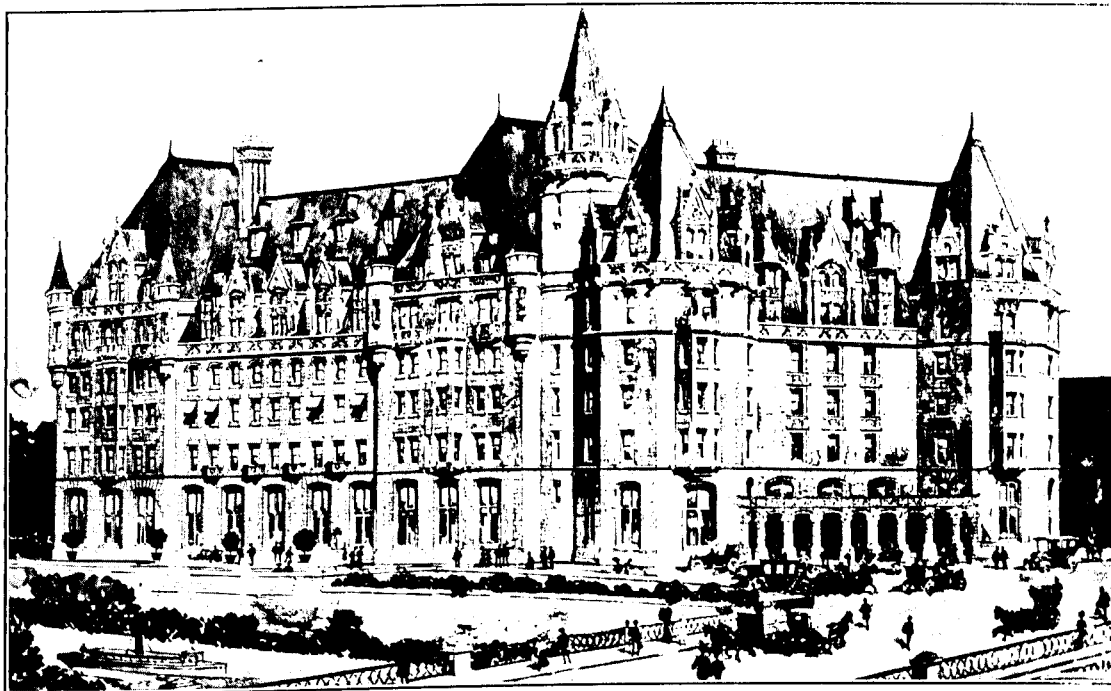
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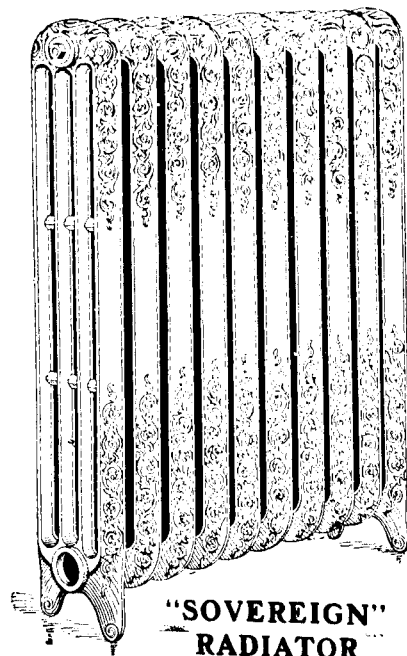
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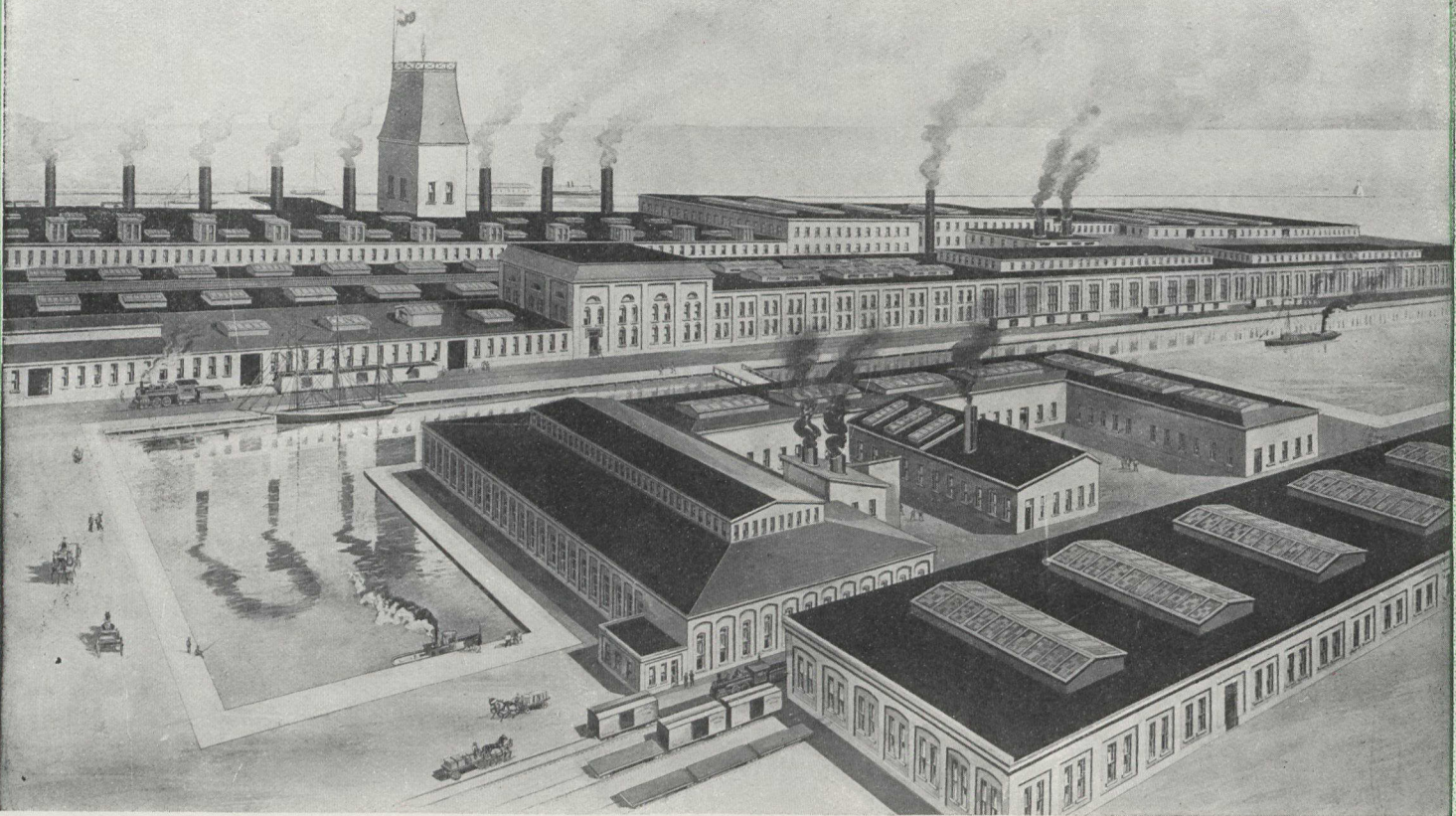




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# CONSTRUCTION

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



Vol. 4

TORONTO, DECEMBER, 1910.

No. 1

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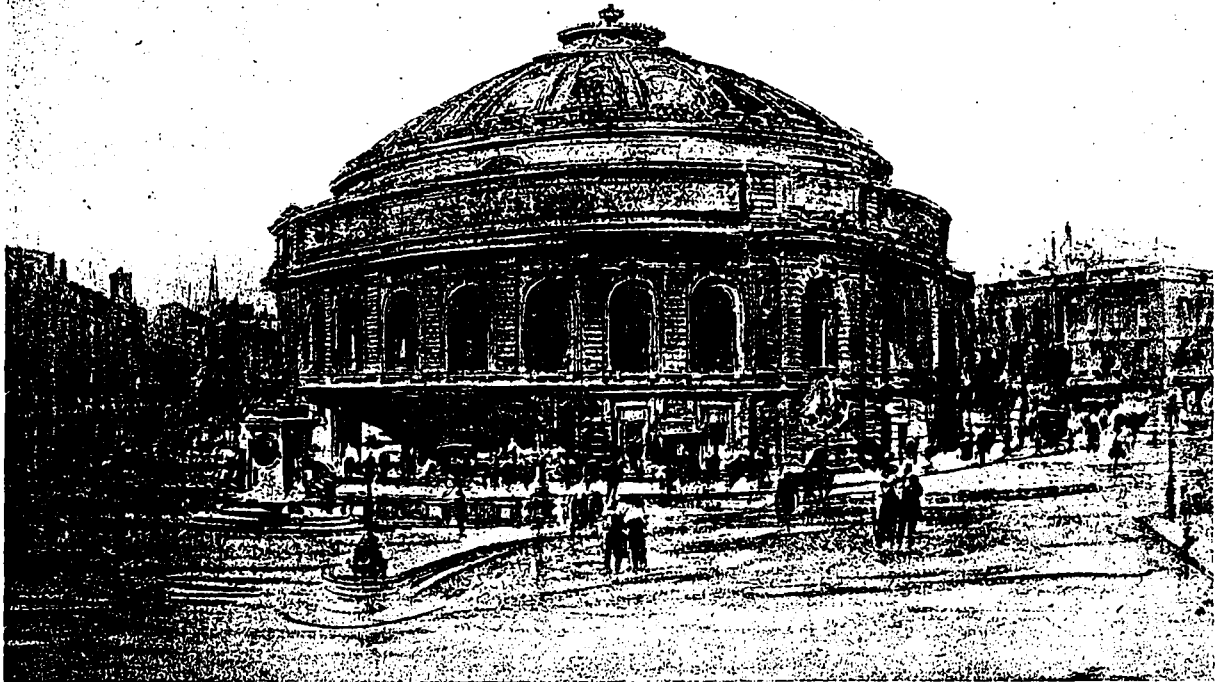
Saturday Night Building

TORONTO

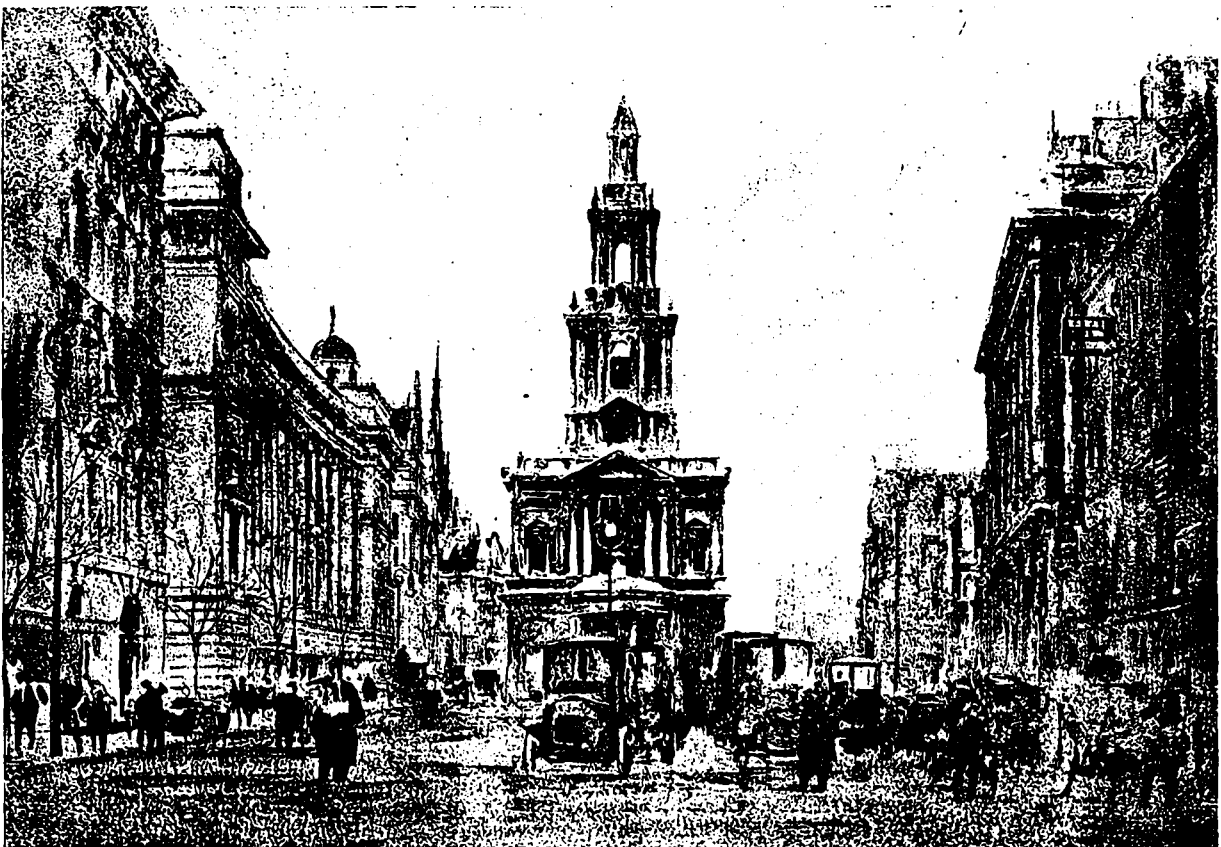
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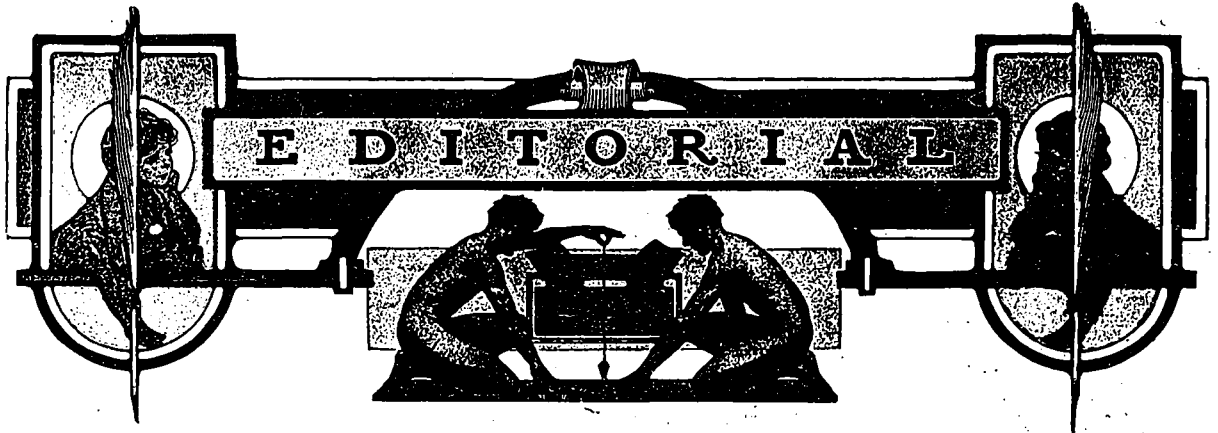
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Drawing by Mr. W. Walcot, Showing Proposals of the Further Strand Improvement Committee. Exhibited at the International Town Planning Conference. (See Page 49.)



## Building Returns for October—Volume of Work in Eighteen Important Centres 89 Per Cent. Greater Than That Undertaken in Same Month Last Year.

IT IS QUITE EVIDENT from the extent of operations that are now being carried on that the lateness of the season has had but little effect on building activities as far as Canada is concerned. While the total investment possibly does not equal that attained in certain of the spring and summer months, no similar period in the past has witnessed in general a more marked and consistent development.

In the eighteen cities reporting to CONSTRUCTION for October, the total aggregate for permits issued amounted to \$8,638,269, as compared with \$4,570,506 in the same month of last year. But three decreases in all are noted, and in two of these cases the loss (less than one per cent.) is so infinitely small as to be hardly worth while taking into consideration. On the whole, the country marched forward at a most substantial clip. Toronto's total in itself, which approximates the three million mark, and is the grand individual monthly total for the year, reflects an expansion that is little short of marvellous; but at that, considering the size of the two cities, it is hardly more remarkable than the showing made at Vancouver, where work amounting to \$1,286,955 was undertaken as against \$507,615 in the month of October, 1909.

Aside from Peterboro's loss of 11 per cent., the greatest decrease noted, and which in itself, considering the comparative amounts, is not of very serious proportions, all points in Ontario progressed in the most gratifying manner. Ottawa reversed the less favorable condition existing in the two previous months by recording an investment of \$438,925, equivalent to a gain of 28 per cent.; while Hamilton, with a like increase, issued permits aggregating in value to \$318,330. Fort William also topped its corresponding figures by an advancement of 8 per cent., and Kingston, which does not submit comparative figures, reports activities to the extent of \$23,317. Port Arthur, which was practically dormant during this month last year, registers an increase of 731 per cent., the largest proportionate gain in the list. Other gains noted are: Windsor, 82 per cent.; Berlin, 43 per cent.; and London, 2 per cent.

In the western section of the Dominion, the strides made exceeded all expectations. Although Winnipeg failed by a fraction of equalling her previous figures for the month, permits were issued to the extent of \$530,150, which is an excellent showing, in view of the heavy months immediately preceding. Calgary experienced a marked state of activity as is evidenced by her total of \$568,290, which represents a gain of 40 per cent., while Victoria and Regina are ahead by 18 and 376 per cent. respectively, the figures in the latter cases amounting to \$247,975, as against \$52,080 last year.

Montreal's great total of \$1,907,440 is the second largest amount noted, and represents an investment of \$1,278,795 more than was made on the same month last year. These figures reflect a tremendous growth, and especially so when one takes into account that at this season of the year considerable work is abandoned owing to uncertain weather conditions. St. John also records an advance, a gain of 149 per cent; although Sydney, in the same section, is a trifle behind her corresponding amount.

Reports from various other points throughout the country indicate an activity equally as pronounced as that shown by the cities included in the list, but in the other cases the respective totals for the month are not available. The prospects in every respect are anything but discouraging, and it looks very much as though the building fraternity in general will find much to do during the winter season.

	Permits for October, 1910.	Permits for October, 1909.	Increase, per cent.	Decrease, per cent.
Berlin, Ont. ....	\$14,300	\$10,000	43.00	.....
Calgary, Alta. ....	568,290	403,050	40.99	.....
Fort William, Ont. ....	95,155	88,050	8.07	.....
Hamilton, Ont. ....	318,330	247,350	28.69	.....
Kingston, Ont. ....	23,317	.....	.....	.....
London, Ont. ....	30,493	29,890	2.05	.....
Montreal, Ont. ....	1,907,440	628,645	203.42	.....
Ottawa, Ont. ....	438,925	341,150	28.66	.....
Peterborough, Ont. ....	14,700	16,691	.....	11.93
Port Arthur, Ont. ....	29,090	3,500	731.14	.....
Regina, Sask. ....	247,975	52,080	376.14	.....
St. John, N.B. ....	59,600	23,900	149.37	.....
Sydney, N.S. ....	21,836	22,050	.....	.97
Toronto, Ont. ....	2,914,980	1,840,355	89.24	.....
Vancouver, B.C. ....	1,286,995	507,615	153.53	.....
Victoria, B.C. ....	124,375	104,840	18.63	.....
Windsor, Ont. ....	35,635	19,500	82.74	.....
Winnipeg, Man. ....	530,150	531,850	.....	.32
	\$8,638,269	\$4,570,506	88.89	.....

## Dangerous Juggling of Facts—Toronto "Daily" gives Undue Prominence to a Ridiculous News Item Under Caption of "Building Materials Scarce."

THE CUB REPORTER on the daily newspaper every once in a while runs "amuck," but usually the news editor screws down the safety valve when it comes to reporting an important news item that is given prominent space on the front page.

In a recent issue of the *Toronto Star*, an article, under a double column caption, "Building Material Scarce," was published on its front page, and for a misstatement of facts and pure nonsensical inaccuracies (if it were not that its publication might have a tendency to affect one of our most important industries, "building construction") it would appear almost humorous. It occurs to us that a large daily paper, before giving space to a news item concerning so important an industry, would

delegate the reporting of it to some man who knew something about that which he was writing, unless the article was submitted by an exceedingly shrewd publicity man for the firm erecting the building specifically discussed, who was bright enough to work up what apparently looked like a good news item for the purpose of securing a reading notice for his firm on the front page of the paper in question.

The article says in part:

"The building contractor is one of the most worried men in the city of Toronto to-day. From every point of view he is up against it. Supplies are hard to obtain. . . . Those who are under contract to have their work finished in a certain time limit are finding themselves compelled to pay bonuses in order to secure delivery of their supplies. In other cases even bonuses cannot hurry things up. . . .

"The shortage exists in cement, crushed stone, lumber, bricks, plumbers' supplies, and other minor items. The crushed stone, great quantities of which are now used in the reinforced concrete structures, comes from all parts of the country. . . .

"Canadian manufacturers have been unable to supply the demand for cement, and some has had to be imported. In view of the great demand the manufacturers or the agents are sending along any old thing that comes to hand, and the result is that the architect or conscientious contractor has to watch particularly every bag put into the building.

"One of those who has been held up in this way is Contractor McLeod, who is in charge of the Hoberlin building at the corner of Yonge and Richmond streets. He is one of those unfortunates having to pay bonuses in order to secure delivery of supplies and having great difficulty in securing the proper qualities of cement.

"Just what quantities of cement and crushed stone are needed in a modern building can be indicated by this building. It is to be a steel structure on cement foundations. The basement will be twelve feet below the sidewalk, but below this again there are thirty-seven pier holes, each 34 feet deep and four feet square. These holes will be filled with concrete, which will support the foundations. About 10,000 barrels of cement will be required and several carloads of crushed stone. . . ."

With regard to the shortage that it is stated exists in cement, crushed stone, lumber, brick, plumbers' supplies and other minor articles, we would say that we do not know of the existence of such a shortage. Every large building contract that has been executed in the city of Toronto during the past year has been carried out on schedule time, and if a man really wants a quantity of any one of the materials mentioned above, there should be absolutely no difficulty in obtaining it, providing he can meet the terms of the supply dealer.

With regard to cement, Mr. F. P. Jones, general manager of the Canada Cement Co., says as follows:

"I wish to advise that as far as cement is concerned the article that appeared in The Toronto Star is entirely wrong. At no time this year have we had less than 325,000 barrels of cement in stock, and the only delay that any of our customers have been subject to has been caused by the shortage of cars. I might further add that at the present time we have over 400,000 barrels of cement in stock, and are producing more than we can get orders for, and will be forced to carry more than this quantity over from this year into next year.

"In addition to this I wish to state that the production has been so much in excess of demand that during the last year we have not been able to operate two of our mills, one situated at Belleville, Ont., and the other situated at Lakefield, Ont., and the mills we did operate were not operated to their full capacity owing to the insufficient demand.

"As to the quality, if you will refer to any of the large users who have used 'Canada' cement, I think you will find that the quality this year has been better than it ever was before, and is certainly equal to the quality of any cement purchased in Canada or elsewhere at any time."

With reference to crushed stone, we would say that a large number of concrete jobs have been carried out in Toronto during the past season, and we have not as yet heard of any extraordinary difficulty in obtaining quantities of this material.

We have not as yet heard of a scarcity in lumber. We are free to admit that stock brick has been rather scarce, but this has not had a tendency to affect large jobs. Manufacturers have been quite equal to the demand for brick on their larger contracts.

With regard to plumbers' supplies, we know that this has been truly a busy season, and the plumbing in some of the buildings might have been delayed to some extent, but this is not on account of the shortage of supplies. It is due merely to the fact that contractors have been unable to get all the journeymen they required to carry out their contracts.

We don't know why the contractor on this particular

job had to pay bonuses, and may say that this is an unusual procedure with contractors on large buildings.

In the last two paragraphs, however, in which a very elaborate description of this large prepossessing building is given, the object of the whole item seems to be apparent. In other words, in order to get the description of this great building on the front page of a daily paper, it seems it was found either necessary or expedient to work up a sensational news item around it. As a sample of the inaccuracies of the statements in this article we would point out, that it is stated that about 10,000 barrels of cement will be required on this job, while we are informed that the job will not require more than 600 barrels.

Before a daily paper enters into a discussion of matters of vital importance in an industry that is so important in every large growing centre in the Dominion, it would seem reasonable that they would secure their information from some authentic source. Nothing can militate against the continued activity in building operations more than the creation of the erroneous impression that materials are unduly high in price, hard to secure, of an inferior quality, and above all, that to finish his building in reasonable time an owner or contractor is obliged to bonus the supply dealer.

## Reduction in Price of Cement—Both Cement Merger and Independent Companies Announce an Average Reduction of 10 Cents a Barrel all over Canada.

THAT THE MERGING of the cement interests in Canada has operated for the benefit of the consumer and contractor rather than to their disadvantage is shown by the fact that an announcement has been made by both the Merger and the Independent Companies of a reduction in the price of cement of from five to fifteen cents per barrel, making an average reduction of ten cents a barrel all over Canada.

As was pointed out in these columns some months ago, the present conduct of the Cement Merger in Canada has served to work great economies in sales, operation and freights. The Independent Companies, through having arranged for a central sales office, have also worked big economies. As to whom the credit should be given for the reduction of prices is of little interest to the consumer; the fact is that he buys his cement to-day at from five to fifteen cents per barrel cheaper than he did last year. The cement interests are evidently working upon the broad principle that it is better to increase the consumption of cement, through selling it at a reasonably fair price, than to curtail its consumption by attempting to unduly raise prices, thereby giving the public the impression that a cement monopoly exists in Canada. Both the Independent and the Merged interests are capable of producing at least 25 per cent. more cement than is now consumed in Canada, and it is this increased consumption of 25 per cent. that it is evidently their desire to create.

## Some Interesting Correspondence Between the R.A.I.C. and the Minister of Public Works, Relative to the Ontario Government House Competition.

UNDER THE HEADING "Extraordinary Conditions of Ontario Government House Competition," an editorial appeared in the November issue of CONSTRUCTION in which the inconsistencies in the Government's programme, together with their unfair treatment of the architectural profession generally, especially those who consented to strain a point and enter the competition, were commented upon. In the course of the article we stated: "This unfortunate condition exists only because Canadian architects are not sufficiently posi-

tive in asserting their rights as professional men." We are in receipt of a letter from Mr. F. S. Baker, President of the Royal Architectural Institute of Canada, in which he disagrees with us on this point, declaring that "architects invariably go to the limit of good taste in contending for their rights," and to strengthen his contention in this connection, Mr. Baker has handed us the correspondence that passed between the Royal Architectural Institute of Canada and the Government, relative to this competition. A perusal of these letters shows conclusively that the R.A.I.C., on behalf of the architectural profession of Canada, certainly did take a very strong, though justified stand in this matter. However, we are under the impression that Mr. Baker misunderstood the exact meaning of our statement, or at least, the meaning that it was intended to convey, for as stated in the above mentioned editorial, "conditions of this kind will reoccur just so long as architects see fit to enter into competitions. the conditions of which are unfair to themselves, the profession and the community generally." our contention is that individual architects, who enter such competitions and submit to unfavorable conditions as embodied in a programme, fail to assert their rights as professional men. We know that the Royal Architectural Institute of Canada, the Ontario Association of Architects, the Province of Quebec Association of Architects, and the Manitoba Association of Architects, have all, on several occasions as bodies, made strenuous fights for the rights of the profession, but it is the individual architect who, though he realizes that the conditions of a certain programme are unfair to him, consents to enter such a competition, and there failing to assert his professional rights.

Mr. Baker's letter to CONSTRUCTION, which we publish below, is most interesting, and the correspondence that passed between him as president of the R.A.I.C. and the Hon. Dr. Reaume, Minister of Public Works, is further interesting, in that it shows the feeble conception of the rights and duties of the architectural profession by the average Government official.

Toronto, June 1st, 1910.

Dear Sir:

In reading your editorial regarding Ontario Government House Competition, one or two points occurred to me as requiring explanation.

It is a common thing for the public outside of the profession of architecture, to feel that architects individually and collectively, are not as you say, "sufficiently positive in asserting their rights as professional men," but I think you are quite wrong, because architects invariably go to the limit of good taste in contending for their rights; you see it generally is, as in this case, the public who suffer and not the architects, because one does not lose or miss anything one never had, consequently the architects are not losers through the policy which the Government has chosen to adopt. The public is the real loser as they undoubtedly miss the opportunity of being able to select an architect who would produce a satisfactory solution of the problem from every point of view.

Neither can architects be expected to educate Governments or the public as to the proper procedure in selecting an architect for an important structure; certain courses of study and practice have defined very clearly the architect of culture as compared with the uneducated man who hangs out his shingle and as far as the public can see, is as good as any other, though he may be an architect in name only. You will never find the true architect objecting in a case like this, but you may find him laughing up his sleeve. He finds plenty to do in this country without wasting time in entering competitions, the conditions of which are as ridiculous as those you publish.

If the Government chooses to employ an architect who works for about one sixth of the earnings of a properly trained architect, to design a residence for the first gentleman of the Province, a residence which should

surely show the taste and culture of the people of the Province, they will simply have to sleep in the bed which they have prepared for themselves. But I consider it is the duty of architects who *know*, to draw the attention of the authorities, in a case like this, to what should be done, and that your subscribers may know that a reasonable effort was made in this case to induce the Government to steer a straight course, I have the pleasure to enclose the correspondence which passed between the Department of Public Works and the Royal Architectural Institute of Canada. I am,

Yours very truly,  
F. S. BAKER,  
President R.A.I.C.

To Editor, CONSTRUCTION.

Saturday Night Bldg., Toronto.

In Mr. Baker's letter dated June 1 he goes into detail with Hon. Dr. Reaume, and explains quite clearly the position of the architectural profession as regards competitions.

June 1st, 1910.

Dear Sir:

In my capacity as President of the Royal Architectural Institute of Canada, my attention has been drawn to the "General Conditions for the Guidance of Architects in Preparing Competitive Designs for a New Residence for the Lieutenant-Governor of the Province of Ontario," as recently issued by your department.

As printed the conditions are, of course, such that no self-respecting architect could conform to, inasmuch as they do not provide that a board of professional assessors will be appointed to select the designs, and further that the conditions do not guarantee to the author of the winning design the commission of carrying out the work at the regular commission.

In the face of the printed conditions, it is difficult to understand the object of your department in advertising for competitive plans in such a case. If the Government were to ask an individual architect to prepare preliminary plans for a mansion to cost \$225,000, the minimum commission for such preliminary drawings, without any further work, would be \$2,700,000, and if I understand the conditions correctly, the Government is asking for this information for \$1,000.00. Surely the Department does not suppose that any educated architect capable of building a gentleman's mansion would enter a competition under those conditions, or under a condition where his preliminary studies, which would naturally express his best effort and only require mechanical development, might be carried out by some one else, for instance, the architectural staff of the Department.

At this moment, as you are no doubt aware, the architects of Canada, from Halifax to Vancouver, are protesting to the Federal Government the unfairness of applying this principle to the erection of Departmental buildings at Ottawa, for which a competition was recently held and under which the architects who competed naturally supposed that the winning author would be commissioned to carry out the work.

If the profession of architecture in Canada is not to look for support to the Government, Provincial and Federal, where is it to be found? And if proper attention is not paid to the development of architecture in this country, what will the future appearance of the country be?

With this I send you a copy of the Year Book of the Royal Architectural Institute, which contains on pages 22 to 24 the regulations for the conducting of architectural competitions approved by the Institute, and I trust that your Department will find it possible to amend the printed conditions in accordance with these.

This letter is not written in a critical sense at all, our effort is to improve the architecture of Canada. Government support is essential to our success in this direction. All advanced countries have abandoned the idea of having important buildings designed and carried out by departments. Architects in private practice are employed and are always ready to collaborate with the chief architect of the Department in the matter of supervision of the construction. A Government house above all buildings demands a design and plan indicating good taste and culture, and I feel sure that on further consideration you will decide to supplement the printed conditions by adding the matter contained in the second paragraph of this letter, which on behalf of the Institute, I assure you is essential to the success of your otherwise most interesting competition.

Yours truly,  
F. S. Baker,  
President.

Hon. J. O. Reaume,  
Minister of Public Works,  
Parliament Buildings,  
Toronto.

The following is the reply to Mr. Baker's communication by the Hon. Dr. Reaume, in which the Minister of Public Works shows very plainly that his conception of the proper conduct of architectural competitions is sadly in error.

He states that it is for the Government to decide the conditions of a competition, and that the architects may compete or not compete just as they choose. He further intimates that the plans are not to be judged upon their

architectural merits alone, but that "the prize will be given to the one that is most satisfactory to the Department." He does not state whether he means to the architect most satisfactory to the Department, or the plan most satisfactory to the Department. Again, it will be noted that he does not give any assurance that competent advice, as the profession would view it, would be obtained to aid the Government in the selection of the designs to be awarded the prizes. However, the last paragraph of Dr. Reaume's letter appears to be designed to give a half-hearted assurance, that the author of the winning design would be given the commission to carry out the work.

Department of Public Works,  
Minister's Office,

Toronto, June 3rd, 1910.

Dear Sir:

I have received your letter of the 1st instant.

I regret to observe the language used by you to the effect that "the conditions are, of course, such that no self-respecting architect could conform to," etc., etc.

The conditions are for the Government to formulate, and, of course, architects and other persons interested in them can govern themselves according to their best judgment.

You are evidently under a misapprehension as to what the prize of one thousand dollars means. It is not necessarily a prize for the best plan, architecturally speaking. At least, if I make myself clear, something more than abstract architectural merit will be required. Having regard to the structure we desire to erect, etc., etc., the prize will be given to the one most satisfactory to the Department, and in coming to a conclusion the Department will take care to procure and receive information from thoroughly competent sources.

I may also say that, as will appear from what I have already stated, the author of the winning design will in all probability receive the commission of carrying out the work.

Yours very truly,  
J. O. Reaume.

Mr. F. S. Baker,  
Royal Architectural Institute,  
Toronto, Ont.

The following is a communication addressed to Sir James Whitney, relative to the matter, by Mr. F. S. Baker, to which, it may be said, no reply was made:

June 1st, 1910.

Dear Sir James:

I have the pleasure to forward to you a copy of an official letter which the Royal Architectural Institute has asked me to write to the Honorable Mr. Reaume, in connection with the proposed competition for the new Government house.

I should be very glad indeed to have an opportunity to discuss this with you and the Honorable Minister, if your time will permit.

Yours truly,  
F. S. Baker,  
President.

Sir James Whitney,  
Parliament Buildings,  
Toronto.

On June 10 Mr. Baker wrote to the Hon. Dr. Reaume, after a deputation from the R.A.I.C. and the O.A.A. had waited upon the Department, outlining the four objectional conditions of the competition.

June 10th, 1910.

Dear Sir:

Referring to the interview which you were good enough to arrange this morning with the representatives of the Royal Architectural Institute of Canada and the Ontario Association of Architects, in connection with the conditions of competition recently issued by the Government for a proposed residence for the Lieutenant-Governor, in Toronto, this joint deputation begs to submit, on behalf of Canadian architects, that it is desirable to supplement the conditions issued:

1st. By extending the time for receiving the designs to the 1st of September, 1910.

2nd. By naming now a competent professional assessor, or assessors, to advise the Government in the selection of the designs.

3rd. By making the first prize the commission of carrying out the building, and dividing the \$1,500.00 already offered equally between the three designs judged next in merit.

It will be apparent to you that for a large building of this nature intelligent designs could not be got ready by the 15th of July.

The appointment of professional assessors in competitions for all important buildings is a usual and necessary condition.

That the winning author, provided he is a competent man in every way, should be given the carrying out of the work is also considered essential.

If you wish to consult us regarding the naming of a professional assessor, or assessors, to act with Mr. Heakes in advising the Government, or upon any other point, we will be happy to place our services at your disposal at any time convenient to you.

Yours truly,  
F. S. Baker,  
President.

Hon. J. O. Reaume,  
Minister of Public Works,  
Parliament Buildings,  
Toronto.

The following is Dr. Reaume's communication on June 10, which, we understand, closed the controversy so far as the R.A.I.C. and the Department of Public Works were concerned:

Department of Public Works,  
Minister's Office,

Toronto, June 10th, 1910.

Dear Mr. Baker:

I am in receipt of your communication of even date in which you set out the views of the committee of architects who waited upon me this morning with reference to the Lieutenant-Governor's residence. I note what you state and can only state that this matter will be brought up in council early next week. I will then immediately notify if any changes from the present arrangements are permitted.

Sincerely yours,  
J. O. Reaume.

Mr. F. S. Baker,  
Architect,  
Toronto, Ont.

It is high time that Government officials, who are authorized to expend large sums of money in the erection of public buildings, should commence to realize the importance of having these structures designed by the best architectural brains in the country, to secure which, they must surely understand that their method of procedure must be compatible with the ethics of the architectural profession.

The recent Knox College competition, which was closed a few days ago, was a really good one. The program was ideal, and the designs submitted were, generally speaking, of a very high standard. Some of the best designers in Toronto entered the competition, and the assessors in the competition were all competent men, thoroughly qualified to act in such a capacity. In such competitions the owner, whether a private individual, a corporation or a government, invariably secures the best services of the best designers, because the competing architect is given some assurance that he will be dealt fairly with, and that his designs will be judged on their merits by competent men.

## Announcement in Letter by Frank Miles Day of Position Assumed by American Institute of Architects on the Question of Competition Programs.

WHILE WE HAVE THE MATTER of competitions under discussion, it is well to note the position taken by the American Institute of Architects on this very same subject, and from a letter written by Mr. Frank Miles Day to the *Architectural Record*, it appears that they have encountered in the United States, difficulties very similar to the one outlined in Mr. Baker's letter. It will be noted that the conditions insisted upon by the American Institute of Architects in competition programmes are very similar to, though a slight more exacting than those of our several Canadian architectural organizations. It appears, however, that the American Institute of Architects has adopted a very practical and effective method of enforcing these rules and regulations which follows:

Recent editorials in architectural journals strongly support the present effort of the American Institute of Architects to improve competitions, yet communications and minor notes show, in some cases, such a lack of information that it seems well that some statements on the subject should be made.

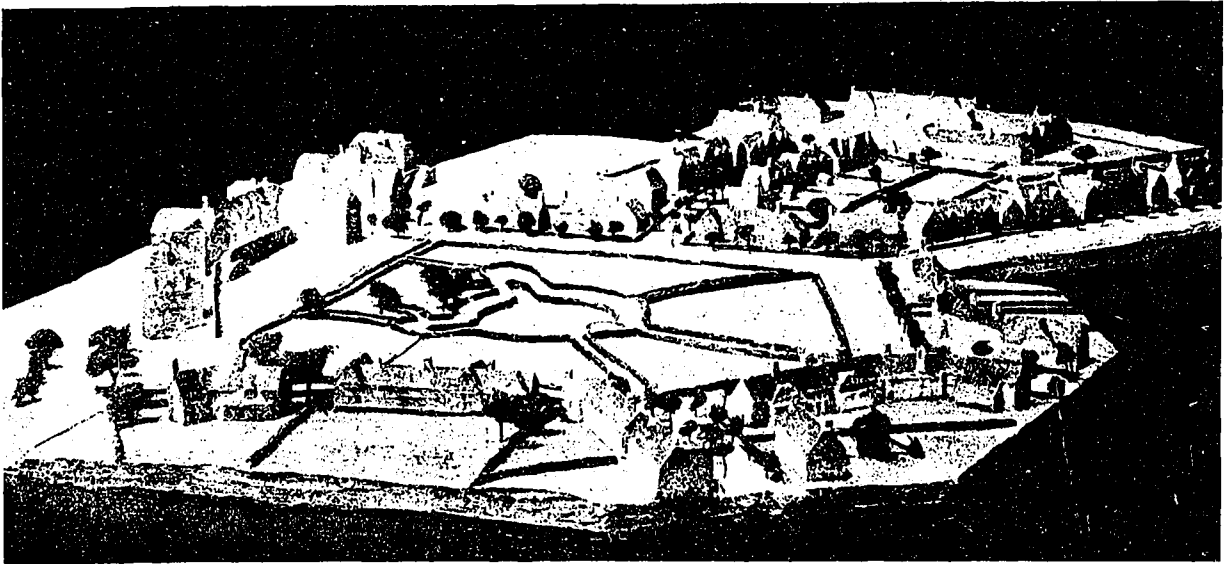
It is obvious that any improvement in the conduct of competitions can take place only as a result of the general enlightenment of the profession and through it of the public. After many years of discussion, the profession appears to have reached substantial agreement as to what are the essentials of a well conducted competition. Without such agreement, the present advanced position of the Institute would be out of the question.

The Institute has made many attempts to inform the public as to the proper conduct of competitions and to dissuade architects from taking part in them except under proper conditions. Its carefully prepared statements, though they had an excellent educational effect, were without other result since they were merely advisory.

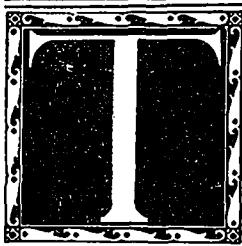
The Institute never has presumed, nor does it now presume, to dictate the owner's course in conducting a competition, but it aims to assist him by advising the adoption of such methods as experience has proved just and wise. But the Institute has

(Concluded on page 89.)





Model of Portion of Hampstead Garden Suburbs.



# THE TOWN PLANNING CONFERENCE AND EXHIBIT

Summary of important event recently held at London, England, under the auspices of the R.I.B.A. Some of the more important papers presented before the Conference.

TO CANADIANS, the town planning movement, which for the past decade has been in evidence in the large continental countries of Europe, and which has been supported not only by architects, artists and engineers, but by municipal authorities as well, is of great importance in our future development. The older countries of the world in Europe have undertaken the solution of this extraordinary problem. They are endeavoring to rectify evils and conditions that have existed for centuries. Germany has already done much in this direction. England also has done a great deal to solve the housing problem as well as promoting the city beautiful idea. In these older countries the expense of changing the plans of old cities is enormous, and the task before these municipalities of widening streets, creating new avenues and cleaning out old tenement districts, is a most difficult, slow and tedious one, fraught with many intricate and gigantic problems.

But, in Canada, we are creating new towns. Our cities that have already been established are only in their infancy, and it seems therefore, that it is only reasonable that not only architects, engineers and municipal officers, but the lay public should profit by the mistakes of these older countries and watch closely the methods now being employed by those that have given this subject much study in the proper planning of their cities and towns. Our new towns and cities should be laid out according to a carefully conceived plan. Our larger cities should at the earliest possible moment undertake to rectify the mistakes that have already been made, and to arrange, so that their future growth would be properly provided for by carefully laid out scientific plans. The evils of the suburban real estate speculator operations are very evident on every side, and the public should see to it that the growth of

their cities in suburban districts is along lines compatible with good town planning.

The Guild of Civic Art in the city of Toronto has done much in this direction. They have been successful in having an Art Commission appointed, and it is to be hoped that in their endeavors to provide plans for a beautiful city in the Toronto of the future, that they will receive the unqualified co operation of every citizen.

One of the greatest events that has yet taken place toward the promotion of the town planning movement was the International Town Planning Conference recently held under the auspices of the Royal Institute of British Architects at London, England. The delegates to this conference came from almost every country in the world, and the papers read, as well as the discussions, proved that there are a large number of brilliant, earnest men giving this great social and economic problem serious thought. Mr. F. S. Baker, president of the Royal Architectural Institute of Canada, was a delegate of this organization to the conference. The following brief account of the conference in general by Mr. Baker, will be of interest to our readers:

Opening with a meeting in the Guild Hall and an inaugural address by the Hon. John Burns, the Town Planning Conference held at London from October 10th to the 15th inclusive, and at which nearly 1,500 members registered, gave expression to the broad steps that are now being taken towards the sociological, hygienic and economic betterment of towns and cities in the more enlightened countries of the world.

Unfortunately the weather, which for the preceding fortnight had been exceedingly fine, broke on the second day of the conference, and interfered with the comfort of those visiting the districts which had been selected as models of their different kinds. Aside from this, how-

ever, the event was held under the most auspicious circumstances.

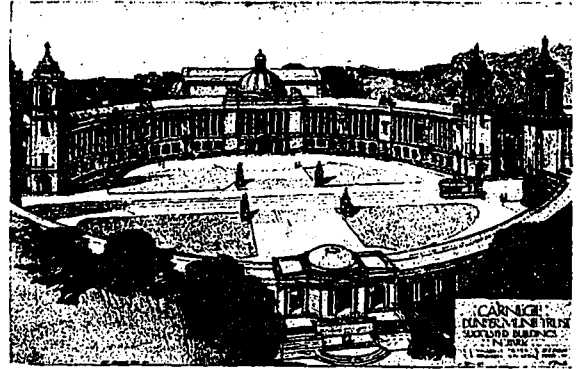
The great success of the conference was due to the enthusiasm of the delegates from nearly all parts of the world. At nearly every meeting the hall was filled and overflow meetings were necessary. The splendid arrangements which had been made by the committee of the Royal Institute of British Architects made it possible to carry out the programme exactly as prearranged. It was notable at this conference that everything came out exactly as was intended.

The exhibition at Burlington House was remarkable because of the very large number of drawings and models exhibited, and was very much appreciated by the large number of visitors, the majority of whom were not members of the conference. There was also a very comprehensive exhibit of maps and plans of London at Guild Hall.

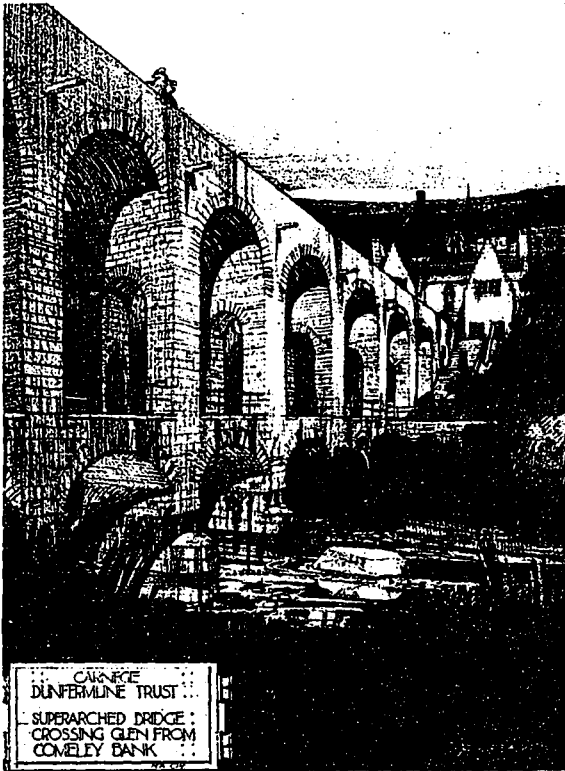
A vast number of interesting and carefully prepared papers were read on various subjects, and as indicated in the programme these have all been recorded, and when

ed States, threw open that most interesting and palatial residence, Dorchester House, to a limited number of the members of the conference, who were invited to an At Home given by the Minister on Thursday afternoon.

On Thursday evening the Lord Mayor and Lady Knill gave a reception to the members of the conference at the Mansion House, which was largely attended. In-



Design by Messrs. C. E. Mallows and T. H. Mawson for Dunfermline. From a Drawing by Robert Atkinson.



CARNegie DUNFERMLINE TRUST  
SUPERARCHED BRIDGE  
CROSSING GLEN FROM COMELEY BANK

Design by Mr. T. H. Mawson for Dunfermline. From a Drawing by Robert Atkinson.

the volume containing all of the proceedings of the conference is published, it will make a notable addition to the works already published on this important subject. I predict for this volume, that the first edition will be out of print in a very short time.

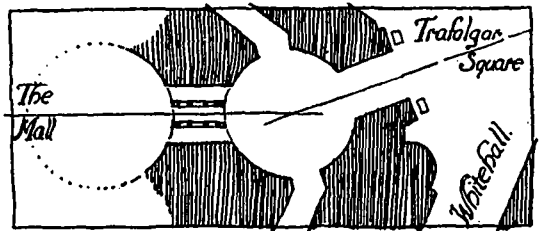
The social side of the conference was extremely interesting and consisted of a conversation given by the Royal Institute of British Architects in their rooms on the evening of the first day; a smoker, also held by the Institute from nine to ten p.m. on Tuesday and Friday evening, both of which were very largely attended and most enjoyable; the conference banquet, which was held on Wednesday evening at the Hotel Cecil, and at which dinner more than 500 ladies and gentlemen were seated, the magnificent banquet hall being well filled, and with the beautiful floral decorations and splendid speeches this banquet was one which will long be remembered.

The Hon. Whitelaw Reid, Ambassador from the Unit-

teresting in itself, this historical old building was made exceedingly attractive by the throngs of gaily dressed people, the beautiful decorations and illuminations, and the charming music.

The art of town planning was undoubtedly advanced a long distance by this conference, and similar meetings held in the future will do much to improve the conditions under which those who have to live in towns exist. The making of beautiful streets, squares, parks and pleasure grounds, the forming of streets, etc., in a way which will give convenience and practicability, and the housing of the artisan in a manner from which he and his family can derive health and strength, rather than the opposite, is now being given close attention throughout the world.

In this new country, where there are at present some two hundred cities in an embryonic state west of Winnipeg, it is for us to benefit by what has taken place at this recent conference, and to bring the standard of our towns and cities up to a point which will not be surpassed by any country in the world. Every town should have its Guild of Art, and every town council should lend its ear to their advice, for town planning is undoubtedly an art, and art is something which only a few people absorb to an extent which permits them to impart it to others, therefore when the man who is a known artist speaks, the layman should listen.



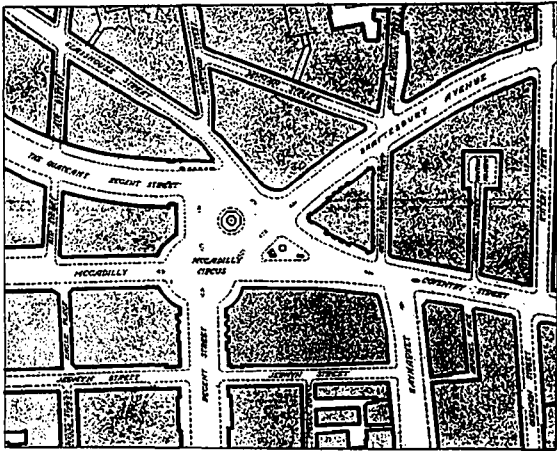
Sketch Plan of Mr. Leonard Stokes' Scheme for Approach to Sir Aston Webb's Plan for the Mall.

In connection herewith we publish, either in whole or in part, a number of papers read at the conference, together with several illustrations of schemes that are being worked out, or proposed, in England, Germany, and the United States, believing that those selected will prove of special interest to Canadian architects and those concerned with the "City Beautiful" movement in Canada.

**Town Planning Bill.**

A sociological reason for carefully planned schemes in connection with the upholding of new centres, and the reconstruction of many of the older districts, was outlined by the Right. Hon. John Burns, author of the Town Planning Act in England, who in following the opening

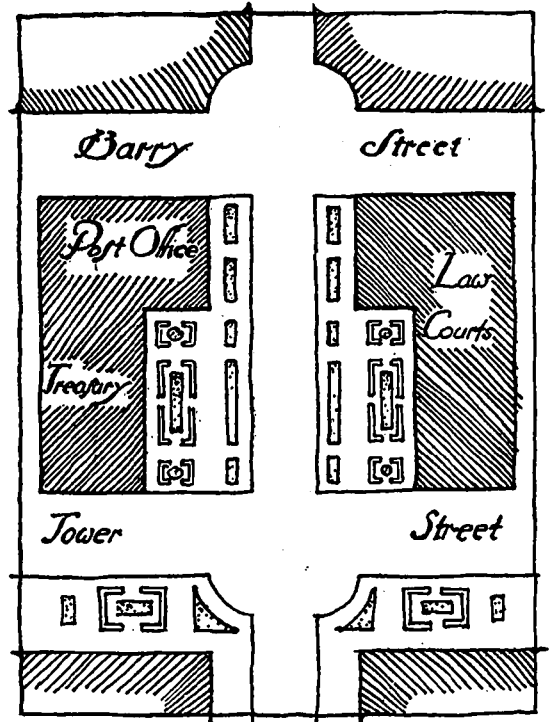
society demanded the demolition of the festering slum and the erection of pleasant towns and dignified and comfortable cities. Was it possible to get what was wanted? A review of what has already been accomplished would seemingly indicate that it was. In England great strides had been made in connection with the town-planning movement—greater strides, considering their ancient difficulties, than any other country in the world. At Bournville, Port Sunlight, Hampstead, and other places could be seen some of the most beautiful domestic architecture that could be found in any part of the world. The upper and middle classes generally were being fairly well provided for by architects, and now the artisan was clamoring for something better than a hovel. He was securing a home at Bournville, Port Sunlight, Tooting, Ealing and many other places at a rent and of a character and a beauty which were not within the reach of the average artisan twenty-five or thirty years ago. The artisan had come forward and said: I want something better than a hovel; I want a home for my children at a modest rent, and of a character and beauty which were not within the reach of the average artisan twenty-five or thirty years



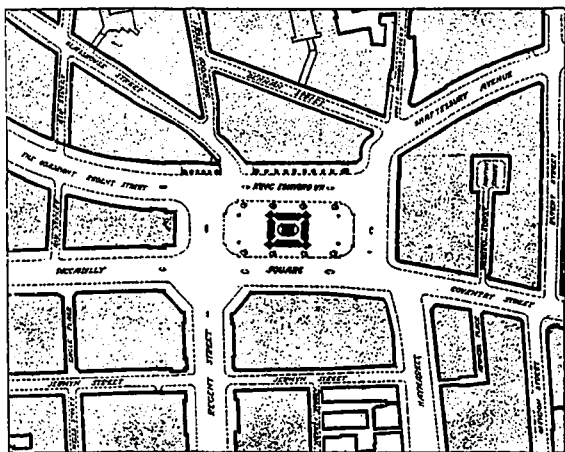
Piccadilly Circus, London: Plan as Existing.

remarks of President Stokes, of the R.I.B.A., delivered the inaugural address at the conference.

People of the poor towns suffered, as a rule, from poverty of spirit as well as lack of means. These dismal spirits were often caused by their squalid surroundings. It was a daily occurrence to see children's character spoiled and their natures stunted by the depressing circumstances under which they lived. The spoiled life and the soiled home in the slatternly street were too often the causes of drink, degradation, loafing, and dependence in many of our large cities. The towns and districts where the money was made ought to be as cheerful as the districts where the money was too often foolishly spent. When a slum vanished a brewery fell and public houses disappeared, and there was a greater reason than architectural symmetry and artistic appearance in a town planning scheme. Fifty per cent. of our total pauperism, and more than 60 per cent. of its total cost, much of our lunacy and debility, and a great deal of our crime were due to sickness. Disease could not be fought and exter-



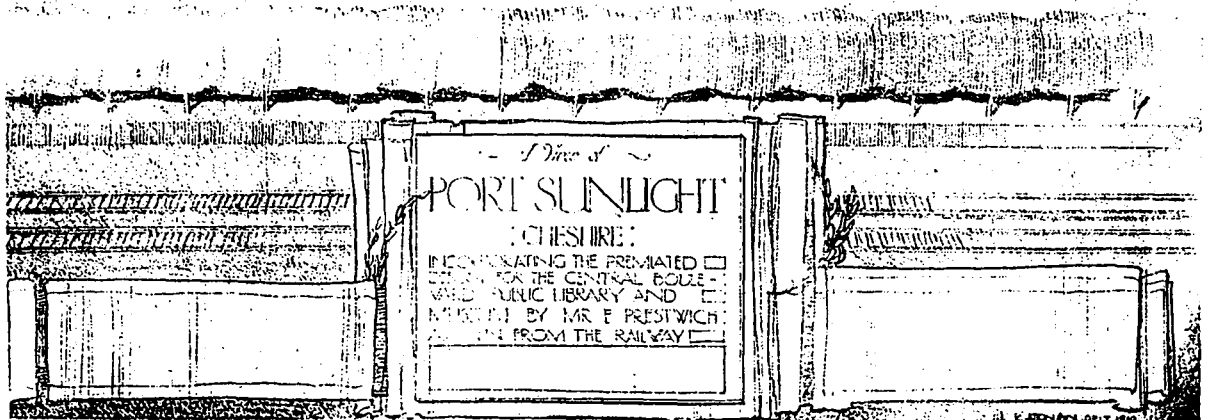
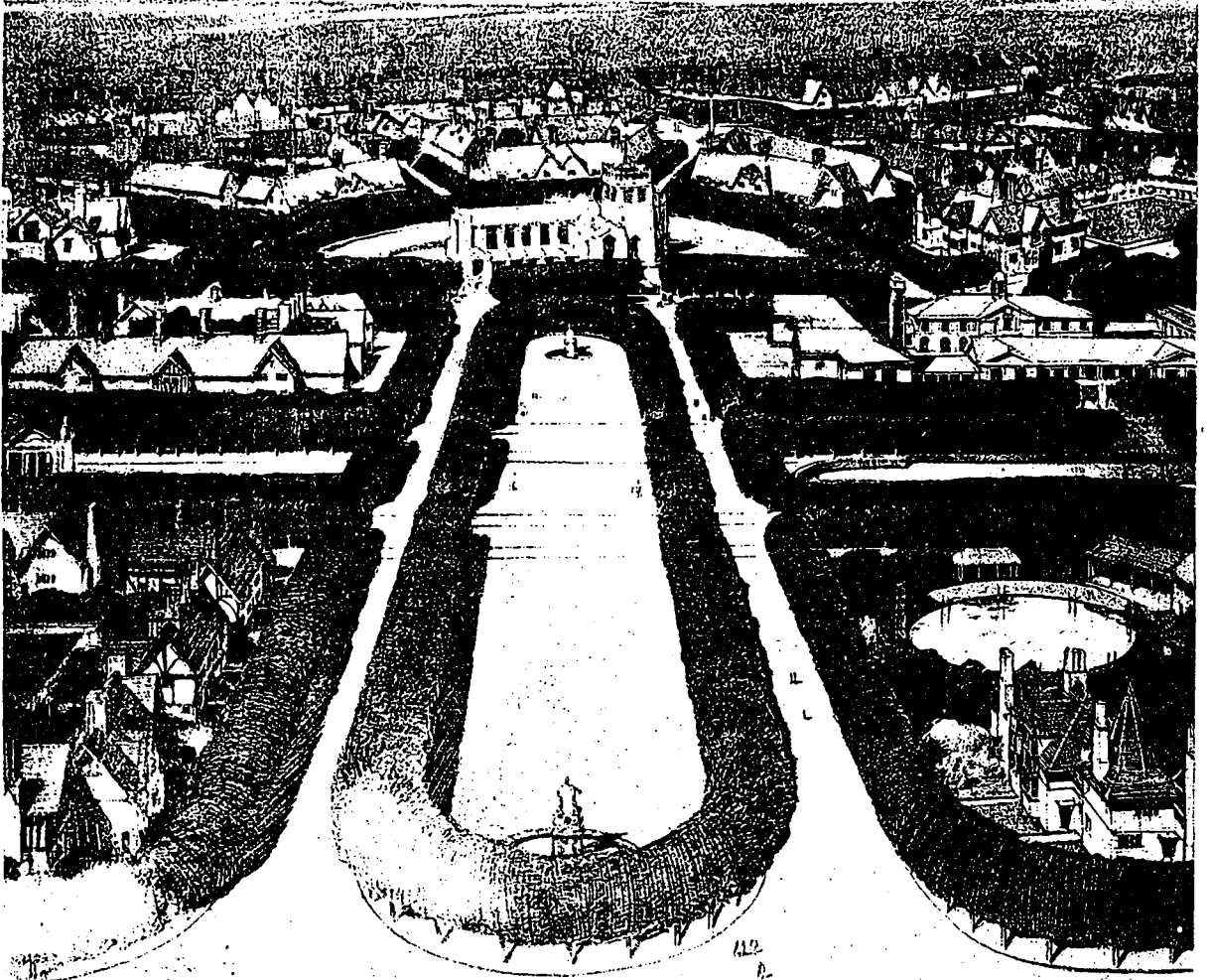
Sketch Plan for Government Buildings, Jamaica.



Piccadilly Circus, London: Plan as Proposed.

minated unless we let in sun and air into our houses and streets. So long as casual labor lived in squalid courts, ugly dwellings, and rotten tenements the country would continue to turn out nerveless mannikins instead of enduring men, and motherhood, childhood, the race, and

ago. It was necessary to consider the great mass of mankind, the hewers of wood and drawers of water, those who are lower even than the artisan, the unskilled and casual laborer; and the responsibility rests upon us to see that the laborer was provided with infinitely better housing and street accommodation than he now secured. The great town planning movement must not end in a few cities getting all the talent, most of the money, and the best of the improvements. The East-end wanted "West-ending" in its reconstruction. Wigan had got to be taken in hand as well as Westminster. The Potteries as well as London, and Bermondsey needed it more than Belgravia. For reasons industrial, social, commercial, and Imperial, town planning must go hand in hand with better housing, wider roads, higher wages, and increasing sobriety. Town planning was very belated, but it was not too late. The gradual reconstruction of a city was a very serious matter for all. If planning was neglected at the beginning or badly done through timidity or lack of imagination, it placed a burden for 50 or 100 years upon progress, and paid seven or eight times over for their



Designed for Central Boulevard, Public Library and Museum, Port Sunlight. From a Drawing by Robert Atkinson.

lack of prescience and daring. It was no good pitching into Mr. Jerrybuilder too much. Mr. Jerrybuilder was creeping up. For proof of it they had only to look at the surroundings of a garden city, where builders tried to live up to the example planted in their midst. Mr. Property Owner, who often unloaded on the jerrybuilder and architect much of the responsibility he should take upon himself, had littered the earth with his squalid tenements and his ignoble streets. The speaker believed that the landlords as well as the ratepayers would benefit if they did what the best architects were advising them to do. Garden cities were magnificent in themselves, but they were a hundred times more useful in the inspiration they supplied to others. In the past property owners seemed to have thought that parsimony meant economy. Therefore, they narrowed streets, contracted rooms, and looked upon a beautiful vista as the eighth deadly sin. The Philistine was being taught that houses, roads, and bridges might be made without loss of money to harmonize with beauty. It was with such objects that the Housing and Town Planning Bill had been framed and passed. The reception it received was an agreeable surprise. It should be given an indulgent trial, and if it could be, it would be amended and improved so that their object should be secured. Its modest object was comfort in the house, health in the home, dignity in their streets, spaces in their roads, and a lessening of noises, smoke, smells, advertisements—all the nuisances that accompanied a city without a plan, because the rulers were governors without ideas, and the citizens without hopeful outlook and imagination.

#### *Modern Difficulties.*

In tackling this great job modern communities had little to learn which ancient ones did not teach them. Where in other times, for military or other reasons, the streets were narrow and the citizens crowded, compensation was given in large spaces, fine squares, and picturesque buildings. It was true that there were modern disabilities from which communities formerly escaped. But the ancients were better off in one respect than the mechanical modern. Rome, Florence, Salamis, and Athens did not have imposed upon them the vandal disabilities that the modern town now had as a burden. Athens did not have 600 miles of railway as London had, or ugly viaducts, creating *quils de sac* of mean and poor streets, with 500 ugly railway stations spoiled by vulgar advertisements; it had no gas works, and was without the 7,000 public-houses London possessed—nearly all of them at street corners, in positions which ought only to be occupied by banks, libraries, post offices, and police stations. London labored under the disadvantage of having all the burdens of light, heat, smoke, traction, and rapid communication which the ancients did not have. When it got rid of the 7,000 public-houses it would not need the police stations, but the measure of its difficulty ought to be the extent of its determination to grapple with these abominations. Let them go up the Monument, look westward and see what Cannon Street Railway Station hid of the river and the city. It would be a blessing if it would fall, as Charing Cross fell, only without hurting anybody.

As regarded the planning of towns, it was necessary to remember that cities should be as varied as the peoples who lived in them, and that they ought not to too slavishly copy after other municipalities. Wide roads were good, but they did not want too wide roads, if it was at the cost of the tenement behind. Then, in their wide roads, care must be exercised not to litter them with endless kiosks, posts, refuges, and other things. There was often a danger in space. Trafalgar Square, in his opinion, was too small, and the Place de la Concord too large, beautiful although it was. He thought there were too many trees in Toronto, and not enough in Berlin.

Town planning, in the speaker's opinion, should be applied rigorously and at once, but there was one person who stood between the authorities, the architect, the engineer, the surveyor, and the medical officer, and that was the layman who paid the rates and the taxes. The lay-

man, the Philistine, and the economist, however, could be converted if the trouble was taken to teach them.

#### Planning of Hellenistic Cities

Professor Percy Gardner read a paper on "The Planning of Hellenistic Cities." In the course of his remarks he said:

It is certain that recent archæological discovery has proved to us that the Greeks were more modern than we supposed.

If Euclid and Archimides, Zeno and Epicurus, Theocritus and Menander, Deinocrates and Pythius came to life, they would fit into the modern world far more easily than would our own heroes of the Middle Ages.

Architecture and the planning of cities went through, in the ancient world, the same two phases through which they have gone in the modern world. The old cities of Greece, in the age before Alexander the Great, consisted of narrow, winding streets bordered by poor houses. The central and important sites were occupied by the temples of the gods, the senate-house, and the town hall, the market place, and the gymnasium. The public buildings were large and splendid, the private houses were shelters for the night.

On the Ionian coast of Asia Minor cities were more orderly and stately. Herodotus tells us that the very ancient city of Babylon was four-square, the River Euphrates running through the midst, and the streets all running straight parallel or at right angles to one another. Something of this order and symmetry characterized the Greek towns of the coast. While the agora or market place in the old cities of Hellas was merely an irregular open space where streets met, an Ionian agora was square, with porticoes round it, and lying in the heart of the city.

A Greek city, even in the Hellenistic age, consists of four parts. First, the arrangements for defence. It was necessary to surround it with a wall and towers. Even when, in the age of the Roman peace, it became a custom to build outside the barrier of the walls, these were still maintained—as in the case of modern ironclads—to protect the most vulnerable parts. And above the city rose almost always an Acropolis, at once the dwelling place of king or tyrant, an arsenal and place of arms, and the oldest seat of the city deities. Second, we must place the abodes of the gods in the Acropolis, or the lower city, with the sacred precincts which surrounded them. Third, there is the market place, with the porticoes or public buildings which surrounded it. Fourth, we have the houses of the inhabitants. Naturally we place this last feature at the end, in Greek fashion; a modern mind would probably place it first.

"As in old Italian cities we find a street traversing the site from north to south, with another passing from east to west, and crossing it at right angles. The centre was the altar in the midst of the agora."

Ancient authorities discussed the advantages of the regular arrangements of streets in a town from the hygienic point of view. The physician Oribasius maintained that when roads were straight air flowed faster through a city, and most freely of all when the roads were set to the four points of the compass. The great architect Vitruvius, on the other hand, though the free entrance of winds into a town a thing which it was desirable to check. Our own ancestors built rather on the principles of Vitruvius; we, on those of Oribasius.

The Greeks, both in early and later times, were careful to obtain for their cities a good supply of water. On all early sites we find extensive cisterns for rain water; but these were only for a supplement to spring water, or for use as a last resource in case of siege. In supplying water the Greek usage differs notably from the Roman, and the difference is very characteristic and suggestive. The Roman brought water by great aqueducts, striding across valleys and ravines; he made his way straight to his end, without troubling himself about natural impediments. The Greek, more subtle and less determined, adapted himself more to the conditions. We have long

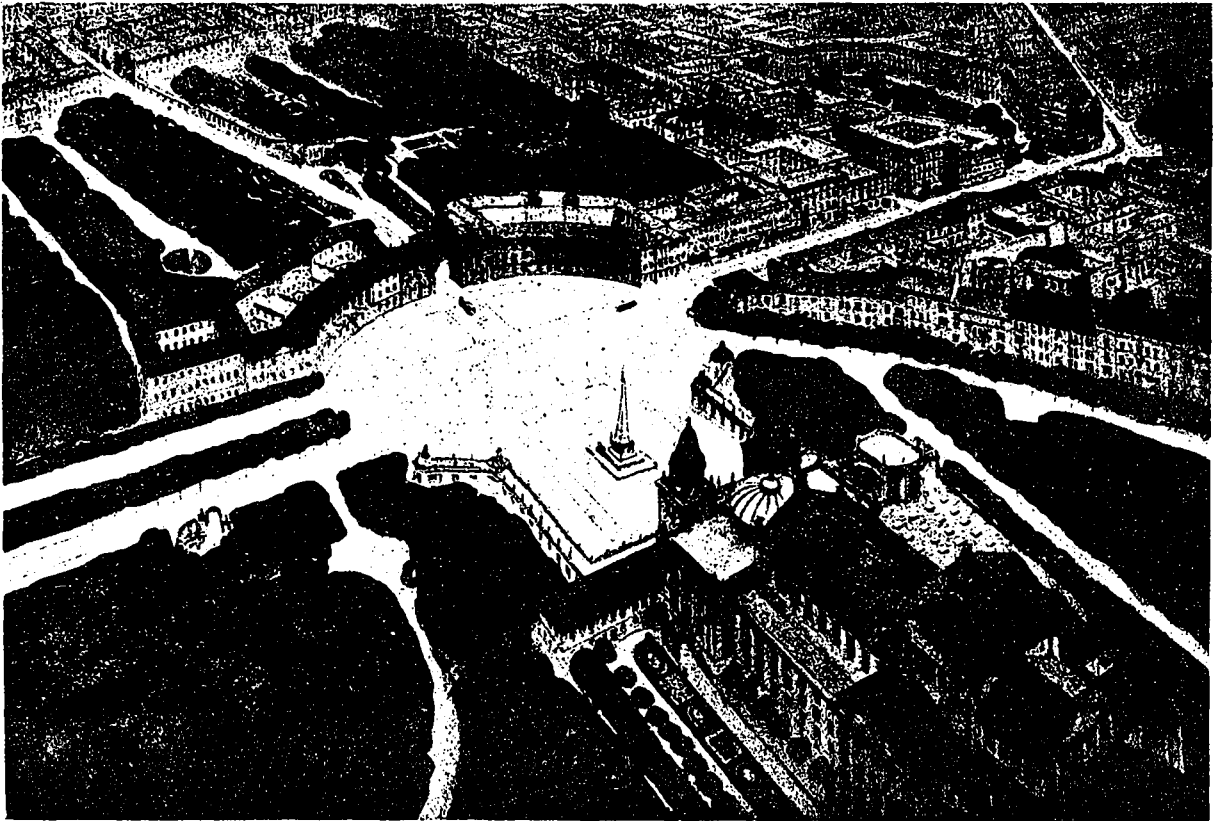
known of the wondrous underground conduit of Eupalinus, whereby in the time of Polycrates the Tyrant, water was brought from the hills to the city of Samos. At Pergamon there was a water conduit even more remarkable. From the heights of the Madaras Dagh, 1,700 ft. above the sea, the water of springs was conveyed by leaden pipes a foot in diameter.

The most striking feature of a well-planned modern town—the open spaces with lawns and trees and flowers, and the private gardens—were almost unknown in Greece, and, indeed, they are still comparatively rare in the cities of the continent, the limited space within the fortifications leaving little room for such luxuries. We try to mix town and country: the Greek idea was to produce a well-planned and self-complete township, enclosed by a wall and set in the midst of fields and woods.

### Town Planning in the Roman World

An address on the above subject was delivered before the conference by Professor F. J. Haverfield, LL.D.

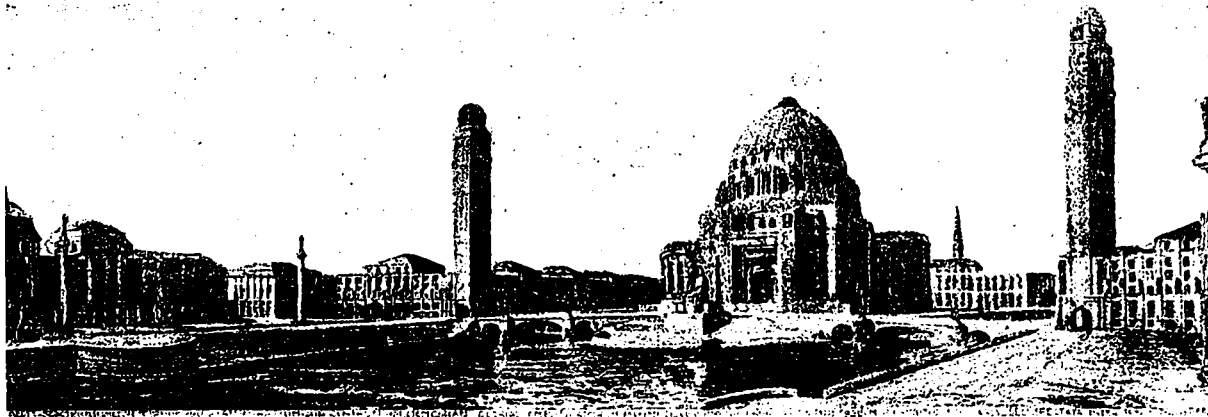
then, viz., fortified groups of houses possessing a municipal charter, but covering a small space of perhaps thirty or forty acres, and whenever such a body of colonists went out the result generally was the birth, fully grown, of a new town. During a period of the Republic this practice was followed with varying energy, and according to ancient authorities about eighty such towns were founded, or some were refoundations of old and decayed towns. Under the Empire the creation of new towns went on apace. It would be a big task to enter into the process or causes which brought these towns into existence, for they varied in every case, but the central fact was plain that the towns assumed a definite form. Ancient life differed from modern life in nothing so much as in its preference for set and crystallized forms of life, and this was especially seen in the form given to the town. It was the old form which resembled very closely that which Professor Gardner had illustrated in his plans of Priene and other short-lived towns of the Hellenistic period. It was the rectangular form which in all ages



Berlin: Proposed Opera Place. From a Design by Messrs. Mohring, Eberstadt and Peterson.

F.S.A., who said that town planning might be regarded as one of the intermittent sciences which came to its activity only at special periods and under special circumstances. There were, of course, towns being planned for good or for evil at all times, and there were cases such as Edinburgh, Newcastle, or Bath of isolated pieces of town planning in the eighth and seventh centuries. But in such cases the town planning was not systematic, for systematic attention to town planning occurred only at special periods, such as at periods of great expansion when large urban areas were being developed and towns were being created all at one moment. Professor Gardner had just described one such period, and another might be found in the early history of the Chinese towns in Central Asia, which had rectangular divisions of streets, such as was characteristic of the Greeks and Romans. It was the custom of the Romans and of the Greeks before them to send out emigrants to establish towns such as towns were

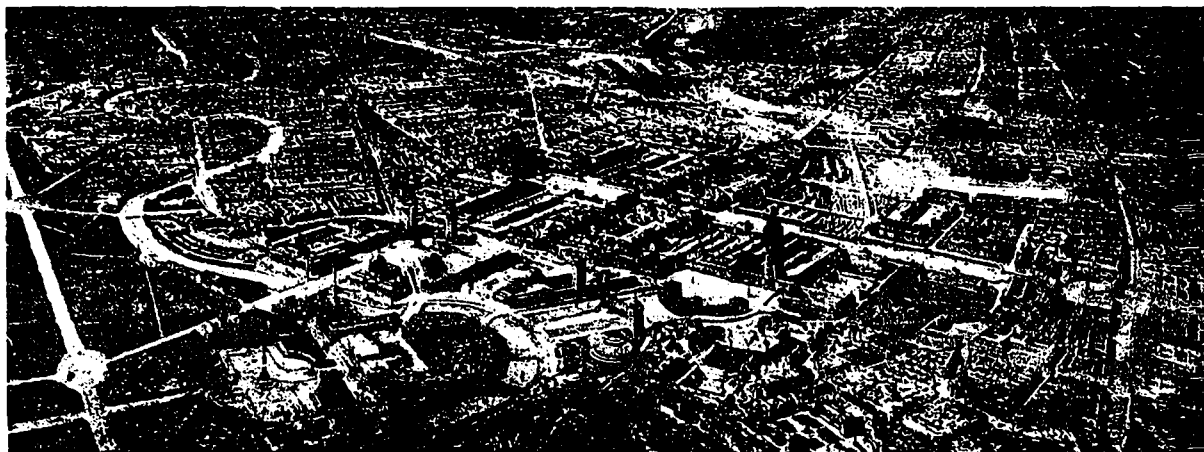
until twenty or thirty years ago was the form for all systematic town planning. They met it in the Chinese towns of Central Asia, and where the Chinese got it from he did not know, although they probably invented it for themselves. They met it in Greece from the fourth century, and occasionally they met it in mediæval England; and in many modern towns of the most recent times the square and the straight line were the simplest marks which divided civilized man from the barbarian. Not all the Roman towns showed this chess-board, for Pompeii was somewhat irregular, but that city had a somewhat irregular history, and perhaps when the excavation was complete they might be able to figure out the planning and see what part belonged to Colonia and which belonged to the older town. Many towns which were one Colonia kept the old street lines to this day, and Turin and Florence were examples. They knew from ancient history that Florence took its origin as a Roman Colonia, and they



Berlin: A Place. From a Design by Messrs. Schmidt, Havestadt, Contag and Blum.

would see from a plan of the city dated 1427 that the streets divided themselves up into regular chess-board fashion, and it was quite obvious that the origin of Florence was the chess-board plan which was proper to the Roman Colonia. The history of the city showed that the first stage was the plain Roman chess-board; the second stage preserved vestiges of this plan; and the third stage, which was that of to day, showed the Italian architects going back probably quite unconsciously to the chess-board plan, which was that of their Roman ancestors nearly eighteen centuries before. Professor Haverfield proceeded to show a plan of Tingad in Roman Africa, which occupied an area of forty acres, and was founded in the commencement of the second century, and said it showed what Florence must have been like at its beginning, and what a large number of Roman towns must have been like. In the centre was the Forum, and there was also a theatre and market and baths. Presently the city grew outwards, and regular straight lines were no longer preserved. Ancient law told them very little about any control of this rigid system of town planning. There was the normal administrative control of water and sewage, and lighting where it existed as it did in one or two ancient towns, but one clause appeared repeatedly in town charters and enactments, *i.e.*, "that without the consent of the town council no house-owner may pull down a house unless he is going to build it up in at least as good a fashion as before." There was one Imperial edict which ordered that if a site owner in a town did not build on his site, anyone else might peg out a claim there. That, no doubt, was an excellent precedent for a good many modern architects, but he hastened to add that it was an edict issued in connection with Rome after one of the largest fires, and was therefore an exceptional matter. Roman planning had influenced modern town life in vari-

ous ways. In Belgrade the old market place outlived the ancient Roman town, and another example could be taken from Trier, on the Moselle, in Germany. The old rectangular plan of this town was recovered entirely in the course of sewage operations, for the contractors agreed with the architects and archaeologists to take notice of all the Roman streets and joinings they came across, and in this way a complete plan of the ancient town was arrived at. Cologne at the present day had no resemblance to a Roman town, but nevertheless when they planned the thing out one could see that some of the streets did preserve vestiges of the ancient fashion. In the case of Silchester, in Hampshire, they had what might be called town planning put upon a wilderness, for the development was not strictly on town planning lines. Regarding a Roman house in Oxfordshire, which he had been digging out, and one at Cromhall, Gloucestershire, it was evident that these were not town houses like those of Pompeii and Silchester, but a conglomeration of such country houses. In England at the present time the inverse process was going on, and people were found building cottages in the country which were really town houses taken out of a row. All Roman planning was based on the supposition that they started *de novo* and had not to clear away or adapt, and there was no question of rights and property. Again, in all ancient towns the area dealt with was very small, and the problems which arose were entirely unlike those which existed in Chicago or Buenos Ayres. Modern town planning seemed sometimes to be a matter entirely of gardens, but in the Roman town there was no need for any real open spaces, because the place was too small. The Forum was an open square, but it was not an open space in the sense of the modern square or circus. Lastly, there were no industries to plan for in the Roman town. Rome, it had



Berlin: View of Moabit Quarter. From a Design by Messrs. Schmidt, Havestadt, Contag and Blum.

been said, had no chemical science or industries, and for want of this science the Empire came to an end. For want of these things also the town had no smoke or manufactures, and there was no need for arrangement for factories and for the consumption of smoke, which was one of the most important features of modern town planning.

### The Evolution of the Town Planning Ideal Since the Renaissance

Dr. A. E. Brinckmann, of Aix-la-Chapelle, presented a paper on the above subject, from which the following is reproduced:

The early mediæval city was economically and socially a necessity of the urban population, but it had not yet come to be considered in the light of an architectural creation to be treated as a whole. The attention is centred upon the buildings, considered singly, round the square—*i.e.*, the cathedral, the public hall, and the castles of the nobility, but not at all upon the idea of unity. Hence the town as a whole appears merely as an agglomeration of separate buildings and separate small castles. The streets and the squares are merely areas left unbuilt.

It is but gradually that the streets and square acquired a life of their own and that the ground plan became definite. It was little by little that the Piazza della Signoria in Florence, owing to the demolition of houses by the nobility, was extended and assumed greater regularity, after, about 1300, the Town Hall had been built. The Renaissance demanded a single external calmness in the form as against the restless aspect and anarchy of the mediæval towns. To develop town planning as an artistic unity, as had been the case before in the Perikles style of town construction, was the object of the Renaissance. We find an example of a town built with regular lines of street intercepting, one another at right angles in Leghorn, which dates from the sixteenth century and represents the masterpiece of De Medici Dynasty.

The influence of Rome was immense. Without the influence of that city modern town planning would be inconceivable. Such perspectives as found in Rome have been models, more or less powerful, for other cities.

The development of the conceptions of town planning, whose native place was Rome, was taken up by France, and first of all by Paris, under a monarchy which looked upon town architecture as the highest expression of its power. If the architectural efforts of Rome were like a violent explosion of energy, France, on the other hand, smoothed down the strong contrasts and improved the harmony. The idea of considering a city as a unified work of art had already been conceived in France, and if at Vitrey-le-Francois (1545) we find a plan exactly in accordance with the principle of the Italian Renaissance, the French architects also designed new forms.

The typical town square originated about 1700 in the Place des Victories and in the Place Vendôme (formerly Place Louis le Grande) in Paris. The facades in the square are uniform, and not high relatively to the area of the space. We find a splendid example of proportions in the sizes of the buildings and in the conception of French architects of rhythm in matters of space in the Place Royale at Nancy, which of all the French "places" or squares is the one best example preserved. The movement in favor of rectangular spaces is indicated by the prominence of the contours of the buildings round the square from the triumphal arch towards the Town Hall, which becomes the predominant edifice, whilst it rises at the same time towards the Carrière, and the way leading to it becomes more monumental. The view through this gate towards the square lacks the powerful movement of Rome, and the square itself is not only an imposing frontal square for the Hotel de Ville, but also a space for festive gatherings. The central closed square of the Renaissance is now becoming more animated after having passed through those periods.

A star-shaped square, even, is formed architecturally in this manner. When Roussel, in his scheme for the

construction of a Place Louis XV. in 1748 designed six of the ten streets converging upon the square with portals, he arranged for strong supports on two sides of the square, without depriving it of the character of a proper town square. The erection of fountains facing streets started this movement. The slender monument in the centre appeared as the *point de vue* of all the four streets.

The position of the streets round the Odeon in Paris show a monument which has been taken advantage of in this way, and where the front space and the streets stand in the most beautiful proportions to one another. Equally fine also is the Rue de Turenne, rising and widening towards the high gate of the Luxembourg.

In Germany we can observe in Freudenstadt, in the Black Forest, which was built in 1599 by a German architect with an Italian training, a structure which is exactly the same as the Italian Renaissance constructions. The rectangular central square is surrounded by arcades; in one corner stands the Town Hall, with two wings at right angles to each other, and at the other the church, similarly designed. Four main streets extend perpendicularly from the lateral centres of the market, and other streets run parallel with the sides of the market place. The early productions of this period, like Mannheim, Hanau, which were mainly built for the French refugees, follow the regular plan only, without bearing the impress of the lofty conception of the French architects. Nevertheless, sometimes we find artistic productions of this type when they received the patronage of the ruling princes. In this respect we must mention Erlangen. Here we find great beauty obtained by the simplest means.

Next to the more common rectangular plans we find also instances of whole towns centrally agglomerated, as, for example, Neustrelitz, in Mecklenburg, which is built round a market place, and Karlsruhe, which takes for its central point the castle, from which streets run radially through the town and the park.

The great designs were frequently originated by Frenchmen, or at any rate architects with a French training, as in the case of the scheme for building the Berlin Gendarmenmarkt by Bourdet in 1774.

Modern German town planning might well, after the depression of the nineteenth century, seek some instruction in the past. A certain romantic temperament, however, peculiar to us Germans, led us to overlook the lofty architecture of the eighteenth century, and we turned round towards old little towns, like Nuremberg and Rothenburg. I believe that the study of town planning in the eighteenth century would be good practice for everyone, although it cannot—and, in fact, must not—be used as a standard. We find the town planning of that century continued in America, and embodied in the scheme for a general plan of construction of Chicago under Daniel H. Burnham. Whatever doubt the reader may entertain as to the details, what surprises him most is what might be termed the "will of a town." There is no longer now any question of a town being founded by the fiat of a sovereign; it is now a purely democratic creation. It is the community which nowadays has to take over the role of the princes of the eighteenth century in the foundation of cities, so that we may well say: "*Usui civium, decori urbium.*"

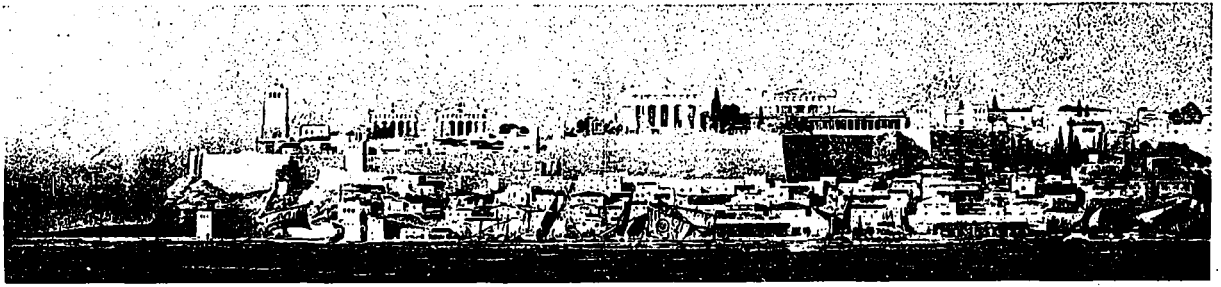
### Growth of Legal Control Over Town Development in England

Mr. H. Chaloner Dowdall, M.A., of the Northern Circuit, barrister-at-law, presented a paper on "The Growth of Legal Control over Town Development in England, Together with Observations on the Expense Incurred by Local Authorities in Carrying Out a Scheme Under the Town Planning Act." He said in the course of his remarks:

There are three ways in which the State may control action within its territory:

First, the State may establish conditions of general application and rely on the action of individuals acting with-





Restoration of Sellnonté, Elevational View. From a Drawing by M. Jean Hulot.

in those conditions to produce results beneficial to the State. This may be called the common-law method.

Secondly, the State may confer on local authorities power to lay down conditions of local application, or power to acquire and control property within their locality. This may be called the local government method.

Thirdly, the State may itself lay down conditions of local application, or may itself acquire and control property. This may be called the method of direct State control.

Each of these methods, either singly or in combination, operates in the sphere of land development in which town planning occupies an increasingly important position.

The earliest system of land development with which we are concerned is that which was introduced and matured by feudalism, namely, the common-law system, which governed all land development in England until the middle of the eighteenth century, and which still remains in force, subject only to those statutory limitations which have been introduced since that time. It is impossible to deny that much of the land, both urban and rural, has been and is being admirably developed under this system. A country gentleman of the eighteenth century often bestowed as much interest and intelligence in the development of his estate as a great manufacturer does on his factory to-day; and the squares, terraces, and semi-public parks of London and the provincial towns are in many cases achievements which command admiration. More recent developments of unfettered enterprise are of even greater interest—model factories, model villages, garden cities, and the like are rising up in every part of the country.

In the eighteenth century, under the stress of growing manufacturing industry, the common-law system was felt to be inadequate. Villages grew into towns, traffic increased, and accommodation had to be found for a fast-multiplying population; landlords in urban districts, desiring the fullest return from their land, often built houses closely packed together, without proper ventilation, accommodation or access; the roads in bad weather became almost impassable.

The eighteenth century, even in England was not great at representative institutions, but the Parliament of that time thoroughly understood trusts and private bills, and the remedy was sought through other means. A vast number of Improvement Acts and Turnpike Acts and Canal Acts were passed whereby a corresponding number of bodies of commissioners or trustees were authorized in

each instance to execute the trusts specially reposed in them.

Public improvements are still often effected under powers conferred by the local Acts which every year pass through Parliament, but by the time that the Towns Improvement Clauses Act was passed in 1847 one may say that the great period of special Improvement Acts promoted for each particular locality was drawing to a close; for the Reform Act of 1832 had been followed by the Poor Law Act of 1834 and the Municipal Corporations Act of 1835, and the principle of carrying on local government by some uniform scheme of popularly elected representative bodies was now admitted.

In 1848 was passed the first Public Health Act, and by that of 1872 every municipal borough, local board district, and Improvement Act area was constituted an Urban Sanitary District, and similar powers were conferred on town councils, local boards, and improvement commissioners. These powers were more clearly defined and consolidated by the Public Health Act of 1875, and extended in regard to matters with which we are here concerned by Acts of 1888 and 1907. By the Local Government Act of 1894 a uniform type of more popularly elected urban district council was substituted for the local boards of health and improvement commissioners.

And now, having very briefly sketched the growth of local governing bodies previous to 1909, a word must be said in conclusion as to the nature of the Town Planning Act of the year.

The Town Planning Act relates to land in course of development or likely to be used for building, and in certain cases to land adjacent thereto, whether already built upon or vacant, and it introduces a new and ingenious method of procedure; the effect of a "scheme" approved under the Act is that of a Private Act of Parliament, but the "procedure regulations," which take the place of standing orders in Private Bill or Provisional Order procedure, are specially adapted to the requirements of the case; the central criticism and control, instead of being exercised by a committee of either House or by Parliament itself, will be exercised by an expert department of the Local Government Board, Parliament only reserving to itself a right of veto in certain circumstances. The local authority also, which for this purpose may be either a Rural or Urban or Borough Council, or a combination of them, appears, either spontaneously or possibly under compulsion, as promoter of the scheme and as responsible for its execution. The Act, in short, gives to the Local



Restoration of Sellnonté, Elevational View. From a Drawing by M. Jean Hulot.

Government Board a perfectly general power to make local Acts of Parliament, called "schemes," with reference to streets, roads, and other ways, including stopping-up or diversion of highways; buildings, structures, and erections; sewerage, lighting, water supply, ancillary works, extinction and variation of private easements, and all incidental powers. The only limitations on this legislative power vested in the Local Government Board are, first, that if anyone interested gives notice of objection to any scheme, or if the scheme suspends any enactment of a public general statute, then either House of Parliament may within a limited time exercise a veto; and, secondly, any person injuriously affected must be compensated.

This short account of the nature of the Town Planning Act would be incomplete without some reference to the Development Act of the same year, the road-improvement clauses in which establish under the Treasury a Road Board, with power to construct and maintain new roads or to subsidize the construction or improvement of roads, principally in rural districts, to which the powers of Urban District and Borough Councils do not apply.

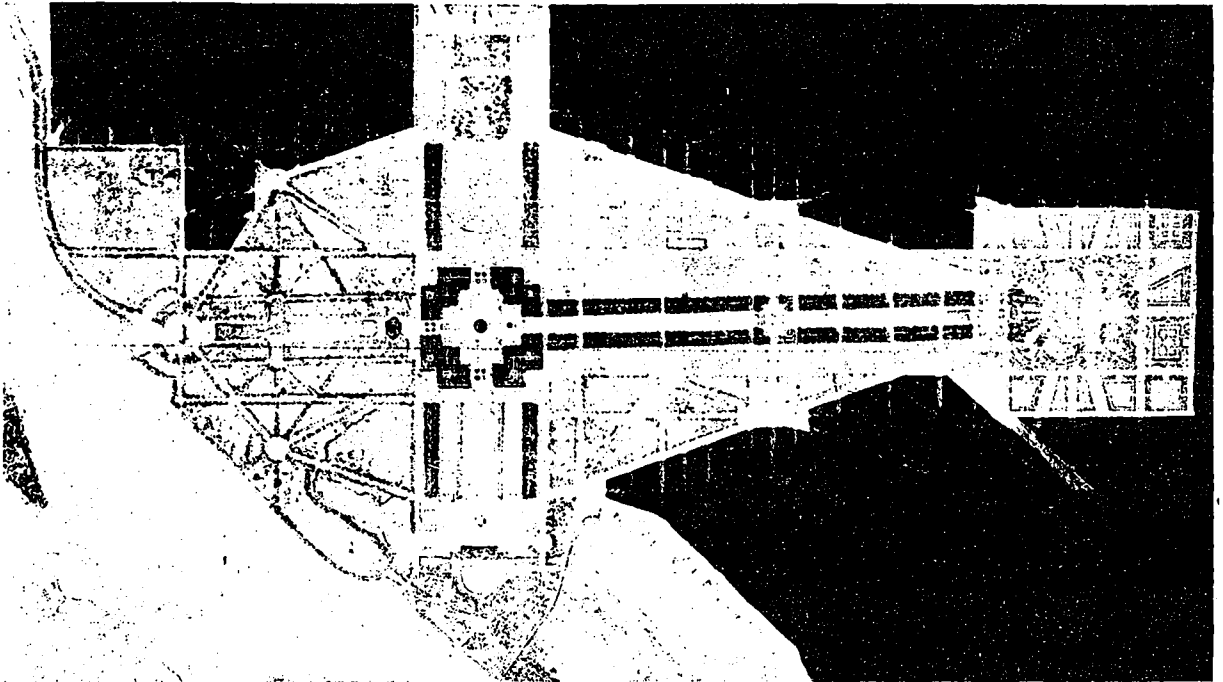
The Development Act gives the Road Board power to compulsorily acquire land for the construction of new

speculative builder we need hardly concern ourselves here, for this conference should certainly result in limiting to a great extent his powers for evil.

More attention must be directed to that prominent figure in our time, the progressive municipal administrator, who discards antiquated methods and appeals for the votes of the urban elector from his platform of "efficiency."

It was hinted above that even the enlightened town planning enthusiast needs some watching. The "clean slate" has a fascination for many people, especially for the capable administrator dominated by a theory. The civic reformer in every age has been disposed to sigh for the "clean slate"; but these reformers must not be impatient, and must remind themselves that the tablets on which they draw out their scientific schemes are not foursquare, but of infinite variety in contour, and that the surface of them is already deeply bitten with lines ploughed out by the comings and goings of many generations. For cities are not only made, but grow. Furthermore, the growth is conditioned not only by physical but by human environment, and is closely dependent on history.

If we ask, Are these things to count for nothing? there



General Scheme of Mall System, Washington.

roads, and also to acquire land some 220 yards on either side of the new roads, the arbitrator for compensation in such cases being appointed by the Lord Chief Justice and the general control kept in the hands of the Treasury.

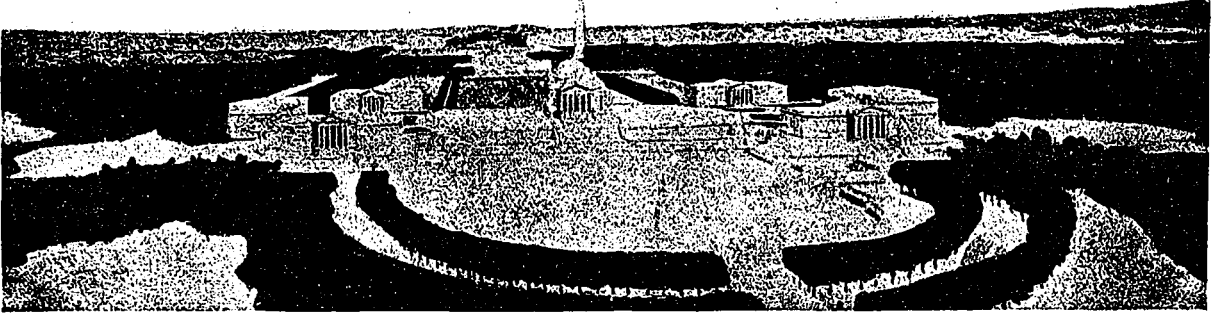
### Town Planning and the Preservation of Ancient Features

Professor G. Baldwin Brown, M.A., Hon. A.R.I.B.A., in a paper on this subject, said the aim he had in view was the reinforcement, by arguments suited to the occasion, of the old principle that in the laying-out and alteration of our towns utilitarian considerations should not override the claims of beauty and of historic association; that zeal for city improvement and extension should be tempered with a conservative care for older monuments, and for those natural features which give individuality and charm to civic and suburban sites. The phrase in the title, "The Preservation of Ancient Features," is intended to include the natural beauties of the situation or surroundings of an inhabited place, as well as its older buildings that possess æsthetic or historical value. With the

can be but one answer. Every responsible person who is concerned with "town planning" will acknowledge that the historic past has every strong claim on the reverent attention of the present; but here again the danger is that considerations recognized in principle may in practice be crowded out through the clamorous insistence of hygienic, artistic, and economic claims.

The increasing evidence of the solicitude of the British Government for the safeguarding of this portion of the national assets is an encouraging feature of our time. The policy that established the recent Royal Commissions in the three parts of Great Britain for the survey of these ancient monuments with a view to their preservation, is of the happiest omen for the future. It is novel for a general Act of the British Legislature to throw the ægis of the law round the beautiful objects of Nature as well as these of Art. It should be pointed out that the Government is in this, following the example of some of the more enlightened administrations of the continent, notably those of France and Prussia.

The recognition by the Government in the recent



View of Proposed Scheme for the Washington Common.

Town Planning Act of the national importance of this preservation of ancient features carries with it a logical consequence. It is obvious that there will now rest upon all the various departments of the British public service, concerned in building or pulling down, the obligation to assist in a loyal spirit in carrying out in matters of detail the expressed policy of the administration.

One practical object which is here in view is the devising of means by which alterations and improvements in our towns may be carried out without the disastrous demolitions of fine old buildings or the obliteration of the characteristic natural features of a site.

The arrangement of new streets and spaces in accordance with the configuration of a site, so that natural indications are followed out in Art. is so obviously right that one would apologize for mentioning it were it not for the glaring contraventions of the principle in certain modern towns. This does not mean that artificial lines of communication are never to be allowed. It is, on the other hand, a most grievous mistake, always as regards Art and often as regards economics and hygiene, when the configuration of a site is completely altered by huge struc-

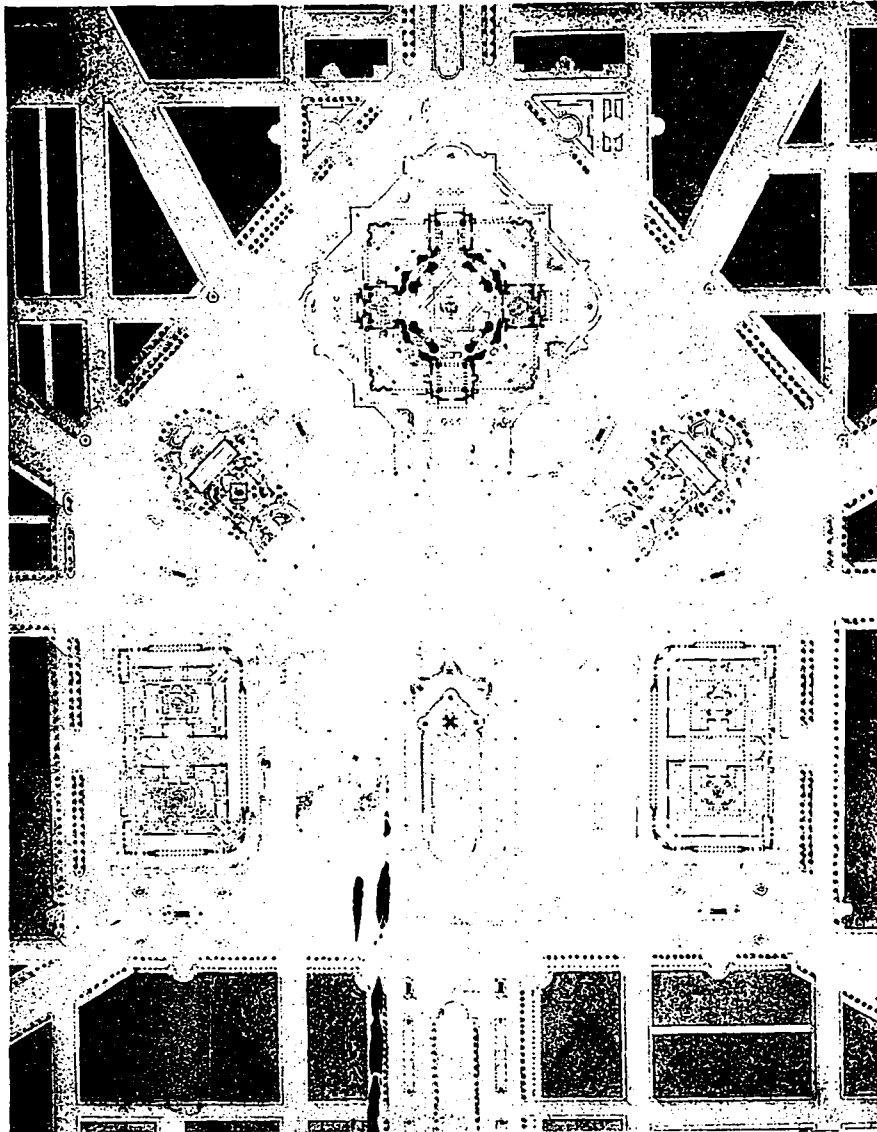
tures of utility or of display. In Edinburgh the running of solid causeways rather than light bridges across the low lying valleys has had the effect of cutting off communication between the upper and lower levels and of thrusting the latter down into squalor. The cities of the well-to-do and of the poor are in this way sharply sundered, with the worst possible social and economic effects.

The demolition of ancient monuments in the interests of urban extension and improvement is the last, but the most important, point with which this paper is concerned. Its importance resides specially in the fact that in this department whatever is done is irrevocable. If in planning out a new quarter of a city a mistake be made, it is generally possible later on in some measure to correct it; but when a fine architectural monument of the past is destroyed or mutilated it is gone for ever.

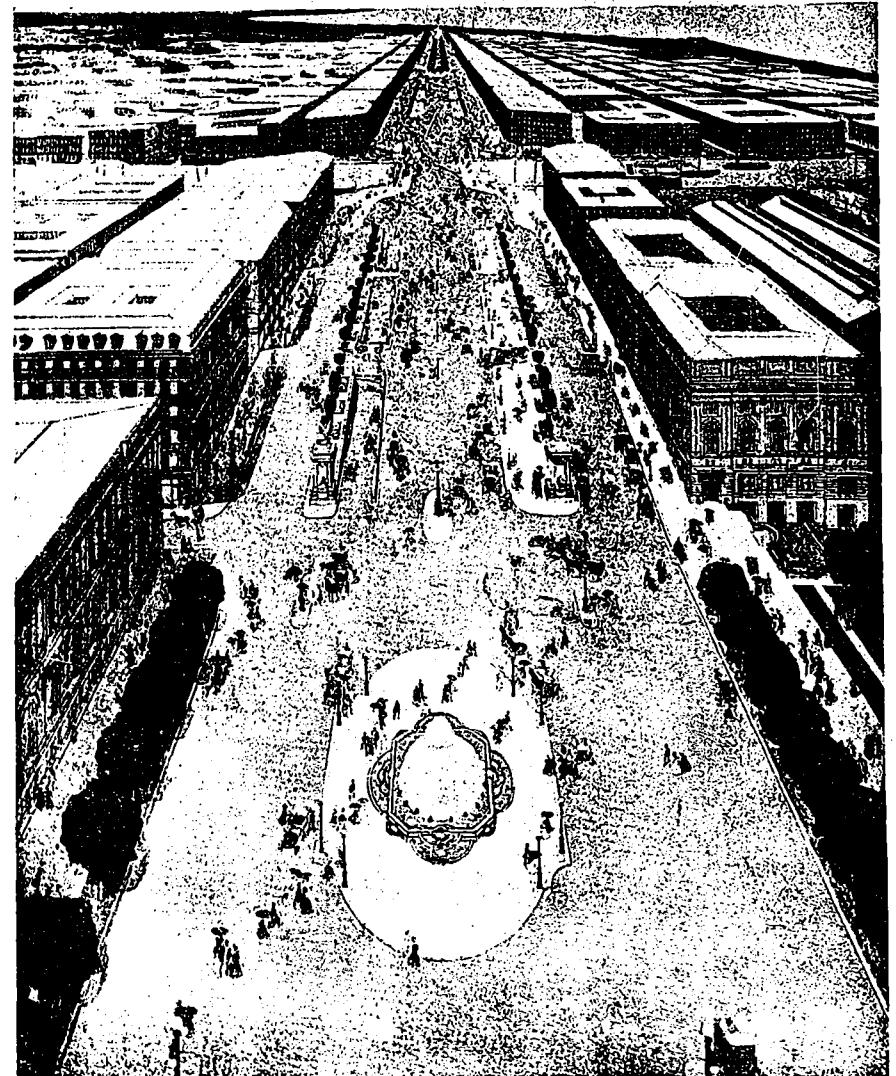
It is possible that one permanent result of the congress may be the establishment of standing committees to carry out its objects, and if this prove to be the case it might be practicable for one of these committees to undertake the very useful post of adviser to those in trouble about their ancient monuments, giving them information as to



View of Proposed Lincoln Memorial, Washington.



Chicago: Proposed Civic Centre. Design by Messrs. D. H. Burnham and E. H. Bennett.



Chicago: Proposed Boulevard Continuing Michigan Avenue Northward. From a Drawing by Jules Guerin.

where they could best obtain the sort of professional assistance they require.

### Cities of the Present

Mr. Chas. Mulford Robinson, Rochester, N.Y., U.S.A., read a paper on "Cities of the Present as Representative of a Transition Period in Urban Development.—The Evidence of Standardizing Streets." In the course of his remarks he said:

The city of the present is the town of the past at, generally speaking, an ungainly age. In the olden days, when, as we look back, we see shining upon it "the light of early morning and the *naivete* of childhood," it was pre-eminently picturesque. The picture still delights the artist spirit in us.

But we know now that in those days the town was neither very wise nor very logical, nor was it industrially productive. To be sure, it was a sturdy young fighter, against foes of its kind; often it mischievously made a noise in the world; generally, too, it was light-hearted. It was, in truth, a real child city, playing well, fighting well, and, when tired, sleeping well. Indeed, like a child, it was prettiest and most picturesque when it lay asleep. Here and there we discover yet one of the number that has not wakened, and we steal up to it on tiptoe to gaze at the little sleeper and sigh for civilization's childhood—for the care-free days of urban short frocks and tousled curls. Playing and sleeping were the occupations of the community. Now few can work for themselves. Labor is become the community interest, and the fighting, playing and sleeping are only individual or neighborhood concerns.

So the towns of to-day may be fancied as of long legs and arms, with hair slicked down and faces grown sad and serious. They have become poor fighters but great workers; their sleep is fitful and restless. They are the embodiment of a wealth-producing energy, and they have lost the joy of life. Their frames are not fully developed for the work they try to do.

The city of the present is the town of the past, sometimes grown in size, but not adjusted to new conditions. Let us take as illustration one very simple, though very important, matter that is within the memory of us all. Not in the picturesque mediæval city only, but in the city of our own remembrance, it was necessary that the workman live near his work. That necessity is passing.

Nowadays architects and lawyers may have their office in the city and their home in the outskirts; merchant and banker and broker may sleep in the country though their labor is in town; in multitudes the more progressive clerks and salesmen and their families occupy the long rows of detached and semi-detached dwellings that make up the outer residence zones of cities. Thousands of men, to be sure, still go to bed over their shops, still sleep within call of the factory whistle; but other thousands, in a throng that grows with astonishing rapidity, considering how radical the domestic upheaval involved, now have daily change of scene and air, entering at nightfall into a peace which industry and commerce may not molest.

Obviously this is a social readjustment of incalculable value. But it has expressed itself very inadequately on the city plan. Though business sections and home sections have become divorced, and consequently have developed entirely different traffic requirements, yet, generally speaking, the street plan has remained unchanged.

Adequate recognition would involve two groups of changes, and these, when made, or if made, must definitely differentiate the city of the present from the mediæval town, and even from the city of the last century. These changes would be, first, the provision of long, straight, broad radial highways of easy gradient. Such thoroughfares, shortening time and distance to the outer zones, would facilitate the daily ebb and flow of travel, and would increase the area available for home-building. Second, the changes would involve a re-arrangement of minor streets, adjusting them to the needs of the sections which they serve, largely new needs in home sections.

How unlike are the needs of various sections must be obvious at a glance. Contrast the traffic requirement of a street in the business district, a street in a laborers' residence district, and one in a region wholly given up to villas in spacious grounds.

To illustrate concretely, let us take the Borough of the Bronx, New York—a region of delightfully varied topography, and illustrating within its considerable area almost every kind of suburban development. Yet here a general ordinance dealing with the arrangement of streets requires that all streets 60 ft. wide shall have a 30-ft. roadway, all streets 80 ft. wide a 42-ft. roadway, any street 100 ft. wide a 60-ft. roadway, etc. For example, as to the other aspect of the matter one may turn to the city of Washington, which we like to think of as so admirably planned. There a law requires that all new streets shall be not less than 90 ft. in width.

Consider the economic loss involved in such "mechanical standardizing"—an evil of which the United States has no monopoly. In fact, Mr. Olmsted, summarizing his observations on a city-planning trip in Europe some months ago, remarked that such standardizing was to be found "in not a few quarters of European towns, perhaps most noticeably in England."

The economic loss that results is of two kinds, and it is all reflected in the rent. In part this loss is represented by the actual municipal outlay for the paving and maintenance of the unnecessary street space, and in part it is represented by the increase in rent traceable to the amount of building land taken out of the market in order to supply the needless street space.

Æsthetically, streets gain nothing by excessive width. The grass and flowers, and air and light, can still be had. Assuming that it is our right to force them on the community, we still could narrow any distinctively secondary street to such proportions only as the traffic really, all things considered, needs. For this would lengthen the abutting lots, and we might then establish a building line in front of which no structure on a given street, or portion of street, should project. If the community still felt the need of forehandedness, it could secure an easement over those restricted spaces; the desired amenities would become attributes of the home rather than of the street, and better so.

Childhood is very dear and picturesque; but it passes at last in all our human institutions. Of these none is so complex as a city, and for none is absolute efficiency and adaptation to function so important. To plan streets on a system devised to meet the needs of an outgrown age is to impair their efficiency and to cause an economic waste which bears heavily indeed upon us all, and cruelly upon the poor.

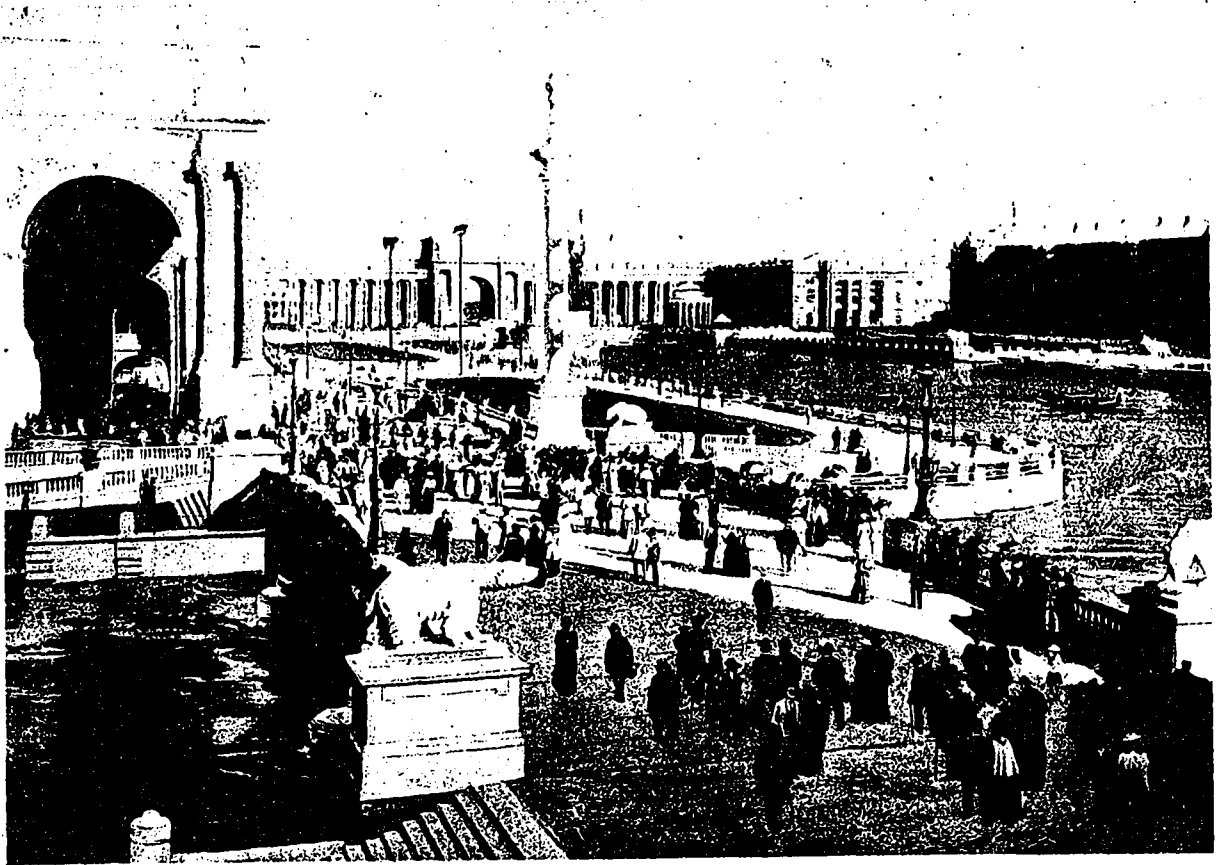
In the ideal city of the future the system surely will not persist. Already there are numberless instances of its breaking down, and so fundamental is the planning of the streets that no other merits of the modern city can atone for shortcomings there. To our lost urban childhood, the streets of the little city of long ago were better adapted than are most streets now to our lately-attained and strenuous urban manhood. We need to recognize the modernness of the problem, and to approach it with unprejudiced freedom and common sense.

### Cause and Effect in the Modern City

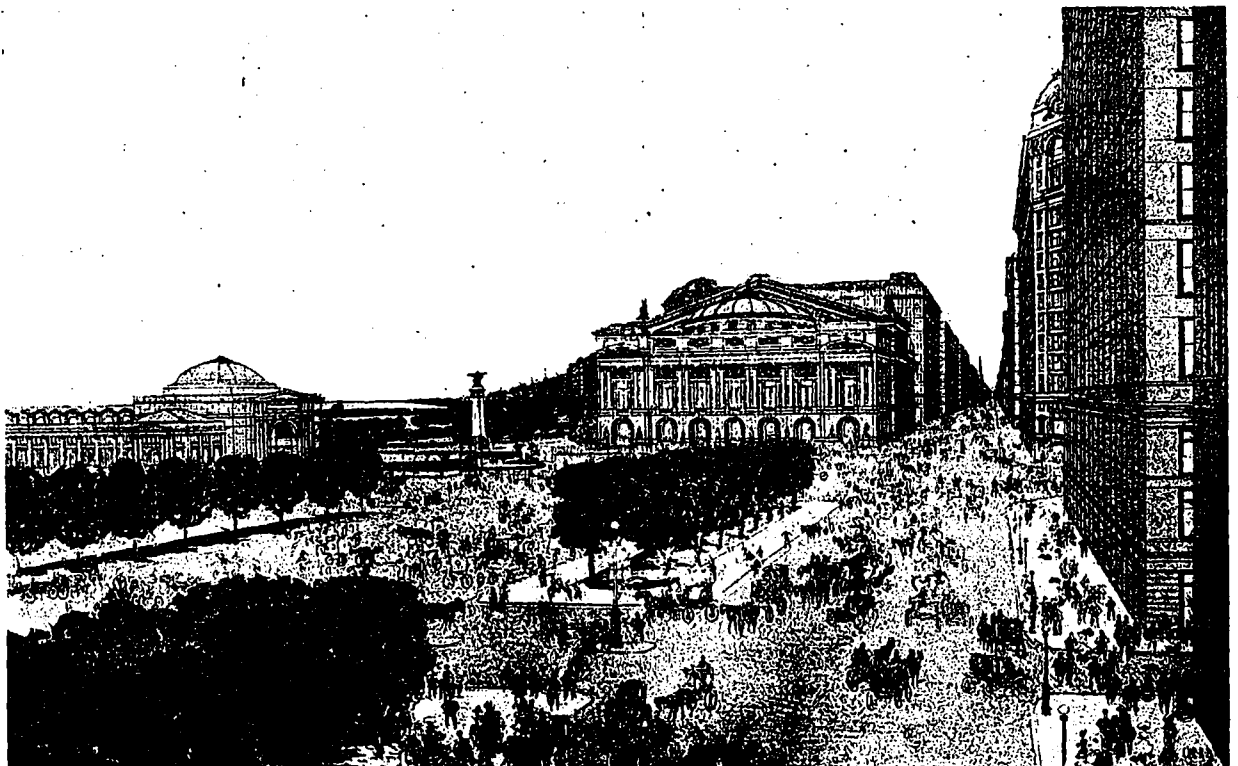
This paper was read by Mr. H. V. Lanchester, F.R.I.B.A., and is reproduced herewith in part.

The causes influencing the outward aspect of the city are of the widest imaginable range, embracing the whole life of man, and is it is hardly possible to conceive any factors, whether physical, psychological, racial, or social, that do not act and are not themselves reacted on by the structural environment of the community.

To state the matter more fully, we have the large factories and warehouses grouping themselves along first the river, for the sake of water power and transport, and subsequently the canals and railways when water power became unimportant and transport the main requirement.



The Chicago Exhibition, 1893: Court of Honor. From a Drawing by Mente.



Chicago: Michigan Ave. Looking South. Design by Messrs. D. H. Burnham and E. H. Bennett.

We have the original city gradually taken up by commerce and exchange, the residential districts filling up by degrees the spaces between the star points composed of mills or factories, and the retail traders following along the main radial arteries. The most attractive district will naturally be selected by the wealthy, and the others will secure occupants on a basis of necessity or convenience.

The governing or official centre will, unless firmly fixed by tradition, slip into a position between the commercial centre and the wealthy quarters, while the leading places of entertainment will gravitate in the same direction.

There is, by the way, one factor that, dating from the remote past, still operates at the present time, to which we may devote just a moment's attention. Explanations of the tendency towards the formation of a "West-end," so clearly marked in almost every city (where the natural formation of the cite does not forbid it), have been frequently attempted; the most usual is to regard it as a question of the prevailing wind, a solution which I have always felt to be doubtful. My own conclusion is that, the time of leisure and recreation coming towards the latter end of the day, man naturally turns his steps towards the brightness of the evening sky. Try the experiment; place yourself at four or five o'clock where the conditions in all directions are fairly similar without any preconceived intention, and see which way you feel naturally inclined to move. Will it not be westward?

To resume our inquiry into the causes influencing cities as they are. Having maintained that these are not mainly economic, it may appear inconsistent to admit that the general distribution of the city is chiefly determined on economic grounds. But one may admit it and yet deny that this general distribution bears the more important part in the impression received. For it needs investigation to grasp it, while the character of the buildings, their local massing, and arrangements are obvious to the casual observer. It is in these cases that the ideals come into play.

Thus the British convention for a church or a house differs far more from the French or the Italian than the merely material requirements demand, these differences being symbols of similar ones in the conventions of life. National character and national ideals are the paramount influences, arising out of climatic demands and historic traditions.

Thus we find the English house designed to stand a more boisterous climate than the French; but the English house in a sheltered position remains English, and the French, however exposed, will be French.

More important is it to take the broad differences in the manner in which two nations would approach the problem of erecting an important public building—say, a Law Courts, a case in which the very name starts us on our way, when we compare it with the title Palais de Justice; ours, short and businesslike, suggests the aim of fulfilling the practical requirements in a convenient and economical fashion, while the other hints at the first necessity of creating a mental impression of the dignity and paramount force of the law. The building abroad would not be wedged in between a congeries of narrow streets that it might be conveniently near the established quarters of the lawyers, nor would the designer be at pains to make the traffic lines in the building as short and direct as possible; indeed, we find a spacious carelessness as to the number of steps to be taken between the various rooms, suggesting the intention that time is well spent in passing from hall to hall and through vestibule, corridor, and staircase, if by this means the majestic dignity of the building may penetrate and impress itself on the mind. The varying importance attached to emotional influences of one kind or another must be regarded as one of the causes making for difference in the character of the city among the nation and even in different districts.

Is it not an almost invariable rule that the Anglican church shall build in some form of Gothic? Again, how would it appeal to the householder if his garden were left unfenced, as in the United States? Even the garden city

community compromises with posts and chains; while half our building by-laws are based on no real necessity, but on traditional ideals.

As to the house itself, probably nothing determines the general character of the city so much as the dwelling unit.

The Englishman's notion for a house "all his own" does more to fix on us the type of our city than any other consideration. This is obviously not a matter of economics, but one of ideals; the feeling of privacy and of a certain dignity as householder, mixed perhaps with other less admirable motives, turns the scale in favor of methods that may be more convenient and economical.

There are other qualities in our countrymen that cannot be regarded with so much equanimity, and which we can only stigmatize as inimical to the best developments of civic design.

In the main they arise from an unfortunate tendency to specialize in interests rather than to take a broad view of life as a whole. One thinks of nothing but commerce; another devotes himself to sport; while a third regards the acts as only to be taken note of at recognized times and seasons, if at all. The latter will perhaps fill the house with interesting pictures, his gardens with carefully selected flowers, or maybe he will go, with mind attuned to appreciation and criticism, to a pageant or play; but he will pay no more attention than the trader or the sportsman to the aspect of the streets through which he passes. Until national feeling is awakened in these respects, and we realize that our art is not a thing to be taken in specified doses at specified times, the ideal of the city as a thing of beauty in all the aspects of street, square, and park will receive but poor support from the general public.

### Town Planning in Sweden

The progress of Sweden in town planning is recounted in part in the following paper, which was presented by Dr. Ing. Lilienberg, of Goteberg:

Sweden in the seventeenth century was strong, while the organization of Russia and Germany was unsettled. When Sweden had lost its greater political power its Government always kept up the influence over the interior conditions and regulated the forming of the towns as well as the construction of the buildings.

And so we see that since the beginning of the seventeenth century towns in Sweden have been built according to fixed plans. A great number of towns were then laid out by the orders of the kings, and the royal charters were usually accompanied not only by drawings of plans that were to be followed, but also by regulations as to how these towns, generally speaking, were to be built. In the case of newly-laid-out towns as well as those already existing, a grant was made of the ground required by the inhabitants for their future main means of sustenance; and in this we see the beginning of the great landed properties usually owned by Swedish towns.

As a consequence, the governing powers had a very direct and powerful influence on the life and future of the towns: but this patriarchal time is over. There was a long period of transition in Sweden, which may be said to have had its actual beginning in the public law of 1734, in which was anticipated a special law touching the building of towns, and which lasted until such a one was forthcoming, viz., 1874. But during these 140 years of waiting building operations were fortunately of such a comparatively insignificant nature that one did tolerably well with royal circulars and building by-laws for the various towns and, as a rule, by working out the plan for the development of a town and submitting it to the king for confirmation.

However, in the fifties the towns began to develop more rapidly than before, and in 1866 large extension plans were approved for Stockholm and Gothenberg, as well as other places, which plans were expected to be followed by a large number of plans for smaller towns. The

desire to get stability and uniformity into the by-laws for the building of the various places now became inevitable, and forced on the building law for towns of 1874.

This embraced only the technical regulations for the planning and building of towns in conformity with the requirements of hygiene, comfort, communication, and protection from fire; and a civil law for the regulation of the juridical differences that might arise between the different economic interests that were of a conflicting nature in the execution of the town plan was not forthcoming until the year 1907.

So far as I know, the law of 1874 is the first building and town planning law applicable to a whole country ever drawn up, which included all the various subdivisions I have just enumerated. It is true that at the moment it is being recast, as not being in all respects in conformity with the times, but in very many respects it is still a pattern for a law of this description, since it is dictated by a broad regard for the requirements of the citizens for easy communications, comfort, air, and light.

All town plans are carefully drawn on the scale of one two thousandth part of the actual dimensions. On the plan, or on a supplementary plan, particulars of the height and slope of all parts of the ground are indicated by the use of appropriate means, and the plan is accompanied by the necessary explanations.

The town plan must be so prepared as to ensure:

That streets shall be wide and shall run in the directions most suitable for traffic;

That large and suitable sites shall be provided for markets, harbors, and other places where there will be much traffic;

That wide promenades (or boulevards), with shrubberies in the middle and roadways on each side, shall traverse the town;

That as many as possible other public planted open spaces shall be provided in the town.

When a new plan is prepared, or an existing plan is altered, for the regulation of one or more districts of a town, regard must at the same time be had to the future regulation of other town districts which may possibly come into existence, so that an harmonious arrangement of the whole town may be obtained.

In Swedish towns a private landowner may not send a plan for his property to the Government for approval. He has to apply to the surveying department of the town, and the scheme will not be sent to the Government unless it has been adopted by the town council. On the other side, the town council has the right to make a scheme for a part of a town without any demand of the owner. The law of 1907 has, to a great extent, influenced the English Town Planning Act of 1909.

In order to facilitate the working out of a scheme and to stop speculation the community may claim a prohibition of erecting of buildings on a certain area that is to be planned.

In Sweden such restraint cannot be imposed for a longer time than six months, while, for instance, in the law of Saxony it may last for two years.

When the law proceeds to divide the costs of the carrying out of the plans between the owners and the community, and, besides, to settle all disputes between these two parties, it presumes it to be indubitable that not only the town but also the private owners will derive benefit from the scheme being carried out. The burdens have, therefore, been divided between the landowners or those who are building and the community in this way: that the former have to bear the costs of the street ground up to the normal width, fifty-nine English feet, whereas the town has to pay for all the ground over this normal width.

In carrying out a scheme Swedish towns have a good help in being allowed to acquire right of expropriation, not only for the carrying out of a complete plan, but also of the whole town districts, provided these are insanitary or overcrowded.

The right of expropriation may also be acquired by a

town in order to secure main roads for traffic over certain districts not included in the town plan. With regard to such districts the town has right to get general rules laid down relating to the building thereon without the necessity of making out a scheme for the streets. Our Swedish law enacts that the expropriation commissions must not take into consideration the increase in value which has resulted from the carrying out of a town planning scheme."

### Civic Improvement

Professor S. D. Adeshead, F.R.I.B.A., of the Department of Civic Art, School of Architecture, University of Liverpool, in the course of a paper on "City Improvement" said:

It is not often that an occasion arises for the planning of an entirely new town, but opportunities for making improvements are constantly happening. This is a congress of architects, and our interest is in the first place an architectural one; therefore, important as are those sociological, economic, and engineering problems which are always involved where an alteration in a city is projected, I propose to deal only with the architectural issues, and particularly with improvements in connection with English towns.

In an age of constant international communication, the barriers which separate nations in the direction of their arts are the first to be broken down. At a time when England and Germany exchange ideas by the frequent visits of their societies and deputations, by international congresses and exhibitions, with cities like New York built up in a decade entirely from "motifs" borrowed from European models of the past—at such times it is imperative that we look far afield.

Lack of cohesion in style is, of course, more noticeable to us than to a foreigner. True we have had the influence of Mr. Norman Shaw in connection with our domestic work, but it is to our monumental work that I particularly refer. In America they have had the strong personal influence of pioneers like the late Charles Follie MacKim, and in France a national style has clung about the traditions of the Ecole des Beaux-Arts. The lack of cohesion in style which I see in England may be largely due to the Gothic revival of 1870 and thereabouts, certainly its destructive influence was never quite felt in other countries as it has been here.

The expression of endurance, solidity, playfulness, elegance, etc., are wrapped up in questions of style and character. It is the correct expression of these things which is, after all, the important thing, and this can only be done by a sympathetic use of traditional forms and a recognition of style.

Many of the worst features of modern architecture arise out of an exaggerated regard for the trivialities of modern life, or owing to a too evident desire to explain some details of construction which it is felt must appear on the face of the work.

But apart from this question of style, yet very closely allied to it, comes the question of scale. A comparison of London with Paris or with New York, or a comparison of provincial towns, Liverpool, Birmingham, or Glasgow, with London, shows us that, after all, the aesthetic value of a town approximates very nearly to its appreciation of scale. More than half the mistakes that are made in connection with city improvements in England arise out of a lack of appreciation of scale. By scale I mean not only comparative size, but also comparative appropriateness and fitness. I mean that to make a town look big it must be framed up in huge but simple lines, be filled in and interpenetrated by interests analytically separable and subordinate to one another.

A great city must be built on a great scale; it must have wide streets, wide sidewalks, and big buildings simply composed; it must concentrate its interests at points, and must not spread it about with reckless waste. I do not look disparagingly ahead; on every side I see evidence of the need for a bigger scale, and the advent of the Ritz Hotel and Selfridge's Store mark a change. Still,



it is heartrending to think of the number of costly buildings that have been erected in London and our provincial towns during quite recent years which, though big in actual measurement, in scale exhibit a miserably poor appreciation of the importance of their place. It is only by a bigger comprehension and a better appreciation of the subtleties of design that we can hope to get better scale in the architecture and composition of our towns.

In regard to sculpture, our system in this country seems to be to erect wherever possible portrait statues of great men. So far as I know this is quite a modern idea. I stand to be corrected, but I feel very strongly that the æsthetic value of a piece of sculpture is the only value it possesses which is of any worth. Its æsthetic value is proportionate to the power it can exert in arousing abstract feeling and not concrete ideas in the crowd. I feel that the portrait statue as such is best consigned to the gallery, to be regarded as a gallery piece, or should be treated as a bust or medallion surmounting a pedestal or supporting a sculptured group of symbolic worth; the right sort of sculpture to be placed in the city and amidst the crowd is such as tells an abstract tale—a figure of Liberty, Maternity, Justice, Peace, War, or some such symbolic subject inspiring to civic and national pride.

The finest type of sculpture is that which is purely allegorical, which stands simply for the poetry of nature and of human life. This is misplaced amidst the busy throng. It should be reserved for the quiet corner and for the park; not the entrance gateway or the centre of the main boulevard, but in the recesses of the green arbours around the fountains, amidst the flowers, where its intimacy with nature and its retirement from the throbbing of the city enables it to exercise a mystic charm.

Then we have the fountains, lamp-standards, and other incidents of a utilitarian kind. Fountains, like allegorical statues, are seen at their best amidst green trees and in quiet and secluded spots. We need more non-traffic places in our cities; such places need not all be in the parks. Here, in replanning our cities, great improvements could be made. The quietness of our railed-in squares corresponds in some measure to what I have in my mind.

In conclusion, I may say we hear a great deal about English architecture preserving English character. I am one of those who look upon the expression of character as being an affectation when not a subconscious sort of thing. It is significant that at this congress are representatives from many nations. Facilities for travel have made it inevitable that we be dependent upon one another. We would be foolish to close our eyes to the successes of our neighbors; we would be as foolish to shut our doors upon the things of which we ourselves are proud. Year by year the architecture of the civilized world will become more cosmopolitan and international. We should not resist, but should welcome such a result.

### The City Development Plan

Mr. Raymond Unwin read a paper on this subject, from which we take the following:

Mr. John Burns's Town Planning Act has wisely concentrated the attention of town planners in England mainly on the development of the still unbuild-on areas round existing towns where the greatest damage is now taking place. We must, however, not suppose that we can consider the suburban areas by themselves. City planning really involves the whole problem of the proper organization of city life. The high degree of specialization upon which modern industry and life depend points to the probability that a very large proportion of the population of civilized countries will continue to live in, or immediately about, great city centres. The growth of our industrial towns during the last century found us unprepared. We need to bring into our city life that guiding oversight and direction in making the best of the facilities which its position affords, and that proper correlation of all the different parts which are found so essential in a great modern industrial concern.

The first thing to be done in relation to the extension

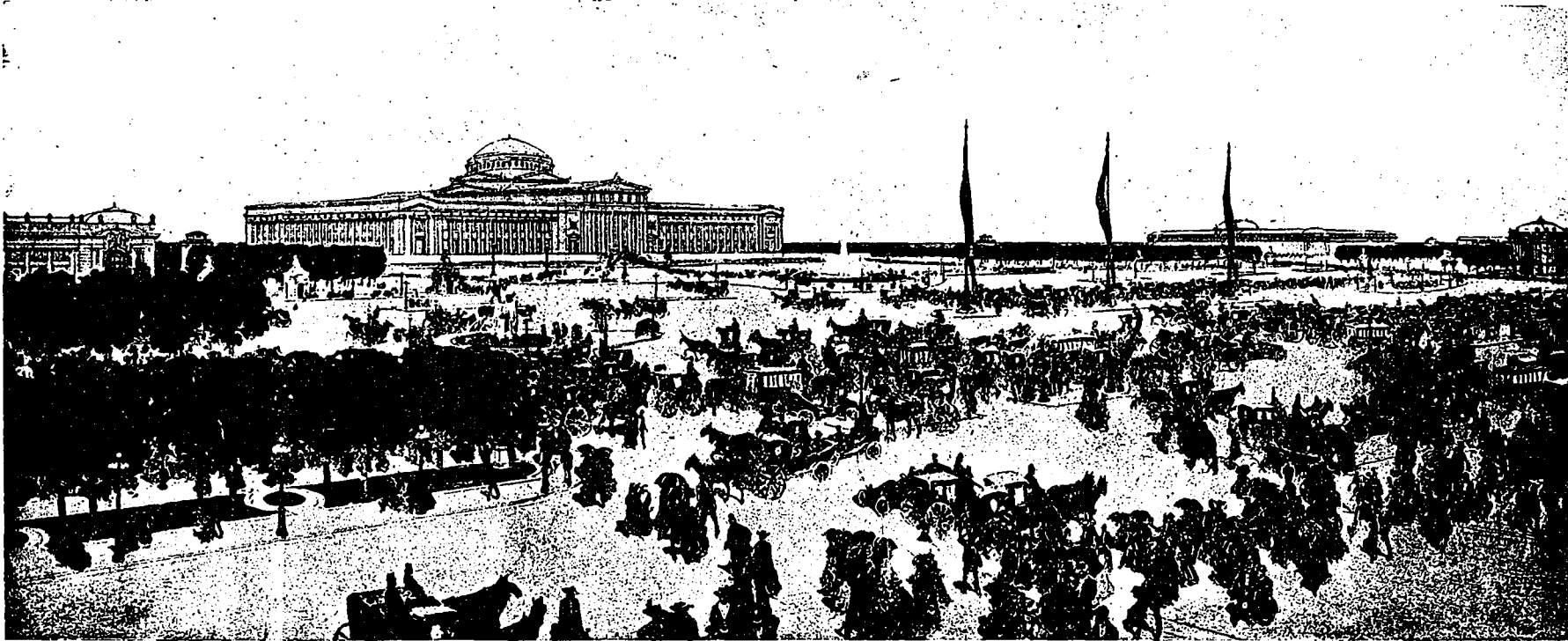
plan is to determine the general lines on which the city should be encouraged to develop; determine which areas it is important to reserve for industrial purposes, for providing new railway accommodation, docks, harbors, warehouses, etc., and which should be devoted to residences of various classes.

In considering the general form which it is desirable that town development should take two extremes may be mentioned. Either the town may extend in solid continuous rings, like the rising of flood water in a shallow basin, or it may increase by the growth of numerous detached townlets spreading from some centre, such as an existing village or a railway station on the outskirts of the town.

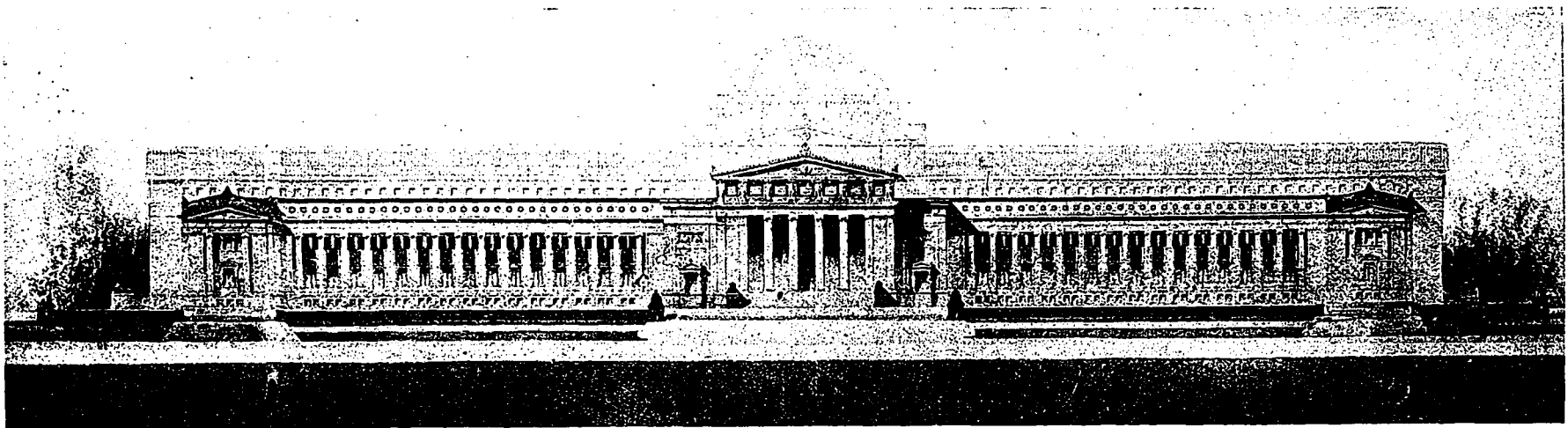
The essential idea that after a certain size the development of a city should be by the formation of supplementary centres on the outskirts, and the recognition of the importance of securing that the indefinite expansion of these and the central town into closely built up areas should be checked, and that defining belts of park, woodland, or open country should be reserved, seems to me of the utmost importance.

If towns of great size are to be wholesome dwelling places, it seems necessary to adopt one of two courses. Either we must give to every house a considerable extent of ground, which means spreading the town over an excessively large area, increasing unduly the distances which have to be travelled and creating the maximum difficulty in supplying and maintaining all the various services and conveniences of communal life, either material or social; or we must develop on the principle of grouping our buildings together in certain parts and leaving adequate open spaces around each group. This seems to me both the right and natural course. It is rendered easy by modern means of transit, particularly by street tramways, which have been found hitherto, perhaps, the most efficient means of conveying large numbers of people about urban areas. It renders easier and less costly the distribution of water, light, heat, telephone, and all other such conveniences, and at the same time fosters a much more interesting and varied character of development. City life is essentially co-operative in character, and I do not think that the ideal city life will be the setting of every individual house within its own quarter-acre plot of garden, but rather the placing of groups of houses within their own hundred acres of park. This is the method of development that has in past times been adopted when sufficiently highly organized groups have made settlements for themselves. In the great ecclesiastical establishments of the Middle Ages, for example, we find this method adopted, and, to take a most extreme example, it is said that in the days of its glory the Palace of Versailles has housed as many as ten thousand people—the population of a small town—all sharing and enjoying those glorious parks and gardens which surrounded the palace. Contrast the possibilities for social life and organization of this palace with what there would have been if those thousand people had been scattered over the park, each in his own cottage. A great many considerations must influence the widths of highways and minor roads.

Having settled the purpose of different areas, determined the general character of growth and the approximate directions desirable for main and subsidiary highway, the town planner finds himself with the following component parts out of which to make his design—namely, the main centre point or climax dominating the whole, the secondary centres in definite proportion and relation to it, and the main highways linking them up, the whole giving the bones or main framework of the design. Many of the difficulties which have been found to exist in American cities seem to me to arise from neglect of the proportioning of buildings and the other essentials. The whole of the town being planned in relation to the smallest unit—the building block—it consists primarily of a mass of detail framework having no relation to anything but itself. The excessive inconvenience of the indefinite multiplication of small units of the building block is forcing the American cities to attempt the very difficult task of super-



Chicago: Proposed Plaza on Michigan Ave., West of the Field Museum. From a Drawing by Jules Guerin.



Elevation of the Field Museum of Natural History.

imposing a framework upon this rigid mass of detail, a task not only enormously expensive, but, from the point of view of producing a successful artistic result, well nigh hopeless; and looking at some, at any rate, of the plans which have been prepared for the further development of American cities one is led to think that the fundamental wrongness of this type of plan has not yet been recognized, as apparently they are but reversing the order that has to be adopted in the town improvement scheme, and are trying to superimpose on a framework of main highways another rigid framework of minor roads, which, though it may have some distant relation to the whole, bears no proper relation or proportion to the spaces resulting from the character of the main framework. That the minor roads in the northwest corner of a town should be parallel with the minor roads in the southeast corner, though it may look pretty on the plan, is a matter having in reality no value whatever; but that the minor roads should have a definite relationship to the secondary or main roads of the framework to which they are adjacent is essential as much for convenience and economy as for securing a satisfactory artistic treatment of the street. No system cuts up the land into more awkward corners, or more thoroughly destroys the street facades, than that which consists of a framework of diagonal highways laid upon a rigid gridiron system of minor roads, and from no system do such satisfactory road-junctions result. In town planning it is essential to avoid being carried away by the mere pattern of lines on paper.

## Rome

Dr. Thomas Ashby, Director of the British School at Rome, read a paper on "Rome," from which the following is taken:

The natural topography of the site of Rome and the circumstances of the growth of the city alike render any systematic scheme of planning a very difficult one to adopt. The main lines of the streets were fixed from very early days by considerations of an entirely different nature. The Palatine hill, the nucleus of the city, was no doubt occupied by the original settlers, owing to the natural advantages of its position. It was almost entirely surrounded by abrupt cliffs rising from deep valleys, swampy at the bottom, and frequently flooded by the Tiber, and was only connected at a single point with the tableland on the north by the ridge of the Velia, on which the Arch of Titus now stands at its north-east corner.

The first extension of this settlement, towards the east and south, formed the Septimontium, including the two summits of the Palatine, the Velia, the Fagatal, Oppius and Cispius (these three all parts of the Esquiline), and (perhaps) the Caelius.

It is to the middle of the sixth century, B.C., that tradition assigns the construction of the Cloaca Maxima by the Tarquins, before which it is impossible that the Forum could have been used as a market-place. Professor Lanciani has well pointed out that the three main cloacæ of ancient Rome—the Cloaca Maxima, that of the Campus Martius, and that of the valley of the Circus Maximus—are simply in origin streams, which have been first regulated and then roofed over. The irregular course of the first of these indicates this fact clearly. The inclusion of the temple of Janus within the city boundary must have been a consequence of the fusion of a Sabine settlement on the Quirinal with the original community, and the selection by the united body of the Capitol as their citadel (*arx*) and the seat of the *templum Iovis Optimi Maximi*.

The Viminal (between the Quirinal and the Esquiline) and the Caelian (or the remaining portion of it) no doubt became parts of the city, either simultaneously with, or not long after the changes just dealt with, and the result was the city of the four regions Suburana, Esquilina, Colina, and Palatina.

The next stage in the development of the city is marked by the "Servian" wall, which, on the west and east, coincided with the pomerium, while on the north and north-east it included a great portion of the tableland

from which the Quirinal, Viminal, and Esquiline originate, and on the south it took in the Aventine, which remained outside the pomerium until the time of Claudius. It thus enclosed what came to be known, at any rate in the time of Cicero, as the seven hills of Rome—the Palatine, Capitoline, Aventine, Caelian, Esquiline, Viminal, and Quirinal.

The "Servian" line of fortifications was laid out with considerable skill, following, where possible, the edge of the cliffs of the various hills, the wall being there constructed on the same system as that of the Palatine, with blocks of similar size. Where it had to cross the tableland, from which the Quirinal, Viminal, and Esquiline originate, it was necessary (for a length of nearly a mile) to adopt a more complicated system of defence. A ditch, 30 Roman feet deep and 100 wide, was dug, and the earth thrown up on the city side; this was supported by a massive wall on the top of the ditch, and sometimes at the back by a smaller wall.

The lines of the streets were, in the main, dictated (1) by the natural features of the site, with its seven hills and their intermediate valleys, and (2) by the position of the gates in the Servian wall, from which issued the roads upon which the supremacy of Rome depended. When the city later on outgrew its boundaries and issued beyond the Servian walls, the main lines of streets were already down by these military roads. The city as a whole, however, seems to have grown up quite unsystematically; it had narrow and ill-built streets, and the central portion, between the hills and the river, was cramped and overcrowded, though it had already overflowed into the Campus Martius. This area, however, which had originally served for military purposes and for recreation, was mainly occupied by public buildings.

Julius Cæsar was the first to grapple with the problem. He realized the necessity of improving the communications between the Forum Romanum and the northern portion of the city, and the changes which he made in the Forum and the building of the new Forum Julium were directed to this end. These changes were difficult and costly. In a letter written in the summer of 54, B.C., Cicero says: "Cæsar's friends (I refer to myself and Oppius) have felt no hesitation in spending 600,000*l.* in extending the Forum. The owners of the property would not consider any smaller proposition.

Augustus continued on the same lines, completing the plans which Cæsar had begun, erecting a temple in his honor at the south-east end of the forum, and himself adding another Forum on the north-east of that of Cæsar. He also carried out a second delimitation of the rival banks. Whether it is from his reign that the actual embankment of the Tiber dates, we have no means of knowing. Certainly the ancient system, as seen at the Pons Aelius (Ponte S. Angelo), has some advantages over the modern; the walls were arranged in steps, which gave three different widths to the river at different periods of the year, the flood arches coming into use as required. This secured a faster flow in dry weather, and prevented the silting up which now so often occurs, and considerably increased the water supply of Rome. The first public baths—the *thermæ* of Agrippa, were constructed in his time.

The next great epoch of change in Rome is the latter part of the reign of Nero. This Emperor compelled private proprietors to reconstruct their houses in a more substantial way, and to allow greater width for the streets. He himself constructed public *thermæ* in the Campus Martius.

Vespasian, the founder of the new Dynasty, rebuilt much of what had suffered destruction during the tumults which preceded his accession, and, above all, the Capitol; he also added a new Forum, with a temple of Peace in the centre; he erected the Colosseum on the site of a great lake in the gardens of the Golden House; and, as censor, carried out a new survey of the city. The results of this were probably recorded in an earlier form of the

marble plan of Rome, which, in its present shape, dates from the time of Septimius Severus and Caracalla.

Trajan's most important achievement in Rome was the construction of his immense Forum, which finally solved the problem of easy communication between the centre of Rome and the Campus Martius. It is not easy to see why this solution had not been adopted by any of his predecessors. The discoveries of 1812-14 and those of 1906 have shown that where the column of Trajan stands, and also on the site of the north-eastern hemicycle of his Forum, there had previously been other buildings at lower levels and a different orientation; and the reference of the inscription on the column must be, not to the original height of the hill at the point where it stands (for we can no longer believe in the existence of a ridge connecting the Capitol and the Quirinal), but to the greatest height to which the hillside was cut back.

The troublous times between 235 and 284 allowed of little building activity, except for the hasty construction of the *cucinate* of Aurelian and Probus (270-282). These walls seem in the main to have followed the boundary of the regions (and the *octroi* line), though they took great advantage of existing buildings, which were indeed made use of to about one-third of the total length of the *enceinte*. The walls are of brickwork, with an internal gallery and towers at frequent intervals. They have, of course, dictated in large measure the subsequent topography of the city.

The upper portions of the city of Rome were deserted after the Barbarian invasions, and the destruction of the aqueducts on which they depended for their water supply, and mediæval Rome occupied only the lower portions of the ancient city, the hills being dotted with isolated churches and convents, but otherwise given up to cultivation.

The hills were free of buildings for the most part, and largely occupied by villas and gardens until after 1870. It was only then that the upper parts of the city began to be once more inhabited, and even at the present day the south-west portion of the area within the Aurelian walls still gives an excellent idea of the quiet and peaceful beauty, the disappearance of which those who have known Rome for forty or fifty years cannot help viewing with some measure of regret.

## THE TOWN PLANNING EXHIBITION

The exhibit held in connection with the conference gave the members and visitors an excellent opportunity to familiarize themselves with the various schemes that are either being worked out or projected with "town planning" work. In commenting on this feature, the *Builder*, London, says:

"It is no exaggeration to say that the exhibition marked an epoch in the history of architectural progress, for, after all is said and done, it is as a branch of architecture that the town planning movement will go down to posterity, and this collection on view at Burlington House was more comprehensive in its character than any hitherto held. Though it may be admitted that England cannot take first place in the world of art, it can, however, fairly claim to have been early in the field in organizing an international exhibition of town planning. That the intention was absolutely realized cannot be contended, but that the attempt comes as near as it did is something to be proud of. All the nations that have done effective work in this direction were represented, and if their exhibits were not quite proportionate, the relative representation approximated more nearly to the correct one than in the exhibition held in the summer at Berlin.

"The Royal Academy is to be congratulated on its prescience in making this the first occasion on which it has granted the use of its galleries to another body, and its liberality in so doing deserves the warmest recognition.

"As might be expected, Germany and Austria were well represented, while the United States took a leading position. England's exhibit was as much as one would expect, but France and Italy were disappointing, the form-

er showing little beyond a fine series of plans of Paris and Mr. Herrard's studies of civic improvements, while the latter's exhibit was limited to a series of plans of Rome."

Of the illustration shown throughout these pages, there are several schemes pertaining to improvements in England with which a large number of Canadians are already acquainted. One of these is a model of a portion of Hampstead Garden suburbs, a project which reflects great credit on its authors, and which has beyond doubt the æsthetic and practical advantages of building up a district according to a preconceived plan. Equal in importance is the drawing, by Mr. Robert Atkinson, of Mr. E. Prestwick's winning design for improvement at Port Sunlight, which shows the proposed scheme for a central boulevard, public library and museum. Other views show a design for a superarched bridge crossing the glen from Comely Bank at Dunfermline, and suggested public buildings in a park at the same place, from a design by the same author and Mr. C. E. Malloys; also the existing and proposed plan for Piccadilly Circus as worked out by Mr. John Murray; a sketch of the Leonard Stokes' scheme for the approach to Sir Aston Webb's plan for rearranging the Mall as a national memorial to Queen Victoria. Sir Aston Webb's plan, unfortunately, is not available for illustration.

The proposed Opera Place at Berlin, from a design by Messrs. Mohring, Eberstadt and Peterson, shows a most comprehensive and splendidly conceived scheme, as does also the suggested "place" with its monumental buildings and lofty towers, and the view of Moabit Quarter, Berlin, both from designs by Messrs. Schmitz, Havestadt, Contag, and Blum. All of these designs give an excellent idea of how thoroughly Germany has taken up the task of beautifying her towns and cities. Also noteworthy is the drawing by M. Jean Hulot of the restoration of Selimonte, and Messrs. Nicolson and Corlette's plan showing the ground scheme and arrangement of the new Government buildings at Kingstown, Jamaica.

Owing to the proximity, and also to the analogy existing in many respects, between the two countries, the several designs suggesting improvements for Washington and Chicago, illustrated herewith, and which constituted the major portion of the American contribution to the exhibit, will undoubtedly be of interest to Canadians in general. These are reproduced from the same contemporary, which comments as follows: The designs for Washington are based on the original plans of L'Enfant, plans that had been to a large extent obscured and degraded during years of neglect in the last century. Railways had been allowed to take positions destructive of the lines of L'Enfant's scheme, and the principal station actually encroached on the fine open space known as The Mall, which runs from the Capitol westward towards the river. One of the first objects of the plan prepared under the auspices of Messrs. Burnham, McKim, St. Gaudens, and Olmstead was to rearrange the railway routes so that they should no longer interfere with the fine surroundings of the Capitol, and this has been done by bringing them together at a point about half a mile to the north-east of the Capitol, where one of the main avenues leading from this centre terminates in a magnificent semicircular place, the forecourt of the great joint station, which is mainly a terminus, though the lines running south are continued through, and pass under the Capitol square towards the Potomac river by means of a tunnel. Thus all the railways have been cleared out of the central area of the city, and one of the most detrimental features removed.

The Mall itself and the fine park crossing it at right angles, about the centre of its course, had never been laid out and planted in a suitable fashion, while the buildings fronting it are out of alignment and architecturally unworthy. These areas demanded a complete remodelling, and the manner in which this is now being carried out will be seen from the accompanying drawings. Many other problems are linked up with this great central improvement, and some of the other drawings show how it

(Concluded on page 76.)

# CONSTRUCTION

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INTERESTS OF CANADA.



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**CONTRIBUTIONS**—The Editor will be glad to consider contributions dealing with matters of general interest to the readers of this Journal. When payment is desired, this fact should be stated. We are always glad to receive the loan of photographs and plans of interesting Canadian work. The originals will be carefully preserved and duly returned.

**Vol. 4 Toronto, December, 1910 No. 1**

## CURRENT TOPICS

**CANADIAN ELECTRICAL FIRMS** who are desirous of extending their trade to foreign markets, might well consider the field offered by British South Africa where the importation of electrical fittings for the first seven months of 1910 amounted to \$1,110,000, as against \$386,000 for similar supplies in the same period of last year.

\* \* \*

**THE ROCKY RIVER BRIDGE** previously referred to in these columns, has been formally opened at Cleveland, Ohio. It is built entirely of concrete and its great central span of 208 feet is said to form the largest arch ever carried out in this material. The bridge in all is 708 feet in length, and over 50,000 tons of concrete were required in its construction.

\* \* \*

**THE LAUNCHING OF THE "PIONEER,"** the new Government scow, at Port Dalhousie, mark Canada's first experiment in reinforced boat construction. The scow, which was built under the direction of Superintendent Weller of the Welland Canal, is eighty by twenty-four feet in dimensions, seven feet deep and draws three feet of water. It has three bulkheads and the deck sides, and bottom are two and one-half inches thick.

\* \* \*

**STEPS ARE TO BE TAKEN** at North Vancouver to regulate the planning and erection of buildings. A by-law now in course of preparation is to be introduced in the Council at a very early date. The proposed measure is being carefully drafted so as to incorporate such regulations as have proved to be the most effective and beneficial in the more important cities throughout the Dominion. At the present time such restrictions as apply, are at the best of a very vague character, and the need of a by-law and its proper enforcement by a competent Building Inspector, has been felt for some time past.

**A FIND OF RICH, RED MARBLE** is reported from the Province of Quebec. The discovery was made on the property of Thomas Armstrong at Trenholmvile, and experts who have examined the vein pronounced it as being of a particularly high grade and eminently suitable for architectural and commercial purposes. A Montreal party, it is said, has in contemplation the purchase of the property with a view to developing same and placing the marble on the market.

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**DOUBLE TRACK IMPROVEMENTS** along the line of the Canadian Pacific Railway, are now being rapidly pushed forward. An official announcement states that within a year's time, the entire system between Montreal, Toronto and Victoria Harbor will be provided with advantages in this respect. While the double-tracking is going on, all the wooden bridges will be replaced by steel and concrete structures. It is also the intention of the company to increase the accommodation in every yard from one end of the system to the other.

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**"PITT HOUSE,"** or "WILDWOODS" as it was originally known, is one of two historic mansions in the outskirts of London (Eng.), which are about to be brought under the auctioneer's hammer. It was to this place on Hampstead Heath, then the property of Lord North, that William Pitt, the "great commoner" retired in 1766 within a few days of his double elevation to the premiership and the Earldom of Chatham. The other house is "Moray Lodge" one of the few remaining "country houses" of London. It is a very old house, once surrounded by fields, but now within five minutes walk of the High street underground station at Kensington. It still has beautiful gardens and lawns, shrubberies and rosary. Lately it has been in possession of David Pullinger, a South African magnate, who now wants to sell it.

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**REBUILDING THE HIGHEST BRIDGE** in America, say the *Building and Industrial News*, without disturbing traffic is the unique undertaking which the Galveston, Harrisburg and San Antonio railroad, a branch of the Southern Pacific, between San Antonio and El Paso, has begun. This great bridge is 328 feet above water and 2,080 feet in length. At present the trains are supported by a temporary bridge of wood. This was built before a support of the old bridge was torn away. The new bridge will be a great viaduct resting on concrete piers built in the bottom of the canyon. The necessity of rebuilding the bridge arose from the purchase of big Mallet locomotives and the handling of heavier trains in the through traffic to the Pacific Coast. This Pecos bridge is higher than any other of the North American bridges and is surpassed in other countries by only two others, one in France, and one in Peru.

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**THE ARCHITECTURAL COUNCIL** of Ceylon, in its magnitude and architectural merit is among the contemplated improvements at Colombo, Ceylon. At a public meeting recently held at that place, a request was drafted and forwarded to the President of the Royal Institute of British Architects asking him to suggest the names of two or three distinguished architects who will submit to the design committee, and subsequently to the general committee, specimens of the ecclesiastical works of the realm. While the request was made directly of the R.I.B.A., other architects, whether in Ceylon or elsewhere, who are desirous of submitting specimens of their work or designs for a cathedral may do so and their work will be duly considered by the design committee. When the final selection of an architect is made he will be asked to make a study of the subject on the spot to acquaint himself with local conditions before the work is commenced.

*BUT LITTLE IS KNOWN* on this Continent, and even in most European countries, regarding moler bricks, a Danish product which was first exhibited at Aarhus in the summer of 1909. The salient feature of the brick is its unusual lightness, combined with great strength. The clay from which it is manufactured is found in certain localities in Denmark, especially in Jutland, on the shores of the Limfjord. In a dry condition the moler clay is white or of a lightish grey color and is largely composed of shells (*Silex alga*). It is claimed for these bricks that, apart from their lightness, they are not liable to crack even when a nail is driven into them and that they possess insulating qualities and can be used in the construction of stoves when in close proximity to wooden partitions or for the brickwork of steam boilers.

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*THE MEDICAL HEALTH OFFICER* of Hamilton has started a crusade to close all houses, which, in his opinion, are not fit for habitation. A similar effort, which was made a year ago, resulted in one or two structures being permanently vacated, but as there are still quite a number of dilapidated and unsanitary frame dwellings, it is the intention of Dr. Roberts, the official in question, to conduct the present campaign along more comprehensive and vigorous lines in order to relieve the city of a grave and dangerous condition. Practically every city has its quota of tumble-down, antiquated, disease-breeding shacks, and while their removal or enforced vacancy might, in one or two cases, work a possible hardship, yet the physical and moral welfare of the community demands that such steps should be taken. Although the Hamilton Board of Health has no power to order the razing of such structures, it is invested with authority to at least close them up and see that they are not a menace to the public's health. Under these circumstances, the object aimed at is eventually attained, as with the purpose and earning power of these houses thus destroyed, together with the accumulation of the yearly taxes, the owner is forced to either get rid of his holding or else replace it with a better and more improved structure. The "Ambitious City's" policy in this respect can be adopted by other municipalities to advantage.

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*A SOMEWHAT NOVEL PLAN* for constructing concrete walls without the employment of forms, either wood or metal, was adopted in extending the exercise grounds of the Allegheny County Work House, at Claremont, Pennsylvania, where concrete slabs, molded in a simple way, were employed as forms and used in such a way as to become an integral part of the permanent wall construction. In all, 710 ft. of walls, twenty-three feet high, were constructed at an expense to the county of between \$1.90 and \$2.00 per cubic yard, exclusive of the cost of tools, labor and superintendence. The slabs used are reinforced with a triangular mesh, and are uniform in size, being two feet wide, four feet long and three inches thick. They were cast in open forms laid on the ground, and in making them a small wire loop was placed in the forms, six inches from each corner, the ends projecting up into the concrete when applied. The upper layer of the concrete which forms the exterior of the wall is made of sand and fine gravel, and has been given a fairly smooth surface. When properly hardened the slabs were set on end in mortar, the distance between them being thirty inches, thus making the completed wall three feet thick. The slabs are fastened in position by a wire which passes through the loops inserted in the moulds and which project on the backs of the slabs. They were placed at exactly the proper distance by inserting wooden spacers, which were removed after the concrete was poured and spread. The wall was designed by Arch. F. C. Sauer, of Pittsburg, and constructed under the direction of the superintendent of the Work House, A. H. Leslie.

*BUILDING SUPERSTITIONS* in remote times, says an exchange, found expression in sacrificial offerings during the erection of a building, either public or private. Sacrifices were not only made at the completion of structures of all kinds, but also during the time the work was in progress. The foundation themselves were usually laid in blood, whether the structure was a castle, bridge, cottage or temple. Originally—tracing the subject back to heathenish times—the sacrifice was offered to the god under whose protection the building was placed. In early Christian times the bloody rite was retained, but was given another significance. In those days it was generally believed that no edifice would stand unless the cornerstone was laid in mortar mixed with blood. Usually the blood was obtained by sacrificing a dog, a pig, a wolf, a black cock or a goat, and not infrequently some malefactor's blood was poured out to make the ceremony more impressive.

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*REMOTE IN SITUATION* as it is, and only brought to the attention of many by such occasional and fascinating tales as the "Foot Prints," Lower California nevertheless, is not without its town-planning schemes, such as is now evident in all progressive countries throughout the world. An announcement has just been made by U.S. Consul George B. Schmucker, Ensenada, Mexico, of the completion of plans for founding an entirely new city on the line of the new San Diego and Arizona Railway, near the old towns of Tia Juana, and the international boundary. The plans for the New Tia Juana, as the place will be known, call for well-constructed streets, a modern hotel, a casino, a sunken garden, a theatre, a Spanish bull ring, pavillions, and other places of amusement, including a lecture hall, plunge baths and library. The scheme in general has been worked out on quite an elaborate scale, and while the primary object of the enterprise is to found an amusement resort, a town of considerable industrial importance is also anticipated.

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*ACCORDING TO A LATE ISSUE* of the London *Daily News*, the village of Brightling, about 9 miles inland from Hastings, possesses probably the most novel collection of strange buildings to be found among the British Isles. About half a century ago a certain Squire Fuller, the chief resident, who was possessed of great riches, spent money lavishly in the erection of numerous quaint buildings, with the idea of rendering his memory imperishable in the little village. Squire Fuller's eccentricity earned him the sobriquet of "Mad Jack." Perhaps the most remarkable of the buildings is the Sugar Loaf House, in which the "Mad Squire" was anxious to immune a man for seven years, during which time the victim was neither to shave, wash nor hold any communication with the outside world. His food was to be passed in through a window. There were several candidates for the experiment, but the authorities intervened and forbade the execution of the wild scheme. The observatory contains in the dome a camera obscura, which the Squire placed there so that his tenants could keep observation on the cattle without going into the fields. Cleopatra's Needle, built of local sand stone, stands at an altitude of 600 feet above the sea, and its base is covered with innumerable visitors' names. "Solomon's Temple," built in the style of an Eastern mosque, with massive marble pillars, was used by "Mad Jack" as a card room. The Squire's tomb, built to resemble the Pyramids, has a beautifully decorated interior and bears carved quotations from the Squire's favorite authors. The Squire's coffin was placed on a stone trestle above the ground and the door of the tomb locked with a key which was afterward destroyed. Beacon Tower was originally intended to guide ships into Pevensey Bay, but the Squire planted trees all round and thus rendered it useless to mariners.



# N ATTRACTIVE TORONTO BUNGALOW OF SPANISH TYPE

Residence of Frederick Paul, Castle Frank Road, Toronto—an essentially domestic dwelling structure, built on a site abounding in natural advantages, and thoughtfully considered in every particular.

**W**HILE MANY MODIFICATIONS have come to make the bungalow the essentially domestic structure that it is, little has been done to vary its height from that of its early prototype. It still remains characteristically a one, or one and a half story structure, and any residence in excess of this height can hardly be regarded as coming well within the meaning of the term.

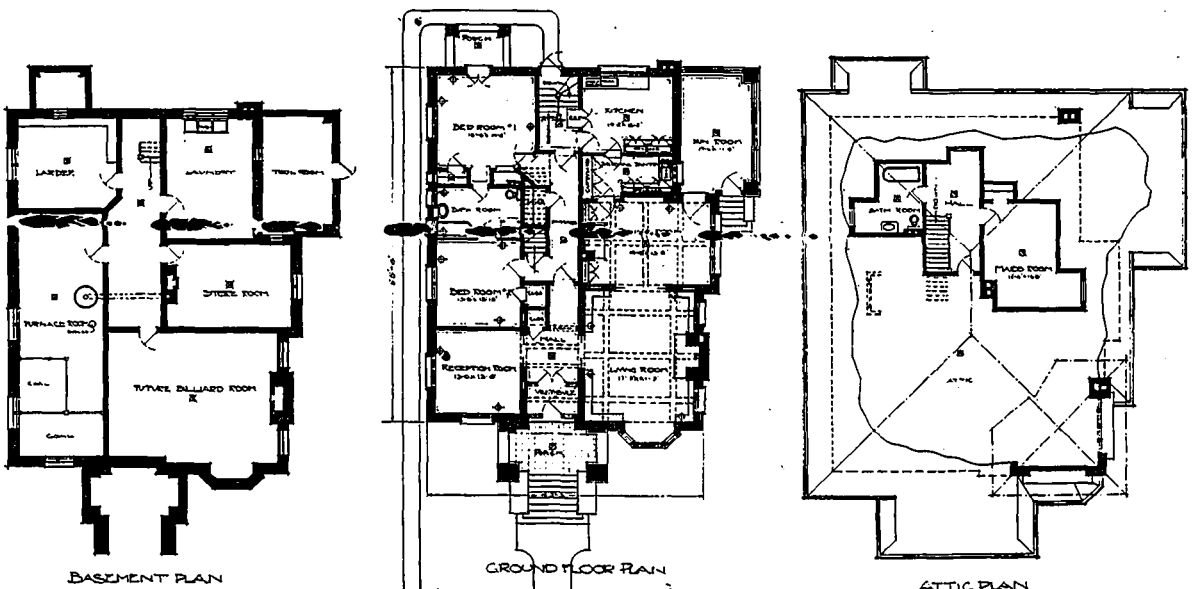
Situated back about seventy feet from Castle Frank road, on grounds, some three-quarters of an acre in extent, is one of Toronto's few represented homes in this respect. It is the residence of Frederick Paul, and an excellent example of the Spanish bungalow type. The location itself could hardly be improved upon. The site is resplendent with oaks, pines, spruce and maples, which, together with the wide expanse of the Rosedale Ravine to the east, south and west, affords the occupants every advantage of a beautifully wooded outlook. In construction, the walls of the house are of hard brick finished on the exterior with a roughcast cement plaster, and roofed in with unglazed Spanish tiles; the windows throughout being of polished plate divided into small diamond panes in the upper sash. The design, in keeping with dwellings of this type, is devoid of any architectural elaboration; the general color scheme of gray walls, red tile and brown painted woodwork, together with wide corbelled eaves and effectively grouped windows, being mainly relied upon to produce a simple, homelike and unpretentious effect.

Although low in outline, the fact that the house is approximately fifty feet wide by seventy feet long allows for an exceptionally well arranged plan with practically the entire scheme of rooms on the ground floor.

Entrance to the vestibule is through a heavy oak door having an old-fashioned thumb latch and hung on heavy wrought iron hinges. This leads in from a deep, broad

porch paved with red Welch quarries. The vestibule, which is similarly paved, and the reception hall are both wainscotted in ash to a height of seven feet with a grey plaster frieze above, decorated with an arrangement of antique arms of various periods. To the right of the hall is the living room, a particularly homelike and roomy interior, with a heavy beamed ceiling and a large inviting fireplace directly opposite the door opening in from the hall. There is a certain sturdiness and a sincere simplicity in the general architectural scheme and the substantial character of comfortable leather covered chairs and couches, such as one would expect to find in residences built two centuries or more ago. The ceiling, which is twelve feet and six inches in height, is arranged with sloping sides, with the beams having the effect of being immediately under the roof; while adding materially to the general domestic character of the room, are the built-in bookcases which occupy all available wall space, other than that utilized by the fireplace, the sliding doors and the octagonal bay window. The fireplace is faced with tapestry brick, ranging in colors from brown to red, and set in with Moravian tiles, reproduced from some of the famous tiles of the old world. The hearth is paved with quarries similar to those used in the vestibule; and the fire-box proper, which is equipped with a crane and heavy hammered dogs, has an opening four feet wide, thus enabling the owner to burn large logs of wood. Above the mantel shelf the chimney is divided off by wood straps and finished with panels of stucco of a yellowish tone in oils, in keeping with the treatment of the walls below the heavy wood moulding. The frieze and ceiling are in grey plaster. Upon the walls are many oils and water-colors, chiefly the work of Canadian artists.

Adjoining the living room is the dining room which



BASMENT PLAN  
General Scheme of Rooms, Residence of Frederick Paul, Castle Frank Road, Toronto. Langley and Howland, Architects.

GROUND FLOOR PLAN

ATTIC PLAN



Residence of Frederick Paul, Castle Frank Road, Toronto. One of Canada's few Representative Homes of the Spanish Bungalow Type. The House is Situated on a Site Approximately Three-Quarters of an Acre in Extent, and Overlooks the Rosedale Ravine on the East, South and West Sides. This View Shows the Structure in Perspective from a North-west Point. Langley and Howland, Architects.

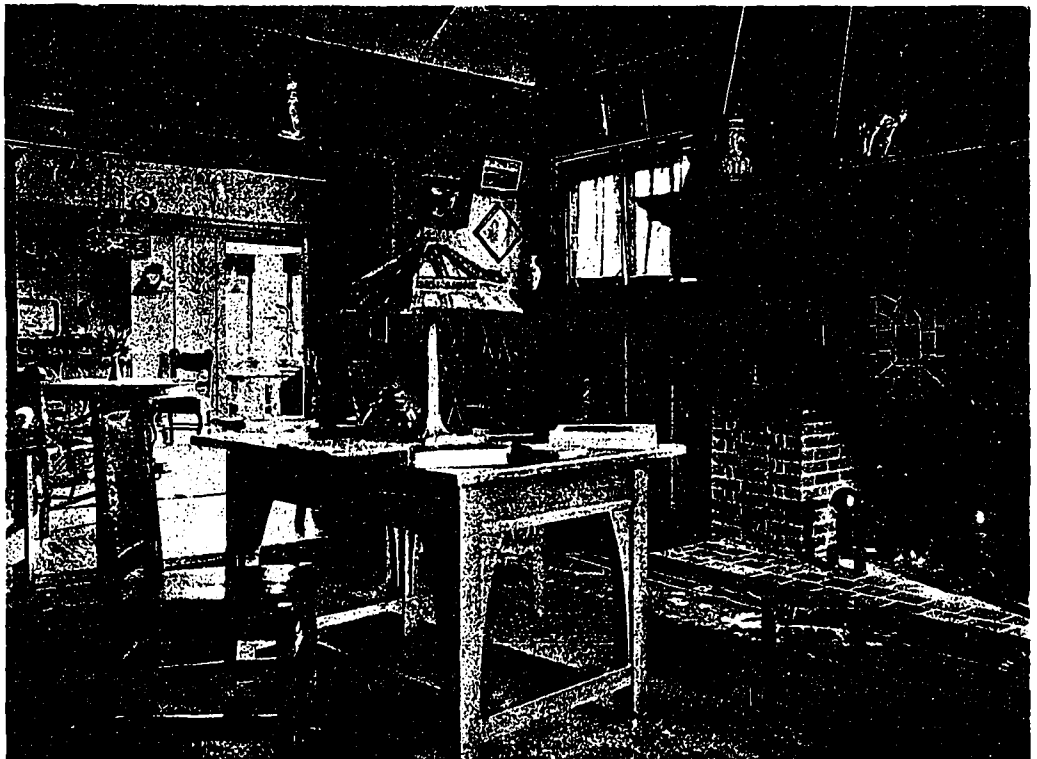


This View Shows the Main Approach and the Heavy Oak Entrance Door, Hung on Wrought Iron Strap Hinges. The Walls are of Hard Brick, Plastered on the Exterior With a Roughcast Cement; the Roof is of Red Unglazed Spanish Tile, and the Windows Throughout are of Polished Plate Glass with Small Diamond Panes in the Upper Sash. Langley and Howland, Architects.

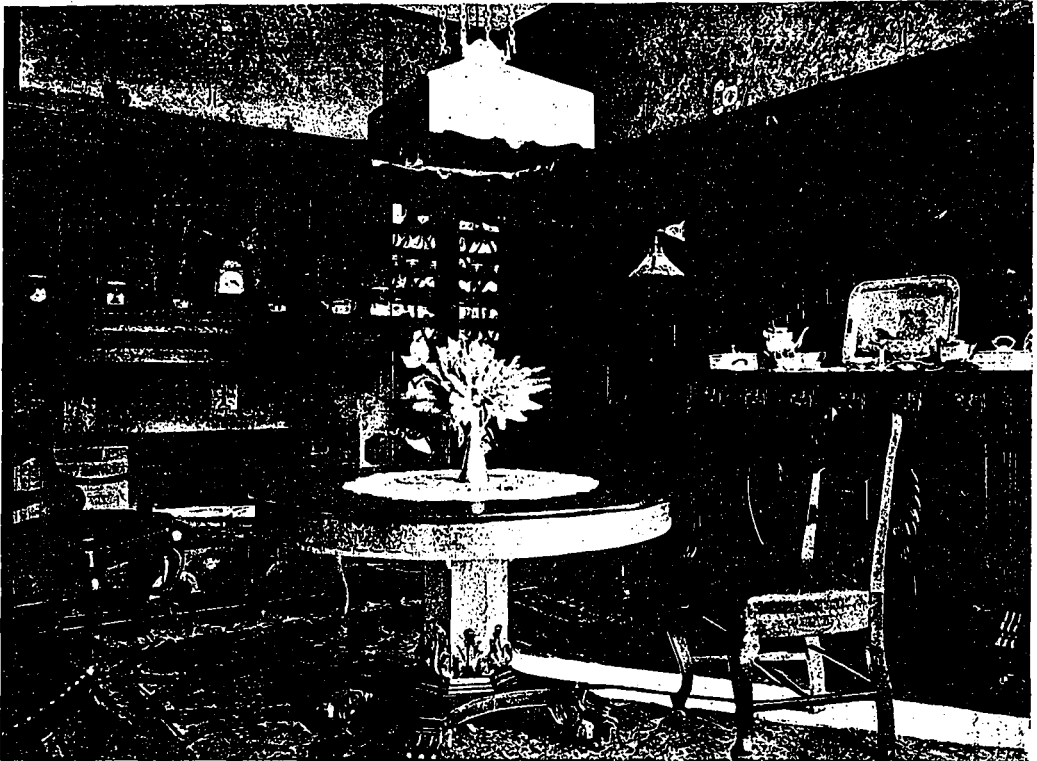




Living Room. Residence of Frederick Paul, Castle Frank Road, Toronto. A Particularly Homelike Interior With Unusual Ceiling Beams, and a Large Fireplace Built of Tapestry Brick and Set in With Moravian Tiles. Note the Substantial Character of the Furniture, and the Bookcases Which Form an Integral Part of the Entire Wall Scheme. Langley and Howland, Architects.



View of Living Room, Looking Toward the Dining Room, and the Sun Room Beyond. The Arrangement in General Brings the Scheme of Rooms Well Together, and Permits of the Living Room and Dining Rooms Being Thrown into One Large Apartment if so Desired. Langley and Howland, Architects.



Dining Room, Residence of Frederick Paul, Castle Frank Road, Toronto. Panelled in Ash to a Height of Seven Feet, and Finished Above Plate Rail With a Stencilled Frieze in Oils on Rough Plaster. The Buffet in the Alcove at Right, and the China Closet on Either Side of the Fireplace Are Built-in. Langley and Howland, Architects.



Sun Room, Residence of Frederick Paul, Castle Frank Road, Toronto, Which Opens from the Dining Room by a Plate Glass Door, and Overlooks the Ravine at the South and West. Langley and Howland, Architects.

also has a beamed ceiling. These two rooms open one into the other, so if desired, they can virtually be thrown into one large apartment. The dining room is lighted by large windows facing the west, as well as from the sun room which is placed immediately beyond. The walls are panelled in ash to a height of seven feet and finished with a



Reception Hall, Residence of Frederick Paul, Castle Frank Road, Toronto. Langley and Howland, Architects.

hand painted frieze on rough plaster. In the east wall, set on either side of a large fireplace, of the same general character of the one previously described, are built-in china closets with doors of plate glass with small irregular panes. At the rear of the room is an alcove with a fixed dresser and to the left of this, the door of the butler's pantry which connects the dining room with the kitchen.

In connection with the fireplace it might be well to mention that both have gas connections, with no idea, however, of burning gas as a fuel, but for the purpose of readily lighting the wood, thus saving considerable trouble when kindling a fire.

On the east side of the house on a line with the reception room, which is directly to the left of entrance, are two bedrooms with a bath-room between. The bath-room has tiled floor and walls, and besides the usual appliances, is fitted with a shower bath of marble. From the owner's bedroom, which is situated in a south-east position to the rear of the house, is a private verandah opening from the room by means of a pair of French doors, and overlooking the ravine. The main hall is cut off by doorways so as to give entire privacy to the bedroom suite, thus doing away entirely with an objection so common in houses of the bungalow type.

One of the features of the house is that stucco plaster has been utilized throughout, there being no wall paper in any of the rooms; the necessary decorations being accomplished by painting and stenciling. All the woodwork is in ash finished in dark brown, and the floors throughout are oak, no paint having been used at all in the interior of the entire structure.

The sun room, which is heated with hot water, as is also the rest of the house, is primarily used for flowers and plants. The walls are of grey plaster and a water tap is provided for the special purpose of taking care of the flowers with the least possible inconvenience. This room overlooks the ravine, as does also the kitchen, which is large and airy and provided with a modern refrigerator, which is supplied with ice from the outside. The butler's pantry, previously mentioned, is fitted with cupboards and running water, and the features of the service department generally are modern and complete in every respect.

The back hall, leading from the front hall, is utilized as a picture gallery as is also the stairway to the upper story. On the upper floor is a bathroom of considerable size and a bedroom of unusual proportion. This floor is planned so that additional space can be added if so desired; in other words, there is a good deal of space which is now unoccupied.

All hardware throughout the entire structure is of simple fashioned black iron, a style which is admirably adapted to the general architectural scheme, and particularly suited to a house of the bungalow type. Another feature is the lighting fixtures, which are of heavy Pompeian brass in rather severe design. These fixtures are in evidence in several of the views shown herewith.

The basement of the house has a ceiling of six feet



Fireplace in Living Room, Residence of Frederick Paul, Castle Frank Road, Toronto. The Bricks Vary from Brown to Red, and the Hearth is Laid with Red Welch Pavers. Note the Crane and Sturdy Character of the Heavy Wrought Iron Fire-Dogs. Langley and Howland, Architects.

eight inches in the clear. This part of the house is exceptionally well lighted in every way, and the plans provide for a handsome billiard room if so desired; the fireplace in this interior being already provided. The space occupied as a tool room, under the sun room, is of sufficient size so that it can be easily utilized as a garage if so desired.

The house was designed and erected under the supervision of Architects Langley & Howland, Toronto.

## THE TOWN PLANNING EXHIBIT—Cont'd from Page 68.

is proposed to deal with these, while it is interesting to note that though in this portion a definitely formal treatment is adopted, in the little valleys in the outskirts, such as Rock Creek and Piney Branch, an avowedly naturalistic effect is preferred.

The city of Washington has made more actual progress in the materialization of its civic scheme than any other in the United States. Chicago, by comparison, has hardly begun, and offers, moreover, a much less inspiring problem to the designer, the site being level and the existing town most monotonous in its lay out, besides being cut up in all directions by the multitude of railway tracks necessary to the conduct of its large business as a manufacturing and commercial centre. All the more credit, therefore, to those citizens who have had the courage to initiate and prepare the comprehensive scheme shown herewith. . . . Where sections of the plan have been worked out in detail a marked degree of skill is displayed in treating awkward problems. In considering the proposals as a whole, however, we cannot help feeling a doubt as to whether the effects indicated in the drawings are ever likely to be attained in actuality. It appears to be essential to the dignity these designs suggest, that a certain uniformity of height should be adopted in the buildings. The height shown is based on the present limit for buildings in Chicago, but is it likely that the central area of several square miles can be entirely filled by buildings of this height, and, if it were, what satisfactory provision can be made to overcome the awkward transition from these to the two or three story dwellings that stretch for miles around them? Would it be practicable, in the U.S.A., to introduce any ordinance ensuring uniformity of height in any given street or area, and without this how can even the most monumental plan secure that ordered dignity of effect essential to the great city?

In Boston a system of zones obtains, with stipulated heights for buildings in each zone, but these heights are permissive, and in no way compulsory. While it would not be advisable to make hard and fast rules, at the same time no civic scheme is complete that omits to provide for control over the height to be adopted for buildings in the various sections of the city, determining not only the height to which structures may be carried, but also that to which they *must* be carried. The English Town Planning Bill, as its name implies, does not extend its operations to this, but no city can be assured of achieving the ultimate power of monumental expression without regulations of this character.

Up to the present these have only been imposed in special cases and to a very limited extent. Even in Paris there are numerous instances where municipal control in this matter could have been put in operation with advantage. Of what avail is it to attempt to achieve a fine and impressive city by the study of its horizontal components only, while the vertical ones are left to chance and to the accidents of commercial necessity. Such control need not insist on a monotonous uniformity, but control of some sort there ought to be, preferably exercised by a body of broad-minded men, possessing a sound knowledge of the principles of architecture as applicable to the city as a whole.

## FIRE PREVENTION.\*—By Frank B. Gilbreth

IT IS AMAZING that so little has been done to prevent destruction by fire, and to apply the lessons which are taught by every great fire. All great fires are alike; building material behaves the same in the case of a fire, whatever the location.

The building of the Mutual Life Insurance Company, at San Francisco was a steel-frame structure, eight storeys high, of the best construction in 1892, when it was erected. The laying up and the filling of the joints in the brick, stone, and terra cotta were as nearly perfect as

possible. The exterior wall completely enclosed the steel frame, which was put together with bolted connections. The floors were of hollow terra cotta flat arches, and the partitions were hollow terra-cotta blocks. The damage to the building which necessitated the removal of the upper six storeys was practically all done by fire. This building is excellent for an illustration because it shows the good and bad points of many different kinds of incombustible materials which were used in its construction.

The lessons from this and from all fires point to the conclusion that no structure of the future should either be built of wood or should contain any wood. A very small quantity of wood in a so-called "fire-proof" building almost entirely of non-combustible materials will furnish sufficient heat to destroy it. Concrete construction is the best form for the elimination of fires, because the amount of damage done by a fire in a concrete building depends upon circumstances which are within control and predictable. With concrete made of properly selected fire-resisting materials practically no damage is done, except by prolonged high temperature.

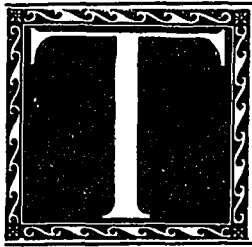
The results of recent tests by Professor Ira H. Woolson and his assistants, Mr. J. S. Macgregor, prove conclusively that a properly designed concrete building, with as few projecting corners as possible, will withstand long periods of the hottest hard-wood fires, with no resulting damage that cannot be repaired with mortar. These tests were carried out on full-sized rooms with walls of concrete made of different kinds of material.

Concrete for walls can be poured in moulds with sufficient accuracy to permit of painting or wall-papering without further plastering or smoothing, which means that the best of this fire-resisting material is brought to the surface of the wall where the flames would strike. If a fire does occur in a building made with concrete cast in smooth forms, the damage is less than in any other type of building, and the danger of spreading is less. Water does not injure concrete; in fact, it improves its quality. There is no wood to swell and afterwards to shrink and crack the plastering, and no hollow spaces that the water can flow through, damaging the contents below. A concrete building is water-tight from floor to ceiling, and small quantities of water can be easily handled through small scuppers, either into the air space of the vaulted wall or through the wall to the outside. The fire is never hidden by the construction; consequently no unnecessary streams of water are flooded into the building.

In a concrete residence there are few parts that cannot be made better and cheaper of Portland cement than of wood. Chair rails and picture moulding could be made of concrete, and the ornamentation around the windows and doors could be moulded in metal moulds as cheaply as straight members. Windows might have cement sashes, with wired glass, and self-closing shutters or self-dropping shutters of rolled-up metal or asbestos. The flooring need not be of wood. There are many first-class non-combustible materials besides Portland cement that would fill every good requirement of wood and still be fire-proof.

Government could aid fireproof construction by passing laws restricting the use of wood in buildings; by levying taxes, discriminating in favor of fireproof houses and against wood in construction; by teaching the people how to build fireproof houses, by establishing a Government bureau for disseminating information regarding honest and unbiased fire tests on material, together with Government experiments on different full-sized buildings—kinds, types and materials—with bulletins of the progress; by building fireproof houses for the use of the Government Departments, and disseminating information concerning them by means of bulletins. It is not argued that concrete should be used exclusively; there are many cases where other non-combustible materials have special merits but now that a cheaper and incombustible substitute for wood is available, wood construction, wood trim, and wood finish should be legislated and taxed until wood is eliminated from all building construction.

\*Abstract of a paper read before the American Society of Mechanical Engineers.



# THE USE AND VALUE OF COLOR IN ARCHITECTURE\*

By FRED SCATCHARD

"Color is used to assist in the development of form, and to distinguish objects or parts of objects one from another,.....it is the only visual means by which things can be known."

"THE USE AND VALUE OF COLOR in Architecture" is a subject which must almost necessarily appeal to all interested in the progress of art.

Color is used to assist in the development of form, and to distinguish objects or parts of objects one from another, and is also used to assist light and shade, helping the undulations of form by the proper distribution of the several colors.

In certain cases I shall merely point to instances which the study of ancient art shows of the use of color, and indicate what seems its value in works of architecture.

As an introduction, it may be as well to consider the position color holds in relation to man. For, as Nature colors all her works, it can hardly be inappropriate for man to do the same. Mankind has a passionate love for it, whether it be exhibited in Nature's works or in works of art; it is the only visual means by which things can be known.

The Egyptians, Greeks, Persians, Assyrians, and other races enriched their buildings and monuments with color, and the mediæval nations used it in their buildings.

Color applied to buildings is not a new art, not a discovery of modern times, for we have instances of past masters who excelled in this class of work. Ruskin says: "The noblest thing is a building, and its highest virtue, is that it be nobly sculptured or painted." (By the term "painted," he means every mode of applying color.)

In our early modern buildings color seems to have disappeared from the outside. Viollet-le-Duc says in his article on painting: "The Romans during the Empire seem to have been the first people who erected monuments of white marble or stone without color; as to their stucco work this was always colored, whether inside or out." Decorative painting once played a most important part on the outside of buildings. The Notre-Dame at Paris shows the mouldings, columns, and figures decorated by color. The value of color may not be truly gauged, but it can be regarded as an educative power, and a necessity of cultured life, and when applied with due regard to its relative importance it gives a sense of pleasure, interest, and added value to a building which might otherwise be commonplace.

In reviving the uses of color in architecture, we should look to examples of the past as instances of experience for the schooling of the present. The seed is sown, mature it, and study it in its gradual growth until it blooms forth in flowers of richest coloring.

The two principles, then, on which this subject can be based are: first, Structural Decoration; and second, Decorated Construction. Structural Decoration may be defined as that color introduced in buildings by using such materials for the structure as have in themselves the color required for decorating these as works of architecture. Decorated Construction may be defined as, whether build-

ings have, or have not, been decorated by colored materials used constructively, the application of colored or other decoration.

Construction suggests design, and decoration cannot be without design. Flowers are constructed, and, however small or however large a thing may be, the very color of each thing has structure and design. Ruskin said, "that he would not consider architecture in any wise perfect without color, and further thought the colors of architecture should be those of natural stones, partly because they are more durable, and also more perfect and graceful."

In foreign countries proof of the work and use of color in architecture can be seen in the monuments that remain to-day. They are in ruins, but true principles on which evidence can be based are still visible. Religion played a great part, and must have influenced the coloring and treatment of buildings. The Egyptians were great believers, and they based their buildings on religious principles. They believed that without religion no state could stand. Hence the reason we find the Egyptian buildings adorned with figures and sculpture, and most profusely painted. The principles of the Egyptians were based on application, and they possessed great power of conventionalizing natural objects.

In Egypt the most important buildings were covered with applied color, and the use and value of the color in architecture is apparent in all directions. Even their builders were careful designers, and the decorations they used were always carefully designed and treated with color.

The treatment of ceilings was a common subject in Egyptian architecture, and they made great scope in this direction. The colors used by the Egyptians were principally red, blue and yellow, with black and white to define and give distinctiveness to the various colors. Green was used generally, though not universally as a local color.

Structural decoration in color was not often practised by the Egyptians. They used colored, glazed and decorated brickwork, but not to a very large extent. They, however, derived much matter for application in decoration from the suggestions conveyed to them by the structural forms; both in nature and the primitive methods of building in wood and stone.

The Notre-Dame of Paris is a notable example of decoration. The ornaments placed in 1257 on the top of the transept gables were gilt, with grounds of dull red and black. The outside colors were much more vivid than those inside, viz.: bright red tones such as vermilion (glazed with brilliant red,) crude green, orange, black and pure white, etc.

St. Mark's at Venice is another example, as the interior is richly veneered with colored marbles, casing the lower part of the walls; above, and extending in one great surface over vault and dome, is a lining of richly colored glass mosaic, in which are worked figures of saints, mingled with scenes from their lives, set off by a broad background of gold. Mosaic is the real and essen-

\*Full text of paper read before the Leeds and Yorkshire Architectural Society, and republished from the Journal of the Society of Architects (London, Eng.).

tial decoration of the church, to which all architectural detail is subordinated.

Ruskin says of St. Mark's: "that the effects depend not only upon the most delicate sculpture in every part, but also on the most subtle, variable, inexpressible color produced by transparent alabaster, polished marble, and lustrous gold."

St. Mark's is wholly covered with slabs of Greek, Africano, verde antico, and other beautiful marbles.

Many countries show the use of color in architecture, viz.: Babylonia, Assyria, Persia, Greece, etc. The Babylonians, Assyrians and the Persians are three important Asiatic schools. Babylon was situated upon the Euphrates, and developed the brickmaking industry, and cultivated the use of glazed and colored brickwork. Not many of their examples remain, if any, but many beautiful and interesting specimens of decorative skill have been unearthed from the ruins of monuments, etc. The style of the Assyrians seems to have been borrowed from the Egyptians, and modified by the difference of the religion and habits of the Assyrian people. All things architectural were carefully and delicately decorated with colors, especially in the interiors of the buildings. In Persia and India is to be found the most magnificent exposition of extreme color applied externally, and executed too in that splendid material, enamelled earthenware, which is imperishable in a dry climate.

Greek architects used the color with which their works were decorated to emphasize leading features, and to give a fuller expression to such details as they wished to display. Some of the best products of Greek art are to be found at Athens, and these were built chiefly with ivory white marble from Attica. The temple of Theseus, Athens, and the Parthenon are notable Greek examples, which later shows the use of color applied to marble externally.

Color, to be perfect, must have a soft outline or a simple one, and the best examples of the use of same in architecture are to be found in the East.

The Romans were a race of builders who profited by the experience of the past, and wasted little time over failures which would have been certain to overtake them had they neglected what they had the wisdom and modesty to admire. The Romans were aided by the skill of the Greeks, and attempted to make architecture of building without spending the necessary thought, in order to develop from the essentials of their own buildings, that which was required to complete them as works of artistic design. Discoveries of mosaic, enamel, colored materials in structure, metal work, etc., are proofs of what had been done in the Roman cities.

A few words may be said about marble and its uses. It is the most delicate stone, but has been abundantly used in many countries; and in almost every part of a building. In this climate it is only suitable for interior work. Marble is the most beautiful stone that the architect has at his command. The materials which are used for permanent color decoration are marble and mosaic, and these materials hold a foremost position. How many churches are there erected without the use of marble and mosaic

The Westminster Cathedral, by the late Mr. Bentley, is a splendid example of modern work. The interior of this building shows the walls and vaults, etc., lined with these materials, and it is, perhaps, the most striking example of late years, showing the use and value of color in architecture. The Catholics are great believers in color, as used in decorating their churches, especially on the interiors.

The Byzantine decorators in color adopted the glass mosaic method as the chief vehicle by which to express their ideas. This, as well as marble mosaic, had been much favored by the Romans for introducing color in conventional decorative design at an early period. The Byzantine decorators used the Roman method of adopt-

ing the practice of covering their structure internally—if not so much externally—with slabs of colored marbles.

The Church of the "Sancta Sophia," Constantinople, has its walls and piers lined with beautifully colored marbles, and the floors are laid with colored mosaics of various patterns. The vaults and domes are enriched with glass mosaics of the apostles, angels, and saints on a glittering golden ground. Sancta Sophia and St. Mark's, Venice, as mentioned before, are volumes in themselves, showing the use and value of color in architecture. The interior of the church of S. Miniato, near Florence, is an example of the mediæval Italian use of colored materials, and both inside and outside it is structurally decorated in color. This small church was erected during the 12th century, and is an example of its kind showing the use and value of color in architecture.

In our cities and manufacturing towns the architect, in attempting to add the charm of color to his building, has to encounter the smoke demon. Many efforts have been made with various materials, such as glazed earthenware, etc., but such material gives a restless appearance, and is fatal to that repose which color demands when applied to a building. Terra-cotta is much used at the present time. These materials can be washed from time to time, and by this means would be a relief from the ordinary type of brick building; which when continuous have a monotonous effect.

A modern structure in glazed materials is a house in Addison Road, Kensington, designed by Mr. Halsey Ricardo, whose abilities in structural decoration are well known. In this example of domestic work there are intentions which stand for a new development in English architecture. The effects of the city atmosphere have, no doubt, determined the uses of glazed bricks, which are varied in color. The basement story is faced with blue-grey semivitrified Staffordshire bricks; the upper part or framework, as it were, is carried out in Carrara ware of a pinky cream color, relieved in the upper stages by darker bands of the same material. Glazed brickwork is introduced in the panels formed by this Carrara ware, the lower panels being of a soft deep green, and the upper of a bright blue. The roofs are covered with green Spanish tiles. Mr. Ricardo says "that to build with imperishable materials in London, or, indeed, in any manufacturing city, has become now a reasonable aim, and several examples have arisen in response to this desire."

"The erections of to-day have not a fair chance of acquiring the results that a building acquires in a cleaner atmosphere. Time and habitation pull a building together, give it the human look that a new building so sadly lacks. Another course then is open to us, and to attempt this course one must see what can be done with materials able to withstand the corrosion of the atmosphere, and avoid the permanent disfiguration of its impurities." Such materials, to meet these requirements, must be glazed materials, and the whole building must be built of such. The use of glazed materials causes the question of color to crop up. Glazed material is substantially impervious both to rain and wind, and it is a clean material. The use of this material is increasing year by year, and if carefully considered it can produce satisfactory results; proof of which is in the house already described, situate in Addison Road, Kensington.

Before concluding this essay, I will mention some examples in stained glass. If we wish to see some of the finest in the world we have not very far to go. There are examples in Oxford and Cambridge, one being the 14th century stained glass window in the ante-chapel, New College, Oxford. In stained glass the primary colors were chiefly used. The five sisters' window in north transept gable of York Minster is an excellent example.

The same general principles which govern other methods by which decorative art in color and line are practised are also applicable to stained glass. During the period between the 11th and 15th century the use of glass

as a means of introducing color into architectural compositions had been largely developed, if not originally discovered.

In the course of this article I have attempted to describe the use and value of color in architecture by giving a brief outline of the methods adopted by the ancients. It has been found in examining the works of the past that color had always a necessary function to perform in the typical periods during which architecture flourished as a real living exponent of thought. The past instances give evidence showing how closely the chief interests of individuals and communities were linked together by the services of art. The examples that have been quoted help to show the truth of these statements concerning the various purposes served by decoration; and the manner both by structural and applied means in which color was introduced.

It is color which gives a town its look of home, and which unites all its buildings of various styles into unity of character. It is color which can bring us and our architecture into the stream of local tradition, and also into touch with a past which must not be allowed to die.

Had nature applied but one color to all objects they would have been indistinct in form as well as monotonous in aspect.

We must appeal to experience and be indebted to the past for its wondrous works, if we expect to realize our ideals for the future; for color is essential to the completeness of any work of architecture, as distinguished from simple buildings, even if only its aim is to please.

## SAND AND GRAVEL FOR CEMENT AND MORTAR.

*CONSIDERABLE INFORMATION* that may be of value to Canadian architects and builders who are interested in concrete work is published in a bulletin issued by the U.S. Geological Survey, concerning field and laboratory studies made during 1909 of a large number of sands and gravel found in various localities where the erection of federal building had been authorized. One striking feature, says the report, brought out by these investigations, is the great variation in the quality of materials used for concrete aggregates in different places throughout the country. Broadly, the sand and gravels in common use may be grouped into three classes on the basis of origin—(1) glacial deposits; (2) coastal plain deposits; (3) stream deposits. The deposits of the first and second classes have, in many instances, been modified by water action, and the third class may be considered as composed partly of materials derived from deposits of the first two classes and partly of materials derived directly from the breaking down of the country rock. All three classes of deposits contain more or less silt, clay, loam, or other very finely divided impurities.

In many communities the run-of-bank sand and gravel is used directly in concrete work without any attempt being made to clean it, except, perhaps in rare instances, by dry screening or rough sizing. In some cases it has been stated by local contractors that the run-of-bank sand made naturally just the correct theoretical mixture of sand and gravel to produce the least voids in concrete. In practically all cases it has been found by experiment that these suppositions were erroneous, and that to use run-of-bank material for structural concrete work is a haphazard and careless method. It is certain that under such conditions not only is the proportioning and the sizing of the mixture indefinite and variable, but that the large quantities of impurities which are unavoidably included tend to weaken the strength of the concrete. Where gravel is coated with dust or dirt of any kind, the cement is compelled to set against this film of foreign matter rather than against the gravel itself, and is consequently easily broken away from the stone. Where such impurities are mixed with the sand and gravel, the cement can not set perfectly and form a firm bond be-

tween the sand and gravel. In recent years, particularly in the large building centres, there has developed a greater appreciation of the importance of clean sand and gravel for use in concrete and mortar. Leading architects, engineers, and contractors are now demanding in their specifications sound, clean, washed materials, free from dust, loam, clay or any kind of dirt. The soundness of the sand is an important consideration, since not all sands that look good and feel sharp prove to be satisfactory. Some sands are largely composed of grains of limestone and dolomite, and are softer than silica sand, and other sands may contain many grains of feldspar, which easily decays and crumbles. The presence of much mica in small flakes is also deleterious, as well as the presence of grains of pyrite and limonite. It is, of course, impossible to find deposits of sand and gravel that will yield 100 per cent. of desirable material, but it is gratifying to note the improvement that may be effected in a sand or gravel by a suitable process of washing. Where sand or gravel is taken from below water in streams and lakes, a certain amount of washing is accomplished, whatever the process of excavating may be, but where the material is pumped up from a deep stream, agitated in clean water, screened and drained, a very thorough cleaning is generally accomplished. In the case of bank deposits of sand and gravel, the material should be rolled and tumbled about in a rapid jet or stream of water, particularly streams that will size the material and deliver the oversize to a crusher. The crushed material is then returned to the washers and screens in the form of angular fragments, which are a very desirable addition to the aggregate.

*EXPERIMENTS MADE* to determine the effects of frost, if any, on the subsequent hardening properties of cement, mortar and concrete, that have been previously mixed ready for use, are recounted in a paper by H. Burchartz, in the Journal of the Society of Chemical Industry, an abstract from which is published herewith. "Tests were made on two samples of cement, which had been prepared in the dry and wet ways respectively. The cements were mixed with water to a stiff paste, and the times taken for hardening to begin, and for complete setting, under the conditions given below. The temperatures and humidity of the air were noted. (1) The cements were allowed to set under normal conditions. (2) They were kept as nearly as possible at a temperature of 0 deg. C. (3) They were subjected to a temperature of -10 deg. C. for (a) 3 hours, (b) 24 hours, and (c) 3 days. These frozen samples, at the expiration of the time stated, were broken up with the hammer, and after being allowed to thaw, were stirred for 3 minutes. The times for hardening and setting were measured from this point. It was found that preliminary freezing did not affect the times of hardening and setting. The samples kept at 0 deg. C., however, were about four times as long as the other in reaching each stage. The same cements were used to make mortar and concrete. The mortar consisted of 1 part by weight of cement to 3 parts by weight of standard sand. The concrete was made up of 1 part of cement to 5 parts of gravel. Two classes of each were prepared, sufficient water being added to make the mixture (1) 'earth-damp,' and (2) wet. Test pieces were made (1) immediately after mixing, (2) after subjecting to a temperature of about -14 deg. C. for (a) 3 hours, (b) 24 hours, (c) 3 days, and subsequently thawing. The test pieces were allowed to set under damp sand, some for 7 days, and the remainder for 28 days. Tensile and crushing tests were then made. The results showed that cooling for a few hours only had a negligible effect on the hardening of mortar and concrete, but that the rate of hardening was much lower after a prolonged freezing. They also showed in a striking manner that the falling-off of the rate of hardening due to the preliminary freezing was relatively much greater for the "earth-damp" than for the wet mixings.

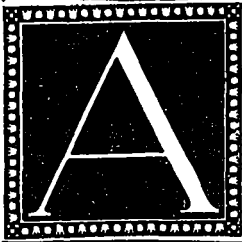


Residence of Mrs. C. C. Cummings, Corner of Hawthorne and Dale Avenues. A Modern House in Character of the Old English Type, Set on a Spacious Site and Built of Credit Valley Random Rubble. J. A. McKenzie, Architect.



Ingle Nook, Residence of Mrs. C. C. Cummings, Toronto, Showing the Wall Paneling and Built-in Shelf and Seats. J. A. McKenzie, Architect.





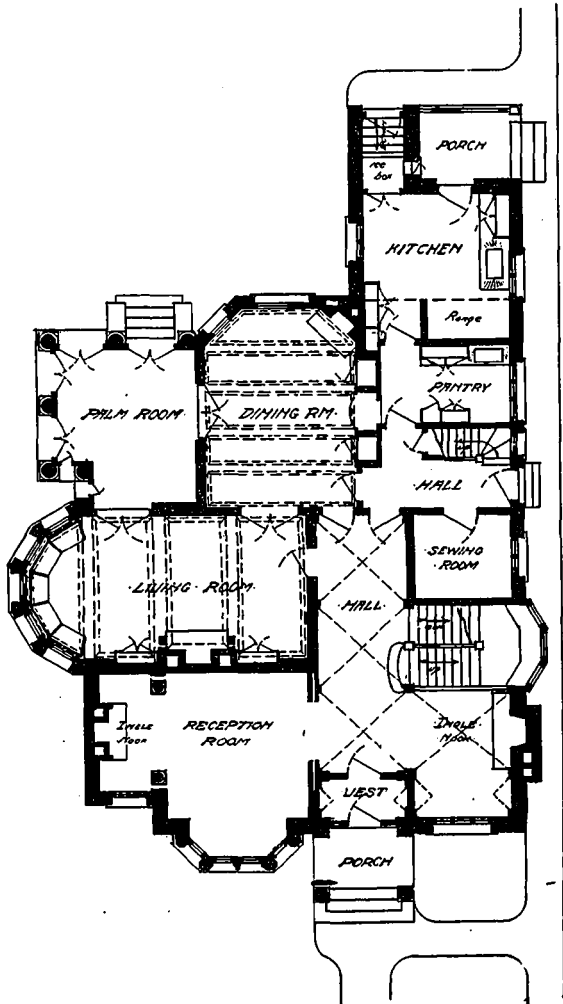
# N ALL-STONE HOUSE OF OLD ENGLISH DESIGN

Residence of Mrs. C. C. Cummings, Toronto,—an unusually interesting house which incorporates a number of noteworthy features both in design and plan.

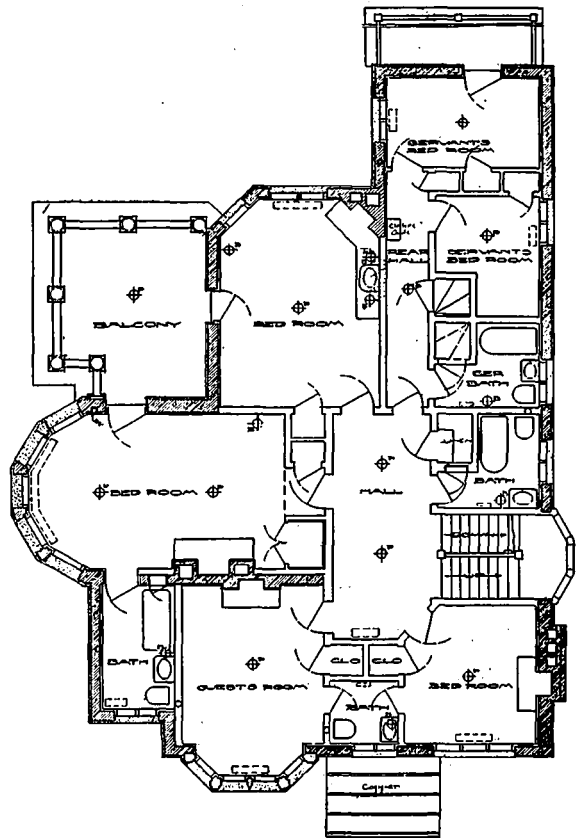
**I**N VIEW of the architectural possibilities of stone as a material for residential work, it is difficult to account for the scarcity of houses of this character in many sections of the country. Especially so, can this be said, when one considers the abundance of good material that is found in many localities. To-day, outside the eastern portion of the Dominion, the all-stone house is more the exception than the rule, and while in Toronto and in several parts of Ontario, there are a number of excellently constructed homes of this type, yet comparatively speaking, such structures are vastly outnumbered by houses that are otherwise considered.

A recently erected Toronto home of stone construction is the residence of Mrs. C. C. Cummings, Hawthorne and Dale avenues, which is designed in character of the old English type of house, with casement windows, numerous fireplaces and beamed ceilings. The walls are built of

Credit Valley random rubble with long thin stones, and the exterior is rather striking on account of its large cornice and English half-timber work in all the gables. The stone work has been very carefully executed, and might easily be taken for an ashlar job, the beds being so nearly parallel, and the rock face being allowed to project as little as possible. The openings are trimmed with Indiana lime-stone, and the deep reveals add very



Ground Floor Plan, Residence of Mrs. C. C. Cummings, Toronto.  
J. A. McKenzie, Architect.



Second Floor Plan, Residence of Mrs. C. C. Cummings, Toronto.  
J. A. McKenzie, Architect.

materially to the substantial nature of the whole structure. This effect is further augmented by a slight drawing of the bay window between the grade and ground floor; while an interesting feature are the columns of the palm room at the rear, which taper gradually into the columns of the balcony above.

Entrance to the vestibule is by a hooded porch with turned columns and paved marble floor, which readily indicates the character of the interior.

The vestibule and hall, which connects directly with all main living rooms, and also the back or servants' hall, is panelled throughout in select quarter cut oak, finished in dark Early English. The ceiling is arched with a series of cross groins, executed in stucco and tinted in a harmonizing tone. A large ingle nook with a broad fire-



Reception Room, Residence of Mr. C. C. Cummings, Toronto. Decorated in Louis XVI. Style with Silk Wall Panels and White Enamelled Woodwork. J. A. McKenzie, Architect.



Corner in Living Room, Residence of Mrs. C. C. Cummings, Toronto, Showing the Tiled Fireplace and Built-in Bookcases. The Walls are Strapped with Moulded Oak and filled in with Leather Panels with a Heavy Plate Rail Above. J. A. McKenzie, Architect.

place, made of Roman brick, is immediately to the right, the shelves above supported on brackets, and the seats being built in. Beyond this, heavy oak stairs with carved newels rise to an oriel landing, provided with a fixed seat and having leaded glass windows of special design. These stairs continue up at the point to the third or attic story, and also give access to the billiard room in basement.

To the left on entering is the reception room, finished in white enamel, and decorated in Louis XVI. style with coved ceiling and cast ornament, all of which was carefully modelled according to the architect's design. The walls are panelled with silk with cast ornament at the corners of each panel. Directly opposite the doorway, is an angle nook with a mantle faced in onyx, and a large mirror above shelf. The floor is of light oak, and the furniture in keeping with the scheme of the room is in Louis XVI. style.

The living room, which adjoins, is twenty-four feet long, including bay, by thirteen feet wide. A feature of this interior is the large mantle and the built in bookcases and window seats. The mantle has 6 in. by 6 in. reddish green

narrow brick with a hammered brass hood is at the end of the room near the window, and a dinner wagon or servery with two china closets, are built-in on the side next to the pantry.

The palm room is enclosed with French doors, between the columns, and is heated by indirect radiation through large registers in the middle of the room, the cold air being drawn down at the base of each column.

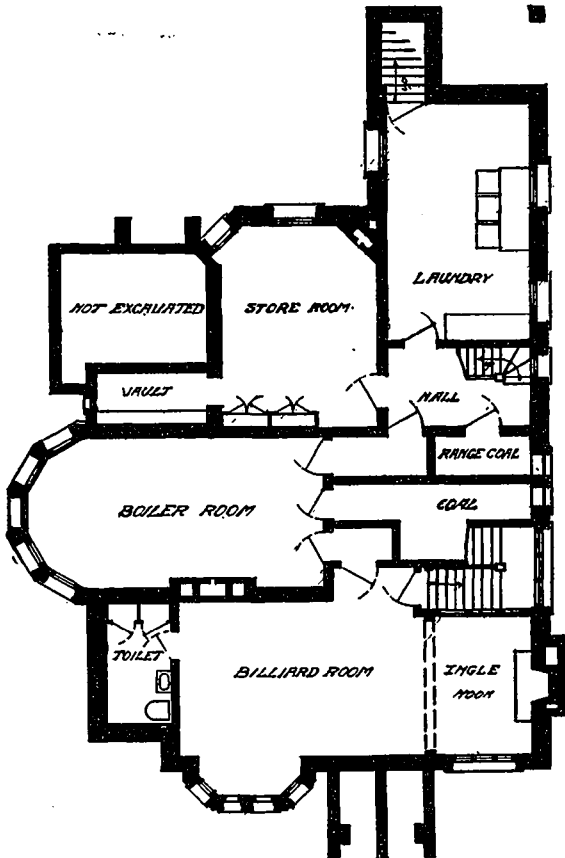
Off the rear hall is a servants' sitting room or sewing, a spacious pantry and a large modern kitchen; the latter room being tiled in glass to the top of doors, and provided with a large combination porcelain zinc and drip board, with cupboards built-in. On the main shelf of the cupboard is a small opening leading to the rear porch with doors flushed on the exterior and interior of wall for milkman to leave his bottles. Connecting into the kitchen is a large built-in ice box having separate compartments lined with opaque tile. The ice is put into this box from the rear porch. The range sets in an alcove and is practically screened from view with a hooded conical top from which a large vent pipe carries the steam and smell of all cooking into a heated flue. In one corner of the kitchen is a cupboard for brooms, etc., and a clothes shute leading to the laundry. The pantry has a counter extending round three sides and is provided with tilting flour bins and numerous small shelves for cutlery, also a copper zinc for diswashing. There is a slide and counter with a revolving barrel underneath connecting pantry to dining room. The house has a very complete set of 'phones, electric bells and indicators throughout.

On the second floor all the principal rooms are finished in pine, with built-in seats in windows and especially designed pine mantles. The seats have panelled sloping backs, with the bottoms as lids over boxes for storage purposes. There are five bedrooms in all, with one used as a sitting room, together with three modern bathrooms, and a large balcony which is closed in during the winter months with a temporary sash. In the servants' quarters, which are placed at the rear of this floor, there are two bedrooms, a bathroom, necessary closet space and a rear balcony. This portion can be shut off from the balance of the house by means of one door.

The attic has three large bedrooms, a large linen closet and a large fur closet lined with Spanish cedar. Over the bay of the living room in the attic is a unique girls' play-room, with seats, bookcases and radiators, all fitted up like a room in miniature. The ceiling is five feet and the door is four feet six inches. This room is octagonal in shape, with small windows in several sizes, and is plastered and decorated. This floor also has a bathroom. The bathrooms are all tiled to the top of doors, and all closets are supplied and furnished by tanks in the attic. The bath-tubs in the two principal bedrooms are porcelain recess tubs built-in and tiled close up to the top.

The basement contains a large laundry with three porcelain tubs, a work-table, drying attachment and clothes shute. There is also a large store-room with a fireproof vault and fireproof door. The boiler room is equipped with a pair of twin Daisy boilers connected up to be used in tandem or separately. There are separate hot water risers and returns to every part of the house with neatly stamped tags on valves controlling same, so that any part of the system may be cut out without interfering with the balance. The equipment also includes a large sized independent heater and a large sized domestic hot water tank, which assures hot water whether the other heaters are working or not. The billiard room, which is located in the front part of the basement, is finished in ash, and has a large brick mantle and stucco ceiling, the walls being burlapped and strapped in ash with a moulded dado cap.

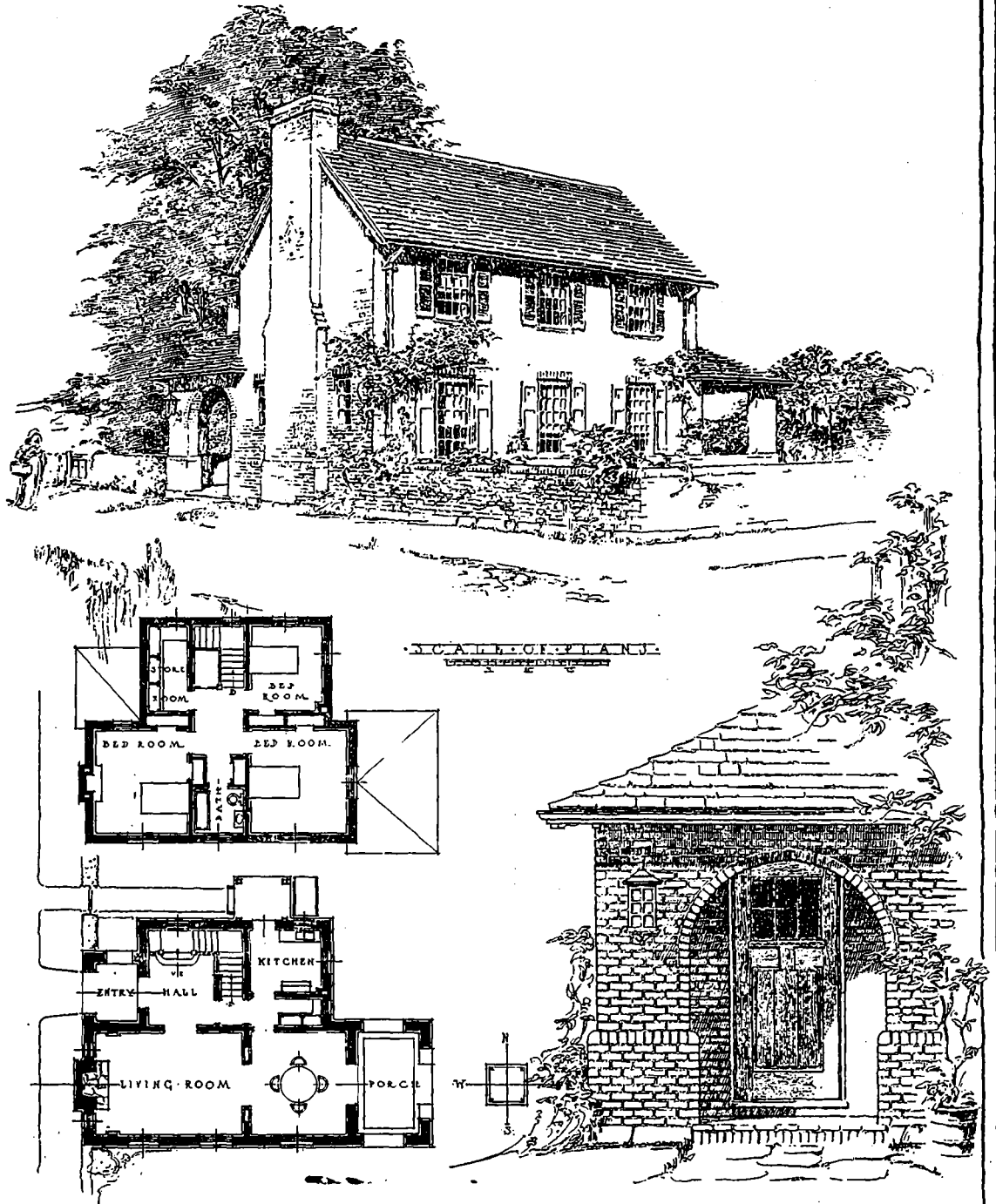
The house itself faces the east, and the plan was carefully laid out so that each room will, during some portion of the day, receive its quota of sunshine. It was also placed on the lot in deference to the beautiful old oaks and elms that make it so attractive. The designing and supervising architect was J. A. McKenzie, Toronto.



Basement Plan, Residence of Mrs. C. C. Cummings, Toronto. J. A. McKenzie, Architect.

tiles, with a hammered brass hood and turned oak columns. The window seats, which fit into the large bay, are made of oak with plenty of slope to back and bottoms to make them luxurious and comfortable. These entirely conceal from view the radiators which run under the five windows, the hot air passing up through the oak slats between the seat backs and the stool of the window. The wall scheme is carried out in leather, strapped with moulded oak, and has a heavy bracketed plate rail running round the room over doors, while the ceiling has heavy oak beams with stucco between.

Double French doors, broken into small lights, connect the living room, dining room, and palm room, one with the other. In the dining room, the walls are panelled to the top of door with large veneer circassian walnut panels, and finished above the plate rail with an ornamental frieze; the ceiling being broken into fine panels by heavy circassian walnut beams. A fireplace of small



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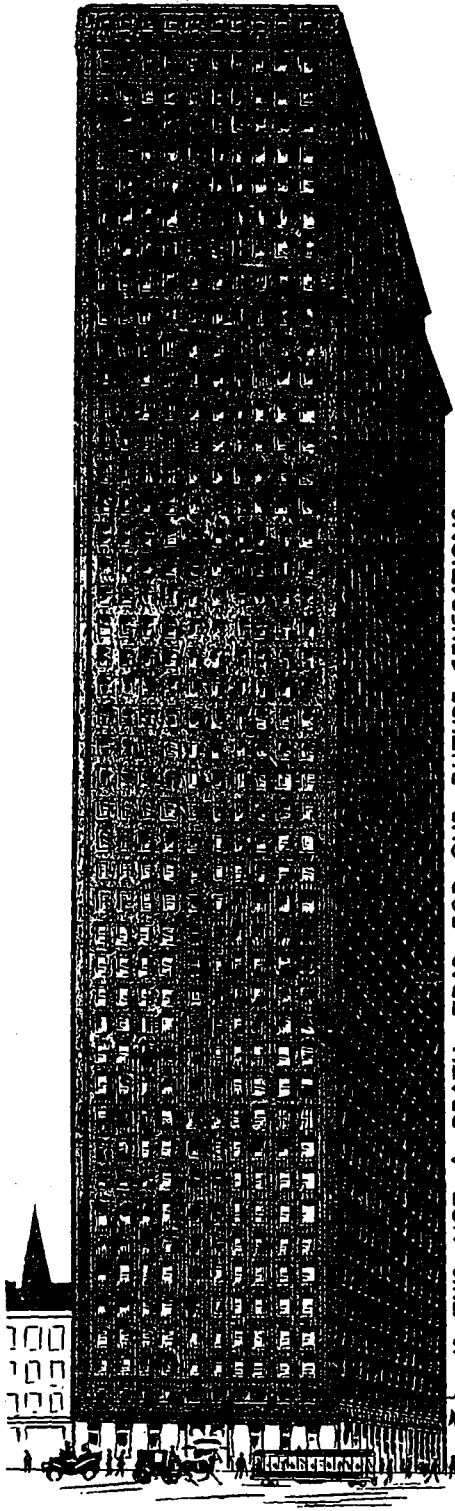
# BRICKS

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A DEPARTMENT DEALING  
WITH THE ARCHITECTURAL  
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BRICK HINTS FOR THE ARCHITECT-BRICK  
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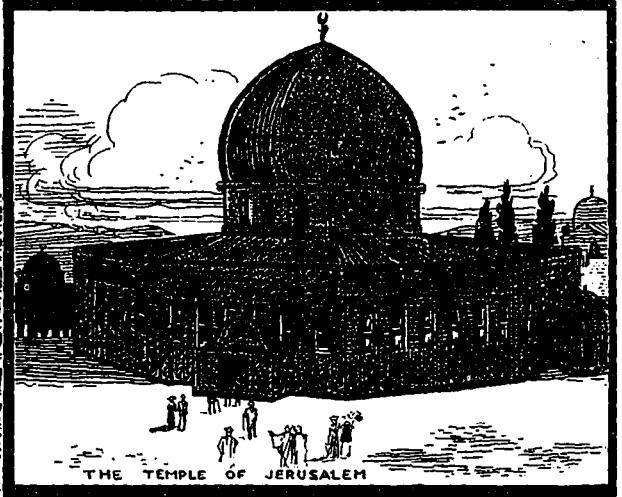
IS THIS NOT A DEATH TRAP FOR OUR FUTURE GENERATIONS



**ANNOUNCEMENT** has been made that a forty-five story office building is to be erected in New York City, which will be 625 feet from the basement to the top of the tower, 13 feet higher than the Singer Building. In this connection, the following

statement by Mr. Berg, in his article on the opposite page, is most significant: "Every structure should be built so that the base would be in proportion to the height, and so constructed that if certain materials should fail through rust or deterioration the structure itself would not fall down and destroy other property in its collapse. In this connection I mean to draw attention to certain structures in many places in the United States which have been built up in a disproportionate manner; some of them possibly 100 feet wide and 300 or 400 feet in length, and from 40 to 50 stories high. These invariably are of steel frame construction, and in many cases a very low grade of rolled steel or iron is employed. Investigation has shown that many elements are acting on such steel and that in some cases rust has greatly weakened the structural members. As is generally known, steel contracts and expands with heat and cold; crystallizes with electrolysis, and rusts, deteriorates and scales through atmospheric changes. Consequently, in the erection of our buildings, we should take that precaution in the selection of our materials that will assure our structure standing where weaknesses of this kind develop."

It is to be hoped that we, in Canada, will never find it necessary to go to such an extreme in office building construction as is illustrated in the accompanying comparative diagrams.



THE TEMPLE OF JERUSALEM

Comparative Diagrams Showing the Extremes to which Modern Builders Have Gone in the Erection of High Buildings. Mr. Berg in his Article on the Opposite Page Maintains that these Lof.y Structures are a Menace to the Life and Property of Future Generations.



# THE BRICK INDUSTRY IN CANADA

By A. BERG

The Dominion's resources in raw materials, and the importance of properly equipped plants. Character of bricks produced and methods of manufacture employed.

IT IS POSSIBLE to make bricks in many different ways, and to produce bricks of many qualities. The purpose of this article, however, is to deal briefly with the methods of manufacture, and the character of bricks commonly employed in this country. When we speak of brick making, we must not only consider the industry from the standpoint of manufacture alone, but also from what is equally important, the standpoint of profit. It is, therefore, advisable to take certain conditions into consideration, as well made brick not only finds a ready market, but also brings the manufacturers a substantial return on his investment. While it is highly important to have proper materials, it is equally as essential to have proper machinery, capable management, and a plant so organized that it can be run the year round regardless of weather conditions. All of this, of course, means that the equipment installed must be the best adapted for the purpose required, and also that the plant must have the right kind of a drying system, and proper kilns. It is of little avail to discuss the individual choice of brick, as each and every person may have his set ideas or prejudices in this respect. For factories and ordinary buildings, say up to four stories in height, the selection of brick is not in itself a serious matter, nor one that requires any great restriction as to quality. What is known as stock brick or common mud brick, which, in most cases, is made from top soil, is quite generally employed in such structures. When properly manufactured this product turns a dark flat color, and it is adopted by many for residential work of the less expensive type. Although such bricks vary considerable in quality, it must be said that in Toronto bricks of high grade, capable of standing a fair crushing test, are made by this process.

Paving brick, or vitrified brick, and in this connection might be mentioned, hollow tile and terra cotta, are manufactured by what is termed the "stiff mud process." These bricks are frequently turned out in large quantities, and if the material is of a suitable character, a very strong brick, as a rule, is produced. Of course, much depends on the machinery equipment, proper driers, and well constructed kilns, but where a plant is thoroughly considered in this respect, it can be operated at a big profit, especially so, if it is provided with down draft or continuous kilns and waste heat drying system. Recent improvements have done much for this branch of the industry, and machines are now made with an individual capacity of from 50,000 to 200,000 first-class bricks per day. These bricks are principally used for paving, and in some few instances for the exterior of buildings, but rarely on the interior. A very high grade of material burned to vitrification, will stand a very high crushing test, varying possibly from 4,000 to 9,000 pounds per square inch. The ~~best~~ such brick will not deteriorate and go back to dust, but is, practically speaking, a piece of metal that is not susceptible to disintegration.

Bricks manufactured according to the so-called "dry press process" are made from either clay or shale, the so called shale or shale-clay being preferred. This method of manufacture is greatly growing in favor, and is gradually coming to be recognized as the best and easiest way of producing a high-grade brick that can be put on the

market at a good profit. In this process, especially with shale, the most important thing is to have strongly constructed and accurately adjusted machinery so that a heavy, even pressure can be applied at the right time, thus making a dense and solid brick throughout the whole body, which will properly vitrify in the burning. It is imperative that the shale material should be uniformly and hard pressed before an attempt is made to burn it; as where the proper pressure is not exerted throughout the body of the brick, it cannot be burned to solidity, but on the contrary becomes very spongy, and almost useless as a building material. In many cases in the past, mechanical inefficiency and carelessness in this respect, has been a curse to the pressed brick industry, and has incidentally incurred many big failures. A well built and well equipped plant will turn out at least 95 per cent. of high grade bricks from every kiln, while the remaining 5 per cent. taken from the bag wall, or where the hardest fire would strike them, forms a residue of clinkers. Some four years ago it was publicly stated that pressed brick could not be successfully made in Canada, outside of one or two places in Ontario. This, however, has since been disproven by facts, as we find there is an abundance of material in various parts of the country that will not only make a high-grade product, but that stand both quick burning and quick drying. In several parts in and about Ontario, with a good plant, the right kind of equipment and capable management, a first-class article can easily be manufactured at \$4 a thousand and less, and of a quality which at the present time should not for any reason be marketed for less than from \$15 to \$25 per thousand. The particular brick referred to is also metallic in character, and like paving brick, stands from 4,000 to 9,000 pounds per square inch, besides being practically immune from deterioration. In appearance, it is very smooth and handsome, being produced in different colors, ranging from buff to dark red, according to the material employed, and it is the choice of many individuals for residences of the better class. We also frequently find this kind of brick for facing business buildings on the street side, but the interior and side and rear walls are invariably laid up with a lower grade material. While appearance is essential, structural efficiency is uppermost, and it is difficult to understand in this latter respect, how one part of a building is not considered just as important as the other, especially so, in warehouses or office buildings where heavy loads are carried on the walls. If the so-called "stiff mud bricks" which are equally as high in crushing strength as the facing brick, were used for the interior and rear wall construction, a building of this class would practically endure for all time to come. Inferior brick made out of low grade materials, and low in crushing strength, should not be recognized as suitable for this class of work in buildings ranging from six stories upwards, and according to the writer's opinion, it would be advisable for the building authorities to carefully give this matter their respectful consideration.

In many parts of the country where a good quality shale or clay is not available, a product known as sand-lime or silicate brick is being successfully manufactured and extensively used in many important buildings. We

know that silica is a very pure and high grade sand, and that it has been used these many years in the production of glass. Exhaustive tests show that these bricks have a crushing strength from 2,000 to 6,000 pounds per square inch, and that they improve with age, in that the brick when subject to atmospheric changes becomes practically a hard impervious sandstone that will neither crumble, flake, nor deteriorate. With a high grade silica or a silica sand, and a modernly built and well equipped plant, the production of this character of brick is easily accomplished. Care, however, should at all times be exerted in the method of manufacture, and the raw materials should be put through a cleaning and drying system before being transferred to the storage bin. The lime should be treated by steam until thoroughly slacked, and then placed, in a pulverized state, in a separate bin. Proper mixing and measuring are very essential, and especially designed machinery has been invented for this particular purpose. The proper proportions are from 5 to 6 per cent. of high carbon lime to 94 per cent. of good sand. After passing through the measuring and drying machines, the mixture is transferred to another mixer, and a small quantity of water is added. The material is then moulded by a powerful machine, which is capable of exerting a 1,700 ton pressure, and which makes the brick sufficiently strong so that it can be easily handled to cars, having a capacity of 1,000 bricks each, and conveyed to the hardening cylinders, which holds in one unit 22,000 bricks. While in the hardening cylinder, the brick is subjected to a high steam pressure, which is taken away from the engines after the day's pressing is over. This process thoroughly penetrates them, and forms a chemical action through the carbonate of lime and fine silica, which perfectly cures the brick, and makes the product ready for the market in twelve hours' time. This branch of the industry is a very profitable one, and a thoroughly considered plant can be operated either in dry or wet weather the year round.

In this connection a word might be said about building construction in general. They who have the power to recommend, should exercise the greatest discretion as to the material to be used. We must not only consider our own immediate needs, but the future as well, and should therefore build our structures so that they will not endanger life and property, either during the present time or in years to come. Personally, I should dislike to have the responsibility laid at my door for recommending the construction of buildings that will deteriorate and collapse; and my hope is that we shall be sincere in our efforts in this respect, and do our duty to our fellow-men in a manner that will redound to our credit many years hence. No material stands higher in structural efficiency than well made brick. Canada, which has a most brilliant future before her, and prodigious resources for growing grain, is also blessed with an abundance of suitable materials for making all kinds of bricks; and what is more, facilities for manufacturing high-grade machinery for such purposes, and practical men with engineering skill to design and construct a thoroughly modern plant in every detail. We have, in short, if we have the ability to recognize them, advantages in this respect that enable us to co-operate within ourselves, and to build up a home industry that would substantially add to our industrial strength and prestige.

Previous in this article, I have referred to brick as a piece of metal that will not either rust nor deteriorate. This in itself ~~equally implies that well made brick~~ has the stability of character of good steel, but unlike metal is not susceptible to disintegration. That is where the advantage of brick lies. All materials should be carefully examined so that in their use, their life for safety could be determined and a limit placed thereon, and the possibility of a collapse avoided. Life and property are assets which no community can hold lightly, and if we are careful in the selection of materials for our buildings, and in encouraging others to be so, we render a service that stamps us as being both progressive and

sincere. Every structure should be built so that the base would be in proportion to the height, and so constructed that if certain materials should fail through rust or deterioration, the structure itself would not fall down and destroy other property in its collapse. In this connection, I mean to draw attention to certain structures in many places in the United States which have been built up in a disproportionate manner; some of them possibly 100 feet wide and 300 or 400 feet in length, and from 40 to 50 stories high. These invariably are of steel-frame construction, and in many cases a very low grade of rolled steel or iron is employed. Investigation has shown that many elements are acting on such steel, and that in some cases, rust has greatly weakened the structural members. As is generally known, steel contracts and expands with heat and cold; crystallizes with electrolysis, and rusts, deteriorates and scales through atmospheric changes. Consequently, in the erection of our buildings, we should take that precaution in the selection of our materials that will assure our structure standing where weaknesses of this kind develop. As bearing out my statement in this respect, I append herewith an article entitled, "Rust as Shown in the Removing of a Seventeen Story Building," by T. Kennard Thomson, M. Am., S.O.C.E., which says:

The Gillender Building, a seventeen-story structure, at the north-west corner of Wall and Nassau Streets, New York City, was built in 1896, and removed in 1910.

When built, all the columns were encased in solid brickwork. The steelwork received one coat of paint in the shop and two after erection, but on removal showed little evidence of having been painted at all.

From the top to the bottom, wherever the spaces between the brick and steel were filled with Portland cement mortar, there was no rusting, but, wherever the mortar did not fill such space completely, rusting had begun. Generally the undersides of the top and bottom flanges of the floor beams had begun to show rust while the web and upper surfaces, having been in contact with mortar, were in good condition.

The worst rusting of all was from the sixth floor down, on the north-east corner, where the columns had been against the adjoining building on the north side. The cover plates of these columns looked as if they had never been painted, but had stood in the open, exposed to all weather, for 6 or 7 years. On these columns one-half, in volume, of many rivet heads could easily be removed.

This building had been erected by first-class contractors and with first-class materials, although the rusting had not yet made the building unsafe, there is no telling how soon it would have become so.

It would seem that if the columns had been encased and filled with wet concrete there would have been little danger of rust, and they could thus easily have been protected from electrolysis. Oil or oil paints should not be placed on steel to be thus encased.

Messrs. Trowbridge and Livingston are the architects for the thirty-nine story Bankers' Trust Building which will take the place of the Gillender Building, and Messrs. Marc Eidlitz and Son are the contractors, to whom the writer gives his thanks.

IN ORDER to be more conveniently in touch with architects and contractors, the Roman Stone Company, Toronto, has moved its head office from the factory at 90-100 Marlborough avenue to Suite 504 505 Temple Building. Owing to its many excellent qualities, "Roman Stone" is rapidly growing in favor, and is being broadly specified throughout the country. The company has enjoyed a very successful season, and reports a number of important contracts on hand at the present time.



## POSITION OF A.I.A. ON COMPETITION PROGRAMMES.—Cont'd from Page 48.

at last reached the conclusion that the most effective means within its command for the improvement of competition practice lies in seeing to it that its own members do not take part in ill-regulated competitions.

Architects generally have for many years regarded the Institute as the highest authority on the ethics of the profession, and the Institute is certainly within its province when it instructs its members as to what is good competition practice and requires them to conform to it, just as when it instructs them on other questions of professional ethics and requires them to conform to these instructions.

In consonance with these thoughts, the convention of 1907 adopted certain principles as in its opinion fundamental to the proper conduct of competitions, while that of 1908 decided that any competition not conducted in accordance with them should be formally disapproved by the Institute.

In practice it was found that it was impossible to gain a knowledge of all or even of any large proportion of the competitions throughout the country so as to disapprove those not in harmony with the Institute's principles. It was also difficult and expensive to notify all members each time that a competition was disapproved. Thus many badly conducted competitions escaped attention and were open to the participation of members.

It became obvious that the converse of this scheme provided a more practicable course. The convention of 1909, therefore, adopted the principle that participation in any competition the program of which has not been approved by the Institute is unprofessional conduct.

The convention gave the board authority to approve acceptable programs and power to delegate that authority. Thus it became necessary for the board to establish a standard by which to test programs submitted for approval. Fortunately, the opinion of the profession as to the essentials of a good program being well crystallized, the board found its task easier than it had anticipated.

The formulation of these essentials resulted in a "Circular of Advice Relative to the Conduct of Architectural Competitions" which serves the purpose of informing the public on the whole subject; of instructing architects as to what the Institute regards as good practice; of strengthening the position of advisers chosen to conduct competitions as well as of setting up a standard to which programs must conform if they are to receive the approval of the Institute.

The board delegated its power of approval to the Standing Committee on Competitions and to a sub-committee for the territory of each Chapter. Each of these sub-committees deals only with competitions for work to be executed within its own territory. Programs for work not within the territory of any Chapter are passed upon by the Standing Committee.

The Circular of Advice is, in general, an essay on competitions and it is in the main—as its name indicates—merely an advisory document. The board found comparatively few things so essential to the proper conduct of a competition as to be made mandatory. Its instructions to the committees charged with giving the Institute's approval are that the program should conform to the spirit of the Circular of Advice, but as this statement might be interpreted in various ways, more specific directions are given:

1. Approval must be withheld if a program appear not to be in consonance with law.
2. Except the law require an open competition, approval may not be given to one in which no precautions are taken that the competitors are competent to design and execute the work.
3. As experience shows that unless a professional adviser be in charge of them, competitions are almost always hopelessly bad, the Institute will give its approval to no competition that is not in charge of such an adviser.
4. The Institute will approve no program that does not constitute a contract between the owner and competitors guaranteeing that an award of the commission to design and supervise the work will be made to one of the competitors, nor will it sanction a program which fails to establish the terms of the winner's employment as those of the Institute's schedule. There must also be provision for adequate compensation in case of the architect's dismissal or of the abandonment of the work.

It would seem that no argument is necessary to show that, lacking any of the above requirements, the programme fails to reach such a standard as the Institute should set for its members.

A brief summary of the advisory portions of the circular would show that they treat the subject as follows:

1. It is pointed out that competitions are not generally to the advantage of the owner, that it is better to employ an architect on the basis of his fitness for the work and that if a competition must be held, the interests of the owner will be best served by equitable and definite agreements between himself and the competitors.
2. The role of Professional Adviser is defined and his employment urged.
3. The owner is advised not to hold a competition open to all comers, but to carefully select his competitors.
4. The kinds of competition recognized by the Institute are defined.
5. Strict anonymity of competitors is urged.
6. The owner is advised to avoid various pitfalls in respect to the cost of the proposed work, competitors' and builders' estimates, etc.
7. The owner is urged to receive the advice of a competent jury before making the award.
8. Reasons are given why drawings should be as few in number and simple in character as will express the general design of the building.
9. A programme is outlined in detail, some twenty statements being made as to its essential contents.
10. The question of what constitute proper agreements between

owner and competitors, and between owner and winner is treated at length.

11. The proper conduct of architects and of the owner is considered. The circular was issued upon the 30th of March, 1910, and was widely circulated among members of the profession and the public generally through owners, editors, educators, etc. Copies of it may be obtained from Mr. Glenn Brown, secretary of the American Institute of Architects, the Octagon, Washington, D.C. Its reception was marked by general approval and it has since then been in successful operation. Many programs have been brought into harmony with its requirements and have received the approval of the Institute. In some instances, the owner on receiving the circular has decided to abandon the idea of a competition, and has chosen his architect directly, a much to be desired result. In the instances in which the program was not brought into harmony with the principles approved by the Institute, the results have justified members in not taking part in the competition, since the outcome in most cases shows either failure to appoint any competitor as architect or failure to proceed with the work for which the competition was held.

Very truly yours,

Frank Miles Day,  
Chairman.



## PRIZE DESIGNS FOR A SMALL BRICK HOUSE

Awards in recent competition conducted by the "Brick Builder," Boston—Of interest to designers and architect students.

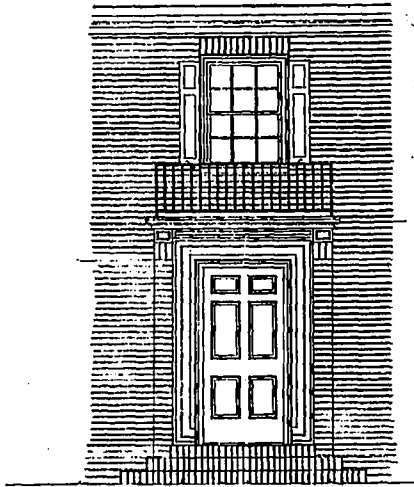
THE DEVELOPMENT OF BRICK, in domestic architectural design, has been more pronounced in moderate priced dwelling in England, possibly, than any other country in the world. The domestic architecture of England is, without question, superior to residential design in any other country in the world, and the English designer of moderate priced dwellings is truly a builder in brick. During the past decade, however, the architects of the Eastern States in the American Union have shown a strong tendency toward the development of the artistic application of brick in dwellings, from the moderate priced cottage to the luxurious mansion, and it may be said that in this connection they have done some noteworthy work, and the brick buildings as designed to-day by architects of ability are of a vastly better type than those erected twenty years ago. There is no question about the fact that the architectural possibilities of brick, especially in domestic work, even to-day are not thoroughly appreciated by many of our architects. The recent work of our Canadian architects has shown a better appreciation of possibilities of this grand old building material in their higher priced residences, but we have not as yet developed as much as we should have in the artistic and practical use of bricks in the moderate and low-priced dwellings.

The "Brickbuilder," of Boston, recently conducted a competition for a brick house to cost \$4,000, and the designs submitted which were awarded prizes are, to say the least, most interesting. The report of the Jury of Award as published in the "Brickbuilder" was as follows:

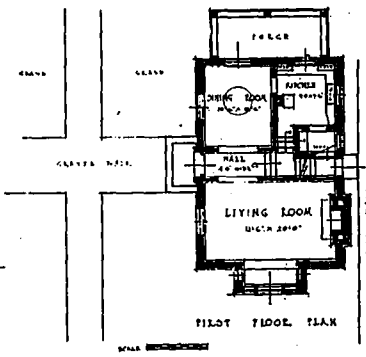
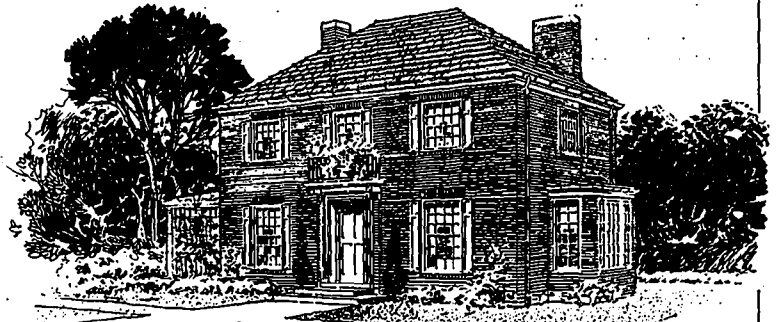
The mandatory conditions of the program for this competition (A Brick House, the cost not to exceed \$4,000.00) necessarily made the problem rather a difficult one if the condition as to cost was to be met, and it was so recognized by the jury, who approached their part of the problem in rather a skeptical frame of mind as to the ability of any one to produce a design which should meet this condition and at the same time have the charm and good planning which should be demanded in a competition of this kind. It was recognized by the judges that in the vast majority of competitions for low priced houses held within the past few years, apparently no attention had been paid to the condition as to cost, whereas, in practice, in houses of this class it is a vital factor, a small variation from the limit set being of serious importance to the prospective builder of a moderate cost house.

After consideration, \$5.00 was agreed upon as a fair price per square foot, though it was recognized as rather low for building in the immediate vicinity of the larger

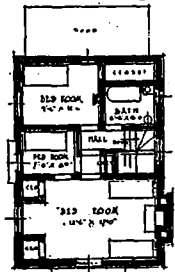
4000 DOLLAR  
BRICK HOUSE  
BRICKBUILDER COMPETITION  
SUBMITTED BY [initials]



SKETCH OF ENTRANCE

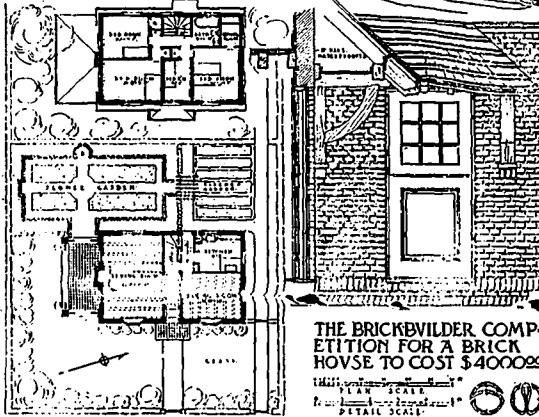


FIRST FLOOR PLAN



SECOND FLOOR PLAN

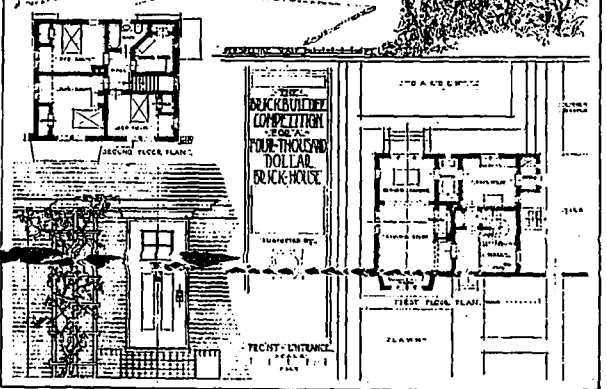
Second Prize Design, Competition for a Small Brick House, Submitted by Francis D. Bulman, Boston, Mass.



THE BRICKBUILDER COMPETITION FOR A BRICK HOUSE TO COST \$4000.00

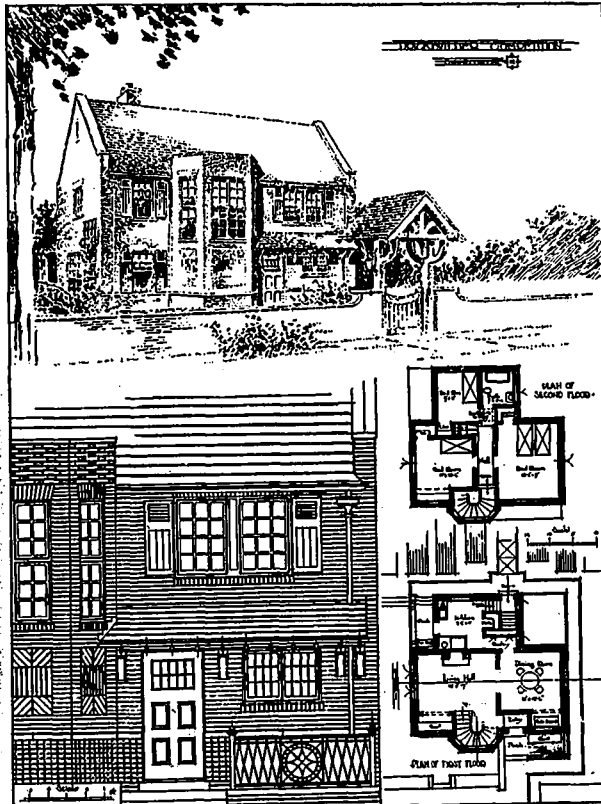
1/8" = 1'-0" SCALE  
FOR GENERAL REFERENCE  
DETAIL SCALE

Third Prize Design, Competition for a Small Brick House, Submitted by Stewart Wagner, New York City.

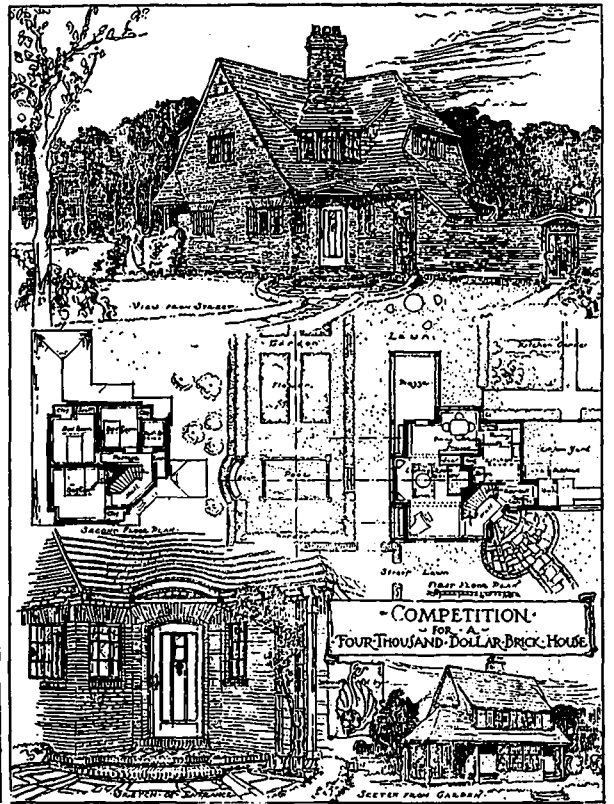


THE BRICKBUILDER COMPETITION FOR A FOUR-THOUSAND DOLLAR BRICK HOUSE

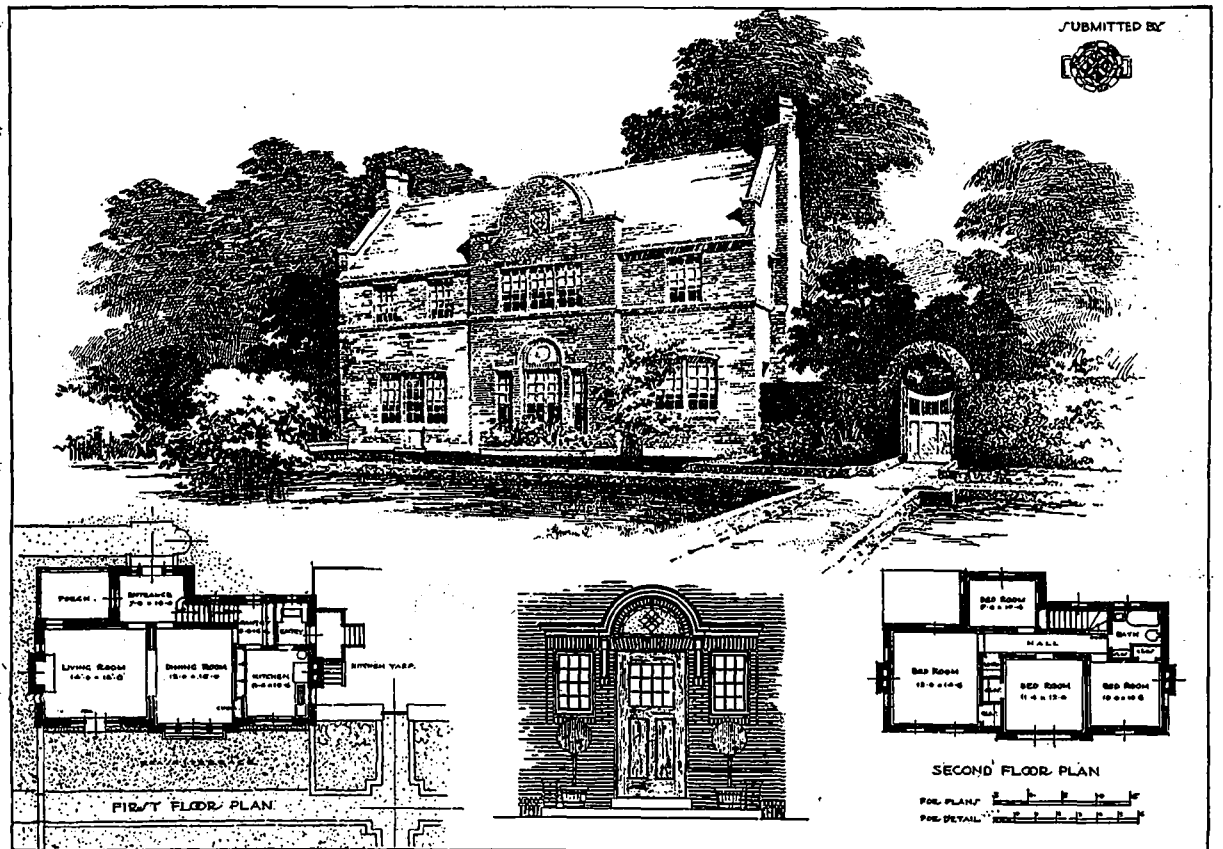
Fourth Prize Design, Competition for a Small Brick House, Submitted by A. R. Nadel, Boston, Mass.



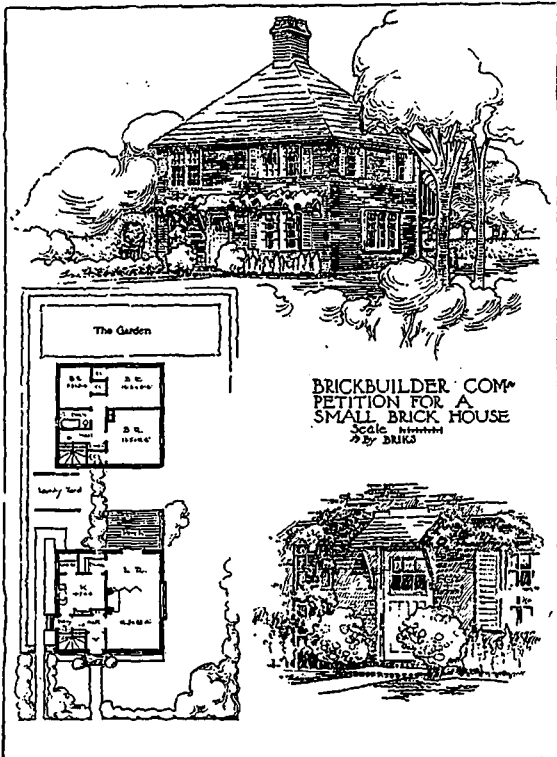
First Mention Design, Competition for a Small Brick House, Submitted by C. Edward Arneemann, Weehawken, N.J.



Second Mention Design, Competition for a Small Brick House, Submitted by D. D. Barnes and W. A. Neale, Boston, Mass.



Third Mention Design, Competition for a Small Brick House, Submitted by Charles F. Hogeboom, Brooklyn, N.Y.



Fourth Mention Design, Submitted by Albert G. Hopkins, Boston, Mass.



Fifth Mention Design, Submitted by Charles D. Schneider, Cleveland, Ohio.

cities. This set a limit of 800 square feet to the allowable area. While this simplified the work of the judges in considering the three hundred and twelve designs submitted, they were disappointed in the large number which were necessarily ruled out of competition; nevertheless it was felt that after this test the best designs remained for further consideration. The problem necessarily demanded great simplicity both in plan and elevation, and its solution a careful discrimination as to what should and what should not be included in a house of this class. The conditions of the program made the plan of secondary consideration; their practicability and general arrangement were, however, steadily kept in mind.

**First Prize.** A very able and charming design with good details, a design which would be most interesting if executed. The plan is one of the best arranged and effective of those submitted.

**Second Prize.** A very simple and characteristic brick design of the Colonial type, which would depend for its effectiveness very largely on the texture of brick and method of laying. The cornice is unfortunately weak. The plan, however, is excellent, and the design one, on the whole, which gives the greatest promise of being built within the appropriation.

**Third Prize.** A simple, straightforward design, economical in plan and construction. While the second floor has been sacrificed by the method of roofing the gain in economy is justified by the results on the exterior. The second floor would be improved if there were but one room over the living room—three bedrooms being all that could reasonably be required in a house of this character.

**Fourth Prize.** A design rather reminiscent of English work and one which would probably be even more interesting in execution than in the drawing.

**First Mention.** A good brick design which is injured by the large scale of the openings in the stair bay, while the composition is hurt by the importance given to the entrance gate.

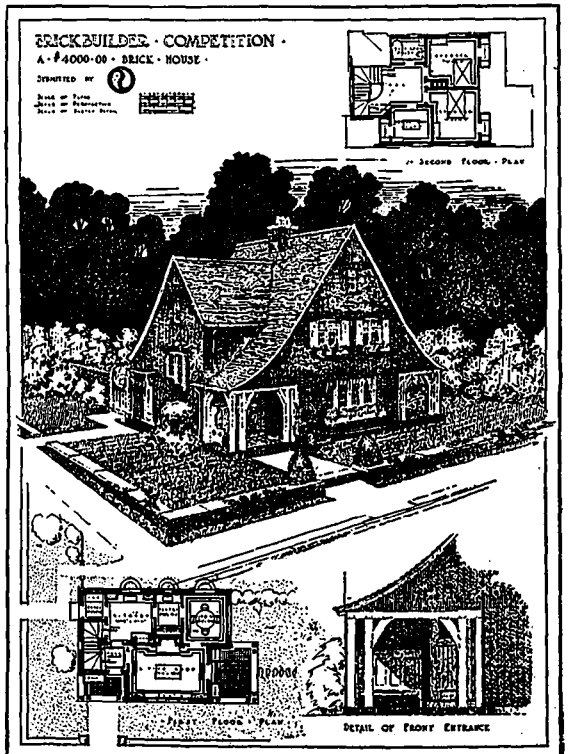
**Second Mention.** An interesting and unusual plan. The garden elevation is the simpler and the better of the two given.

**Third Mention.** A very interesting treatment beautifully presented. The details are good but would add materially to the cost of construction.

**Fourth Mention.** A design which on account of its great simplicity is a good solution of the problem; one which would again depend largely for its effect on the kind of brick work and method of laying.

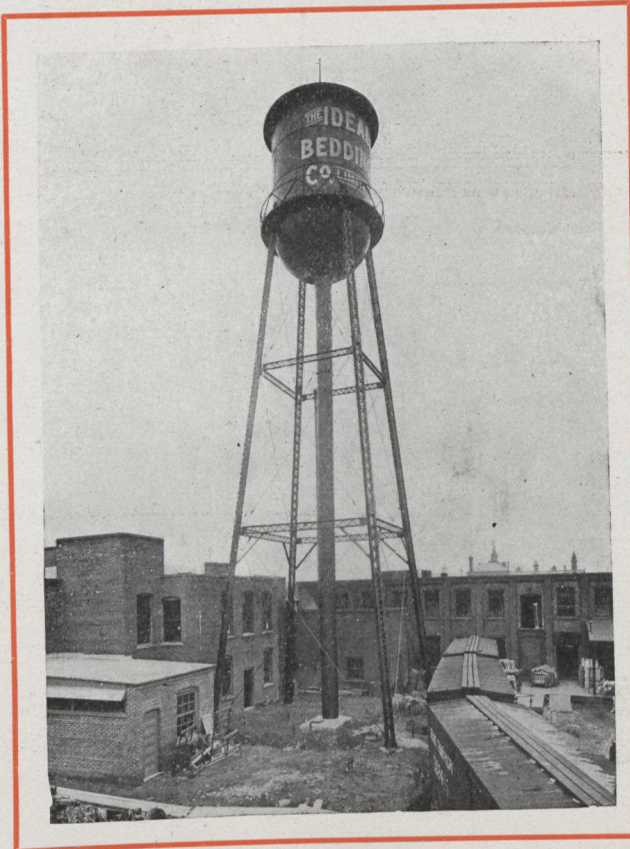
**Fifth Mention.** This design was felt to be rather too much broken up and lacking in the simplicity requisite for a house of this class, though interesting in its effect.

**Sixth Mention.** This design is the most picturesque of all the designs considered. It is, however, hardly fitted to be carried out entirely in brick.



Sixth Mention Design, Submitted by Howard A. Goodspeed, Boston, Mass.

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*THE DOUGALL VARNISH COMPANY*, Limited, successors to McCaskill, Dougall and Company, Montreal, announced that they will be in their new office and factory at the corner of Manufacturers' and D'Argenson Sts., Point St. Charles, by the first of the year. Owing to an alliance recently entered into by this firm and the Murphy Varnish Company, of Newark, N.J., the later concern will furnish the McDougall Company with their formulas and processes for fine cabinet and architectural varnish, and henceforth these varnishes will be manufactured in Montreal, by expert varnish makers who have been engaged for this purpose. In this new departure, the company will maintain that high standard of general excellency, which has resulted in their railway and carriage varnishes, being so broadly known and adopted throughout the Dominion; and architects and cabinet and piano makers will be enabled to obtain in the home market high quality and durable varnishes, that will meet, in every particular, their most exacting requirements. Mr. Dougall still retains his interest in the new concern, and will continue as its president and managing director. The new offices and factory of the company will be model in every way and with the combined experience of both firms at its command, the company is in a position to manufacture products of a quality that will find a large and ready demand.

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## CORRECTION

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*WE BEG* to take this opportunity to correct an error in connection with the advertisement of Benjamin Moore and Company, Toronto, appearing in our November issue, which stated that their "iron-clad paints" were used on the steel work of the new Pennsylvania Terminus, New York. This should have read "The Grand Central Station," a contract possibly of equal importance and magnitude. It might be mentioned, however, as regards the Pennsylvania Station, that the "Benjamin Moore products" were broadly specified, as is evidenced by the fact that the company supplied more "concrete paint" for this structure than all other concerns put together. The selection in either of the above cases, was made purely on the basis of quality, and it is upon this basis that the company has built up its large business, both in Canada and the United States. One of the reasons for this firm's success, is the fact that they have made a business of specialization and have therefore been in a position to market the highest quality paints and products that can be manufactured for architectural and structural purposes. Among their specialties are such well known products, other than those previously mentioned, as "Muresco" Wall Finish, "Sani-Flat" Oil paint, and "Impervo Brand" Varnish. Over a half million pounds of "Muresco" alone, were sold in Canada this year.

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## ELECTRICAL SUPPLIES

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*THE BRUSH ELECTRICAL ENGINEERING COMPANY*, Limited, of London and Loughborough, one of the leading engineering concerns in England, has es-

tablished a Canadian branch through the Canada Ford Company, Canadian Express Building, Montreal, who will handle all their well-known manufactures, including steam turbines, high speed engines, electric generators, motors, transformers, electric lamps, fans and other apparatus, steam and electric locomotive, and street car and underground rolling stock.

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## "BITUNAMEL"

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*THE PROBLEM OF PROTECTING* steel and iron from rust and corrosion is something which at the present time is giving engineers and architects no little concern. Investigations have shown in a large number of instances that where proper precautions are not taken in this respect, that the structural life of such materials is infinitely less than originally calculated. Possibly nothing can be cited to more fully bear out this point than the Gillingier Building, New York, a 17-story structure which was recently razed to make way for a larger and more important building. Despite the fact that the steel work had been given three coats of paint, it was found during the process of demolition that rust had developed in certain parts of the structure to an alarming degree, especially from the sixth floor down; and that in general there was very little or no evidence of paint having been used at all.

What is claimed to be one of the best protectives for steel and iron work is known "Bitunamel," an enamel-like coating of a bituminous nature manufactured by the Ault and Wiborg Company, Toronto. Although comparatively new in Canada, this product has been used extensively in the British Isles, where for a number of years back it has successfully withstood the test of a damp and wet atmospheric conditions. Steel plate, pontoons and water tanks coated with "Bitunamel" from 10 to 18 years ago are still perfectly protected, with absolutely no indication of rust or corrosion. Nothing perhaps attests to its virtue in this respect more than the fact that "Bitunamel" is employed on the Cunard Liners and other ocean going vessels as a protection against the action of the salt water. Besides being possessed of great elasticity and tenacity, this product has a great covering capacity and is easily applied, one coat usually being sufficient in most cases. In addition to its advantages for steel work "Bitunamel" is also used extensively for water-proofing stone and concrete foundations, and is being employed in this particular on a number of important structures throughout Canada, including Burwash Hall at Victoria College, Toronto. Samples and full information regarding the many merits of this product, together with a list of buildings and structures on which it is employed, will be sent to architects, engineers and owners upon request.

---

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*MR. CHAS. W. FORTUNE*, Heating and Ventilating Engineer, who has been identified with Sheldon, Limited, of Galt, Ont., has severed his connection with that firm, and is now associated with the Bennett and Wright Company, Limited, 72 E. Queen Street, Toronto. Mr. Fortune has a large circle of friends and acquaintances whose wishes for success follow him to his new position.

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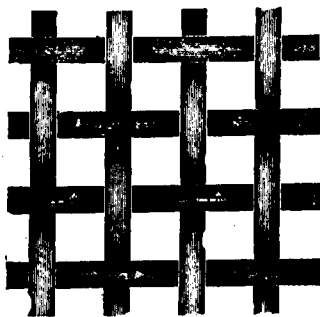
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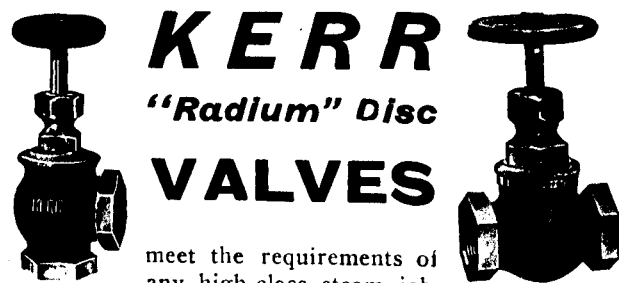
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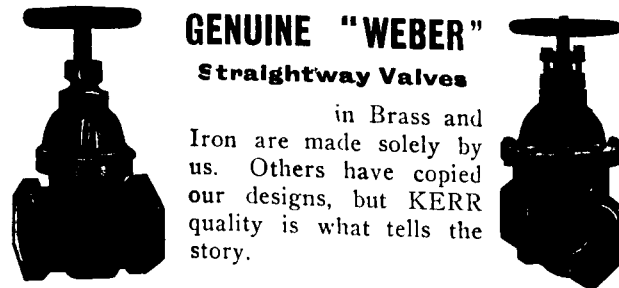
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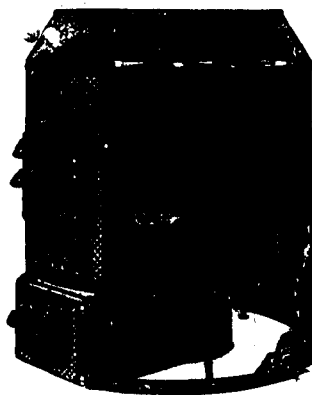
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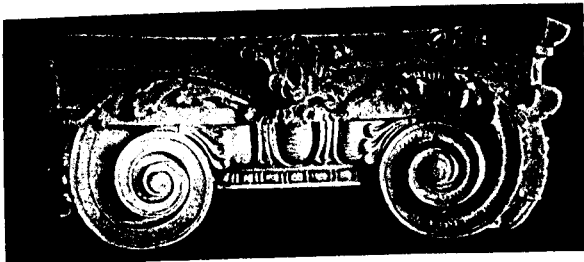
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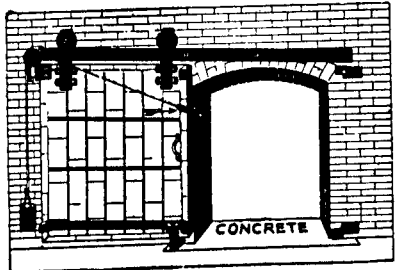
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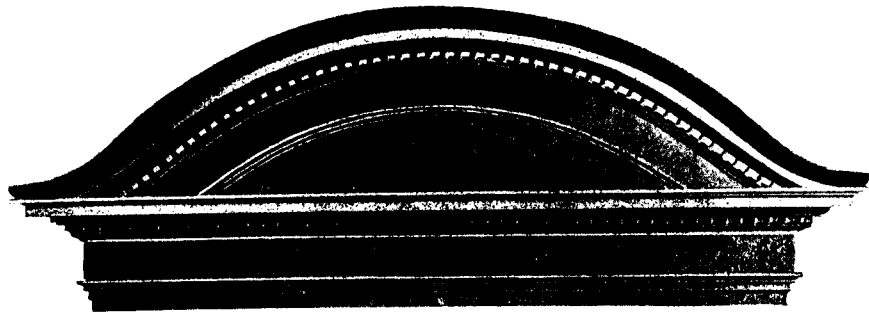
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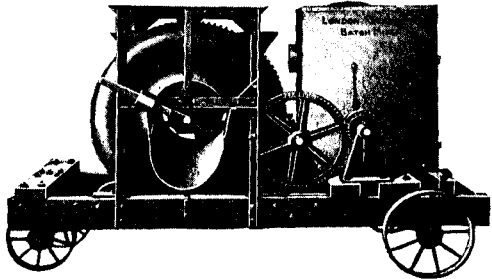
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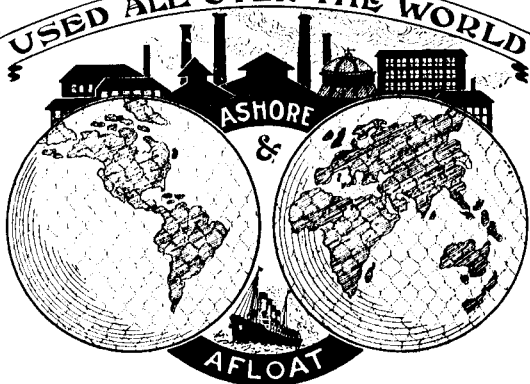
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