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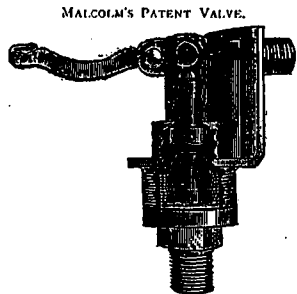
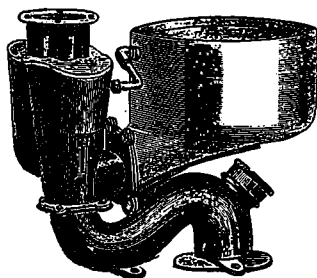
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INDEX.

<p>A</p> <p>Accessories of Architecture 104, 127</p> <p>American Criticism 101</p> <p>American Institute of Architects 122</p> <p>American Architect, Canadian Correspondence of 62, 63</p> <p>An Advertising Fraud 113</p> <p>Apartment Houses 11</p> <p>Architectural Association for Province of Quebec 2</p> <p>Architectural Associations, formation of in Montreal and Quebec 14</p> <p>Architecture, School of 111</p> <p>Architecture, Bill respecting practice of in Ontario 15</p> <p>Architectural Plans, Customs Duty on 53, 74</p> <p>Architecture under Nationalism 99, 100</p> <p>Architecture without Decoration 11, 12</p> <p>Architecture 92</p> <p>Art Education 91</p> <p>Artistic in Electrical Work 91</p> <p>B</p> <p>Board of Trade Buildings, Toronto 54</p> <p>Bricks, Damage to 61</p> <p>British Columbia Marble 79</p> <p>Bridge Building, First Principle of 20</p> <p>Building By-Law, Hamilton 134</p> <p>Building By-Law, Toronto, 14, 76, 87</p> <p>Building Inspectors, Duties of 26</p> <p>Building Inspector, Hamilton, appointment of 37</p> <p>Building By-laws, Disregard of 38, 61</p> <p>Building Inspection in Montreal 74</p> <p>Building Permits, System of Granting 86</p> <p>Building Stones, Canadian 138</p> <p>C</p> <p>Canadian Architect and Builder, Vol. III 1</p> <p>Canadian Architect and Builder, Intermediate Edition 133</p> <p>Canadian Architect and Builder, close of Vol. III 13</p> <p>Canadian vs. Foreign Architecture 86</p> <p>Canadian Society Civil Engineers, Annual Dinner of 18</p> <p>Cement, Rules Regarding 83</p> <p>Church Architecture 32, 53</p> <p>Church Designs, Competition for 134</p> <p>City Engineer, Toronto, Appointment of 13</p> <p>City Engineer, Toronto, powers of 25</p> <p>City Architect for Toronto 25</p> <p>Competitions 7, 14, 30, 97</p> <p>Competitions, C. A. & B. series of 4, 5, 7, 17, 19, 29, 46, 137</p> <p>Correspondence, 3, 6, 9, 10, 16, 18, 28, 29, 30, 34, 35, 44, 58, 65, 66, 67, 74, 111, 140</p> <p>D</p> <p>Day Labor vs. Contract System 37, 122, 124</p> <p>Decoration 31, 32, 33, 80, 98</p> <p>Defective Construction in Buildings 77</p> <p>Design for Cathedral of St. John the Divine, N. Y., competition 16</p> <p>Dishonest Contractors 26</p> <p>Dishonorable Practice 110</p> <p>Draughtsmen, Remuneration of 2</p> <p>Durand, Geo. F., Death of 4</p> <p>E</p> <p>Executive Council O. A. A., appointment of 73</p> <p>Elevators, Inspection of 97</p> <p>Engineering and Architecture 99</p> <p>F</p> <p>Fashion, A Sensible 93</p> <p>Federated Association of Builders, Toronto 84</p> <p>Fire Alarm Systems 98</p> <p>Fire Protection in Small Towns 76</p> <p>Fire Proofing, the Advantages of 87</p> <p>Fire Prevention 123</p> <p>Foundations, Sandy 35</p> <p>Foundations, Limiting Pressure upon 35</p> <p>G</p> <p>Gothic, Notes on Connection between different Styles of 42</p> <p>H</p> <p>Heating, Cost of 38</p> <p>Heating and Ventilation, C. A. & B. Competition Essay on 59</p> <p>Hospital Construction 73</p> <p>Hours of Labor 85</p> <p>Howard Memorial 86, 97</p> <p>Home Planning, Rules on 55, 56</p> <p>House Drains 69</p> <p>I</p> <p>Import Duty on Iron Pipe 109</p>	<p>L</p> <p>Labor Agitators 74, 79</p> <p>Lead Pipe, Strength of 10, 81</p> <p>Lead Pipe, Bursting Pressure of 23</p> <p>Loyalty to Canadian Manufacturers 79, 111</p> <p>M</p> <p>Mechanics' Lien Act 63, 79</p> <p>Medical Health Office, Toronto 100</p> <p>Montreal Subway Co. 14, 25</p> <p>Montreal Harbor Improvement 61</p> <p>N</p> <p>National Association of Builders 27</p> <p>Northern Pacific Ry. Building, Winnipeg, Accident to 13</p> <p>O</p> <p>Official Seal, Design for 80</p> <p>Office Management 110</p> <p>Office Routine 7, 8</p> <p>Ontario Architects' Act 38, 49, 50, 75, 76</p> <p>Ontario Association of Architects, 88, 97, 134, 135, 137</p> <p>Outside Tenderers, Unjust Treatment of 98</p> <p>P</p> <p>Parliament Buildings, Ontario 51, 53, 61</p> <p>Pavements, Montreal 186</p> <p>Pavements, Toronto 122</p> <p>Pavements, Damage to from Underground Conduits 73</p> <p>Paving Materials, Wearing Qualities of 125</p> <p>Planning, Good 125</p> <p>Plan of Offices for Confederation Life Building 42</p> <p>Plans for Proposed St. George's Society Building competition 75</p> <p>Plumbing Inspection, Toronto, Efficiency of 13</p> <p>Plumbers' Hours and Wages 109</p> <p>Plumbing Law, Changes Desired in 35</p> <p>Plumbers' Work as Applied to the Duties of Plumbing, Essay on, C. A. & B. competition 22, 33, 34</p> <p>Plumbing By-Law, Toronto 133</p> <p>Sanitary Inspectors 79</p> <p>Police Buildings, Toronto 3</p> <p>Primitive Canadian Architecture, a Monument of 97</p> <p>Province of Quebec Association of Architects, Organization of 110, 112</p> <p>Public Baths 109</p> <p>Q</p> <p>Quebec City Hall Competition 2, 112, 131</p> <p>Quebec Landslide, Responsibility for 79</p> <p>R</p> <p>Registration, Act of 63</p> <p>Relations of Architects to Clients 122</p> <p>Report on Competition of Sun Life Assurance Co.'s Building 5</p> <p>Ridenn Hall, Cost of Maintenance of 25</p> <p>Rights of Property Owners 61</p> <p>S</p> <p>Sanitary Appliances, the Plumber and His Client 21</p> <p>Scaffolding, Proper Construction of 91</p> <p>Scaffolding, Inspector of 37</p> <p>School of Practical Science, Engineering Society of 37</p> <p>Sewers, Brick vs. Pipe for 37</p> <p>Sewer, Sectional, St. George's Patent 139</p> <p>Sewage, Disposal of 131</p> <p>Strikes 39, 49, 49, 62</p> <p>Street Commissioner, Appointment of in Hamilton 49</p> <p>St. George Bridge Disaster, Causes of 49</p> <p>St. Clair Tunnel 98</p> <p>Steele, Obituary of 140</p> <p>T</p> <p>Taste 68</p> <p>Technical Schools for Toronto 2, 74</p> <p>The Ability of Architects to Estimate 2</p> <p>Timber, Good 81</p> <p>Timber, Rot in 67</p> <p>Toronto University, Destruction of 25</p> <p>Toronto City Buildings, Clerk of Works for Toronto Collegiate Institute Building Competition 62</p> <p>Toronto Harbor Protection 86</p> <p>Toronto Esplanade Problem 99</p> <p>Toronto Engineering Problems 69</p> <p>Toronto Art Students' League, Exhibit of 59</p> <p>Toronto Architectural Sketch Club, 6, 17, 26, 28, 45, 53, 65, 68, 102, 125, 126, 136, 140</p> <p>Toronto's Water Supply 110</p> <p>Tower, Project for Erection of 1</p> <p>Training of Architectural Students 121</p> <p>Tyranny of Trades Unions 99, 109</p>	<p>U</p> <p>Unsafe Construction 38, 50, 79, 122</p> <p>V</p> <p>Viaduct, Cost of 26</p> <p>Venice 103</p> <p>W</p> <p>Wind Pressure, Resistance to 1</p> <p>Woodstock Court House 97, 100, 101</p> <p>ILLUSTRATIONS.</p> <p>A</p> <p>Architectural offices Page 123</p> <p>Athletic Club House, Toronto No. XII</p> <p>B</p> <p>Bath-room, Design for No. I</p> <p>C</p> <p>Cathedral St. John the Divine, N. Y. No. II</p> <p>Christ Church, Mimico No. VI</p> <p>Collingwood Market No. XI</p> <p>Confederation Life Assurance Building No. III</p> <p>Congregational Church, Hazelton Avenue, Toronto No. IX</p> <p>D</p> <p>Durand, Mr. Geo. F. Page 4</p> <p>E</p> <p>Eglise De St. Marie, De La Bencee No. VII</p> <p>Entrance to a Residence No. III</p> <p>F</p> <p>Front Fence Designs No. VI</p> <p>Front Porch Designs No. I</p> <p>H</p> <p>House in North Street, Toronto No. XII</p> <p>House in Queen's Park, Toronto No. XI</p> <p>I</p> <p>Inside Finish No. X</p> <p>L</p> <p>Longueil Church, P. Q. No. IX</p> <p>M</p> <p>Mantels, Wood and Brick No. VIII</p> <p>P</p> <p>Page, Portrait of John Page 88</p> <p>Panels, etc. No. VIII</p> <p>Plan for Cathedral of St. John the Divine, N. Y. No. II</p> <p>Plan of Confederation Life Assurance Building Nos. III, VI</p> <p>Police Buildings, Toronto No. I</p> <p>Portraits Executive Officers Ontario and Quebec Associations of Architects No. XII</p> <p>R</p> <p>Reception Hall, Summer Residence at Dorval, Que. No. VII</p> <p>Residence, Farley Avenue No. IX</p> <p>Residence for M. D. Barr, No. X</p> <p>Residence at Montreal No. VI</p> <p>Residence at Port Arthur No. II</p> <p>Royal Victoria Hospital, Montreal No. XII</p> <p>S</p> <p>Sculpture Details No. III</p> <p>Sketch of Church, Smith's Falls No. IV</p> <p>Sketch of Residence at Rosedale No. V</p> <p>St. Andrew's Church, Kingston No. V</p> <p>St. Andrew's Church, Memorial Window No. V</p> <p>St. Andrew's Church, Interior of No. V</p> <p>St. Mary's Church, Hamilton No. II</p> <p>T</p> <p>Toronto Architectural Sketch Club Competition for "A Cottage by the Sea." No. XII</p> <p>Toronto University No. XI</p> <p>V</p> <p>Villa at Hyacinthe, Que. No. X</p>
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INDEX TO ADVERTISEMENTS.

ARCHITECTS.	Page	CREOSOTE STAINS.	Page	PAINTS, VARNISHES, &c.	Page
Directory	III	Cabot, Samuel	x	Andrew Muirhead	x
ARCHITECTURAL IRON WORK.		ELECTRIC BELLS.	Page	PIANOS.	
Bairnsm Wire & Iron Works	I	Galvanic Battery Works	v	Mason & Risch	ix
Cowan, W. W.	II	ELEVATORS.	Page	PLATE GLASS.	
Clendinning & Son, W.	IV	Miller Bros. & Toms.	vii	McCausland & Son	ix
Ives & Co., H. R.	I	ENGRAVERS.		Toronto Plate Glass Importing Co.	xii
ARCHITECTURAL SCULPTORS.		Armstrong Photo-Eng. Co.	iii	PLUMBERS.	
Guliel, F. B.	III	Canadian Photo-Eng. Bureau	iii	Bennett & Wright	III
Hicks, W. Stevens	III	Lalshaw, R.	iii	PLUMBING SUPPLIES.	
Holbrook & Mollington	III	Toronto Engraving Co.	iii	Higman, O.	v
Turner Frederic	III	FOOT POWER MACHINERY.		Keith & Fitzsimons	xi
ARCHITECTURAL STONE WORK.		Barnes Co., W. F. & J.	xi	Malcolm, W. B.	iv
J. B. Stringer & Co.	ii	FURNACES.		Mitchell & Co., Robert	IV
ART FURNITURE.		Burrow Stewart & Milne	x	Robertson & Co., Thos.	IV
Wright & Co.	viii	Clare Bros. & Co.	v	ROOFERS AND ROOFING MATERIALS.	
BRASS WORKS.		Williams & Co., J. M.	xii	Can. Galvanizing & Steel Roofing Co.	I
Mitchell & Co., Robt.	IV	GALVANIZING IRON WORKS.		Merchant & Co.	viii
BRICK MACHINERY.		Baird Bros.	iii	Metallic Roofing Co.	II
Laidlaw Mfg. Co.	II	Can. Galvanizing & Steel Roofing Co.	vi	Rennie & Son, R.	III
BRICKS (PRESSED).		Ormsby, A. B.	iii	SANITARY APPLIANCES.	
Hynes Terra Cotta & Brick Co.	vi	Tucker & Dillon	iii	Booth & Son	II
Savage, R. D.	vi	GRANOLITHIC.		Higman, O.	v
Toronto Pressed Brick & Terra Cotta Co.	ii	Forsyth, Robert	iv	Malcolm, W. B.	i
BRIDGE WORKS.		HEATING.		SEWER PIPE.	
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Rathbun Co.	vi	Williams, J. M. & Co.	xii	Terry, Edward	iv
BUILDING STONE.		LEAD PIPE.		SHINGLE STAINS.	
Lyall, Peter	iii	Thos. Robertson & Co.	IV	Cabot, Samuel	x
Oakley, Geo.	xi	LYGAL.		SKYLIGHTS, &c.	
Rathbun Co.	vi	Denton & Dods	xi	Baird Bros.	ii
Savage, R. D.	ii	MANTELS AND OVERMANTELS.		Ormsby, A. B.	iii
BUILDERS' HARDWARE.		Tait & Co.	III	Tucker & Dillon	vii
Aikenhead & Crombie	v	Wright & Co.	viii	SLIDING BLINDS.	
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Humphrey, T. R.	xi	Metallic Roofing Co.	II	Tisdale Co., B. G.	x
Lyall, Peter	iii	MINERAL WOOL.		STAINED AND DECORATIVE GLASS.	
Redmond, Joseph	xi	Gast & Atcheson	ii	Bell Art Stained Glass Works	II
Simpson, Wm.	xi	Savage, R. D.	xi	Castle & Son	ii
Stevens, Chas. H.	xi	OFFICE AND SCHOOL FURNITURE.		Dominion Stained Glass Co.	IV
CEMENTS.		Canadian Office & School Furniture Co.	vii	Longhurst & Co., H.	II
McNally & Co., Wm.	II	ORNAMENTAL PLASTERERS.		Lyon, N. T.	III
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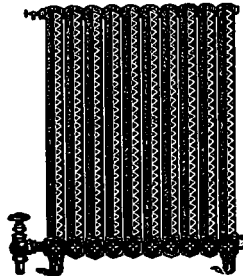
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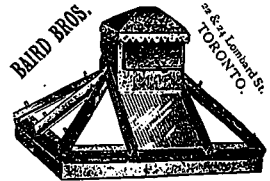
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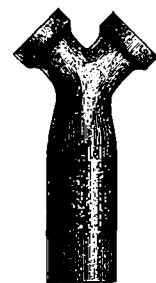
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Cull scantling	8 00	9 00
1/2 and thicker cutting up plank	22 00	25 00
1 inch strips, 4 in. to 8 in. mill run	14 00	15 00
1 inch strips, common	11 00	12 00
1/2 inch flooring	14 00	15 00
1/4 inch flooring	14 00	16 00
XX shingles, sawn	2 30	2 35
XX shingles, sawn	1 30	1 35

Eastlake galvanized steel shingles, 24 W. G., per square	5 25
Eastlake galvanized steel shingles, 16 W. G., per square	5 00
Eastlake painted steel shingles, per sq.	4 00
Eastlake painted steel siding, per sq.	3 50
Manitoba galvanized steel siding, per square	4 50
Manitoba painted steel siding, per sq.	3 50
Special galvanized steel siding, per sq.	4 50
Special painted steel siding, per sq.	3 50
Imitation brick siding, per square	1 50

YARD QUOTATIONS.

Mill cull boards and scantling	10 00
Shipping cull boards, premissuous widths	13 00
Shipping cull boards, 18 in.	14 00
Hemlock cantling and joist up to 16 ft.	11 00
" " " 18 " "	12 00
" " " 20 " "	13 00
Scantling and joist, up to 16 ft.	12 00
" " " 18 ft.	14 00
" " " 20 ft.	15 00
" " " 22 ft.	16 00
" " " 24 ft.	17 00
" " " 26 ft.	18 00
" " " 28 ft.	19 00
" " " 30 ft.	20 00
" " " 32 ft.	21 00
" " " 34 ft.	22 00
" " " 36 ft.	23 00
" " " 38 ft.	24 00
" " " 40 to 44 ft.	25 00

Cutting up planks, 1/2 and thicker, dry	25 00
" " board	20 00
Dressing stocks	16 00
Picks, American inspection	40 00
Three uppers, American inspection	50 00
Cedar for block paving, per cord	5 00
Cedar for Kerling, 4 x 14, per M.	14 00

1/2 inch flooring, dressed, F. M.	28 00	32 00
1/2 inch flooring rough, B. M.	18 00	22 00
1/2 " dressed, F. M.	25 00	28 00
1/2 " dressed, B. M.	18 00	19 00
" " dressed	18 00	22 00
" " undressed	12 00	15 00
Dressed sheeting, dressed	22 00	25 00
Clapboards, dressed	18 00	22 00
XXX sawn shingles, per M, 16 in.	2 65	2 75
Sawn lath	2 00	2 20
Red oak	30 00	40 00
White	25 00	35 00
Basswood, No. 1 and 2	18 00	20 00
Cherry, No. 1 and 2	70 00	70 00
White oak, No. 1 and 2	25 00	25 00
Black ash, No. 1 and 2	20 00	20 00

BRICK—P. M.

Common Walling	\$ 2 50
Good Facing	10 00
Sewer	9 50

Pressed Bricks:

Plain brick, f. o. b. at Milton, per M.	\$8 00
" " and quality, per M.	13 00
Ornamental brick, at Milton, per 100.	\$3 10 00

Stone:

Common Rubble, Per Ton, delivered	14 00
Large flat	18 00
Foundation Blocks, " Cubic Foot.	35

Slats: Roofing (per square).

" red	16 00
" purple	9 00
" unglazing green	9 00
" black slate	10 00
Teem Cotta Tile, per sq.	25 00
Ornamental Black Slate Roofing	8 00

Sand:

Per Load of 1/2 Cubic Yards	1 25
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PAINTS. (In Oil, P. H.)

White lead, Can.	6 7 50
" zinc, Can.	6 1/2 50
Red lead, Eng.	6 1/2 50
" venetian	6 1/2 50
" vermilion	30 00
" Indian, Eng.	10 00
Yellow ochre	6 1/2 12
Yellow chrome	15 25
Green, chrome	7 12
" " "	7 12
Black, lamp	15 25
Blue, ultramarine	15 25
Oil, linseed, raw (1 Imp. gallon)	15 25
" " boiled	15 25
" " refined	6 7 50

Putty.....	2 1/2	2 1/2
Whiting, dry.....	75	1 00
Paris white Eng., dry.....	1 00	1 00
Libberg, Am.....	6 1/2	8
Sienna, burnt.....	1 1/2	20
Umber.....	1 1/2	13 1/2

CEMENT, LIME, etc.

Lime, Per Barrel of 2 bushels, Grey.....	35	55
" " " " White.....	2 00	2 00
Plaster, Calcined, New Brunswick.....	2 00	2 00
" " " " Nova Scotia.....	1 00	1 00
Hair, Plasterers', per keg.....	2 25	2 25
Cement, Portland, per bbl.....	1 50	1 50
" " Thorold, ".....	1 50	1 50
" " Queenston, ".....	1 50	1 50
" " Napanee, ".....	1 50	1 50

HARDWARE.

Cut Nails:

American Pattern, 1 1/2 inch, per keg.....	4 25
" " " " 1 1/2 inch, per keg.....	3 75
" " " " 1 1/2 to 1 3/4 inch, per keg.....	3 15
" " " " 2 to 2 1/2 inch, ".....	2 00
" " " " 2 1/2 to 3 inch, ".....	2 75
" " " " 3 inch and larger.....	1 00
Steel nails 10c, per keg extra.....	5 80
Finishing nails, 1 inch, per keg.....	5 10
" " " " 1 1/2 inch, ".....	4 25
" " " " 1 3/4 inch, ".....	4 50
" " " " 2 inch and larger.....	4 10

MONTREAL PRICES.

Lumber, Etc.

Ash, 1 to 2 in., M.....	\$13 00@18 00
Birch, 1 to 4 inch, M.....	15 00 20 00
Basewood.....	50 00 100 00
Walnut, per M.....	22 00 40 00
Cedar, flat.....	90 05 10 10
Cherry, per M.....	60 00 80 00
Elm, Soft, 1st.....	15 00 17 00
Elm, Rock.....	25 00 30 00
Larch, hard, M.....	35 00 40 00
Maple, Soft.....	16 00 18 00
Oak, M.....	40 00 95 00
Pine, select, M.....	35 00 40 00
" " " " 2nd quality, M.....	30 00 25 00
Shipping Culls.....	13 00 15 00
Mill Culls.....	8 00 10 00
Larch, M.....	1 50 2 00
Spruce, 1 to 2 inch, M.....	10 10 12 00
Spruce Culls.....	4 50 6 00
Shingles, 1st quality.....	2 00 3 00
" " " " 2nd.....	1 25 1 50

Cement, etc.

Portland Cement, per barrel.....	\$ 2 50@ 2 87
Koman.....	2 50 2 87
Fire Bricks, per M.....	20 00 27 50

Cut Nails:

Hot-cut Am. or Can. pattern, 3 inch and above.....	2 65 \$2 75
Hot-cut Am. or Can. pattern, 2 1/2 inch and above.....	2 90 3 15
Hot-Cut Am. or Can. pattern, 2 1/2 and 2 inch.....	3 15 3 30
Am. pattern, 1 1/2 and 1 3/4 inch hot-cut.....	2 40 2 55
Can. Pattern, cold-cut, 1 1/2 and 1 3/4 inch.....	3 15 3 25
" " " " 1 1/2 inch.....	3 65 3 85
Finishing Nails, per 100 lb. keg, 1 1/2 to 1 3/4 inch.....	75 cents advance on Hot Cut Nails.
Finishing Nails, per 100 lb. keg, 2 inch and up.....	

Paints, etc.

White Lead, pure, 25 to 100 lb. kegs.....	6 25 6 50
" " No. 1.....	5 25 5 50
" " No. 2.....	4 50 5 00
" " " " dry.....	4 00 4 50
" " " " dry.....	5 25 5 75
Venetian Red, English.....	1 50 1 75
Yellow Ochre, French.....	1 25 1 50
Whiting, London, washed.....	0 50 0 65
" " Paris, ".....	1 15 1 25

Oils:

Linseed, raw.....	0 63 0 65
" " boiled.....	0 68 0 67
Olive, pure.....	1 10 1 15
" " machinery.....	95 1 10
" " extra, qt., per cuse.....	3 00 3 25
" " " " ".....	2 50 2 60
" " " " ".....	2 75 3 10
Spirits turpentine.....	0 68 0 71

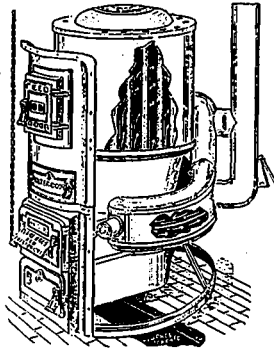
Builders' Hardware.

SPECIALTIES:

Hopkins and Dickinson's **BRONZE HARDWARE.**
 Yale & Towne Mfy. Co.'s **"BOWER-BARFF" GOODS.**
 Chicago Spring Co.'s **DOUBLE ACTION SPRING HINGES.**
 B. G. Tisdale's **IRON STABLE FITTINGS.**

Write for full particulars of above goods.

AIKENHEAD & CROMBIE, TORONTO



Clare Bros. & Co.

PRESTON, ONTARIO,

MANUFACTURERS OF

COAL AND WOOD

HOT AIR FURNACES AND REGISTERS.

10 STYLES. 35 SIZES.

Write for Illustrated and Descriptive Catalogue of the largest variety and best Hot Air Furnaces manufactured in Canada.

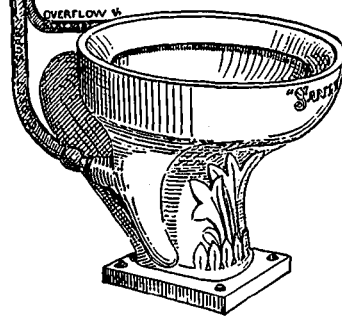
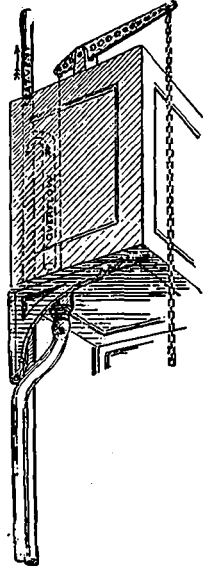
MENTION THIS PAPER.

Sanitas Water Closet

THE SANITAS PATENT WATER CLOSET

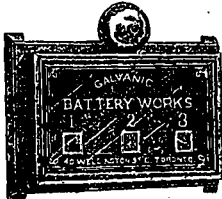
Has the simplicity of the Short Hopper, all the sanitary advantages and conveniences of the best improved modern closets, and others peculiar to itself, in being anti-siphonic, quick-acting, self-sealing, free from spluttering or waste of water, and, when properly set, almost noiseless in operation.

The supply pipe between the cistern and the closet stands permanently full of water, and, discharging below the level of the standing water in the bowl, the action is instantaneous and the noise of flushing is deadened, so that when properly set and with the cover down and toilet-room door closed, no sound can be heard from without. The water is held in the supply pipe by atmospheric pressure, and will instantly restore the trap seal should it at any time be lowered by evaporation or siphonage.



The Sanitas Water Closet.

ANNUNCIATORS HOUSE BELLS ELECTRIC.



40 Wellington St. East, TORONTO.

CHINA

PUSHES

— A —

SPECIALTY

Description and prices on application from the manufacturer.

O. HIGMAN

236 Sparks St.,

OTTAWA, - ONTARIO,

Sole Agent for Canada.

BRANCH OFFICE:

R. D. SAVAGE.

209 St. James St. - MONTREAL.

THE HYNES TERRA COTTA & BRICK CO., LTD.

Esplanade, foot of Jarvis Street, - TORONTO.

TO ARCHITECTS & BUILDERS.

Having removed our entire stock to larger premises, we are now prepared with our increased facilities to furnish all designs entrusted to our care on the shortest possible notice.

DETAILS WORKED OUT AND SUBMITTED FOR APPROVAL.

PLASTER WORK IN GREAT VARIETY.

TELEPHONE 1035.

M. J. HYNES, *Manager and Director.*

FIRE! FIRE! FIRE!

Our Mill was destroyed by fire on the night of Jan. 10, 1890. Reconstruction is now under way, and we expect to fill all orders entrusted to us.

ADAMANT MFG. CO.

100 Esplanade Street East, - - -

TORONTO.

TELEPHONE 2180.



A. B. ORMSBY,

MANUFACTURER OF

126 Queen Street East, TORONTO.

PATENT SKYLIGHTS

GALVANIZED IRON WORK IN ALL ITS BRANCHES.

TELEPHONE 1725.

THE RATHBUN COMPANY

DESERONTO, - ONTARIO.

Manufacturers of

Porous Terra Cotta

FOR FIREPROOFING AND BUILDING PURPOSES,

*Flat and Segment Arches, Iron Girders and Column Protection,
Partitions, Roofing, Furring, &c.*

PERFECT NON-CONDUCTOR OF HEAT, COLD, NOISE.

Used in the following buildings:

St. Lawrence Sugar Refinery, Montreal.
Canadian Pacific Station, " (in part).
Napanee, Tamworth & Quebec Station, Newburgh.
Barrington's Trunk Factory, Montreal.
Hon. G. A. Drummond's Dwelling, Montreal.
Bank of Commerce Building, Toronto.

New Post Office, Napanee.
Royal Insurance Co.'s Building, Montreal.
Imperial Fire Insurance Co.'s Building, Montreal
Canada Life Building, Toronto.
Board of Trade Building, Toronto.

Manufacturers of all sizes and kinds of

LUMBER, LATH, SHINGLES AND TIMBER, DOORS, SASH, BLINDS, STAIRS, COUNTERS,

And all descriptions of Wooden House Building Materials.

THE NAPANEE CEMENT WORKS, (Limited.)

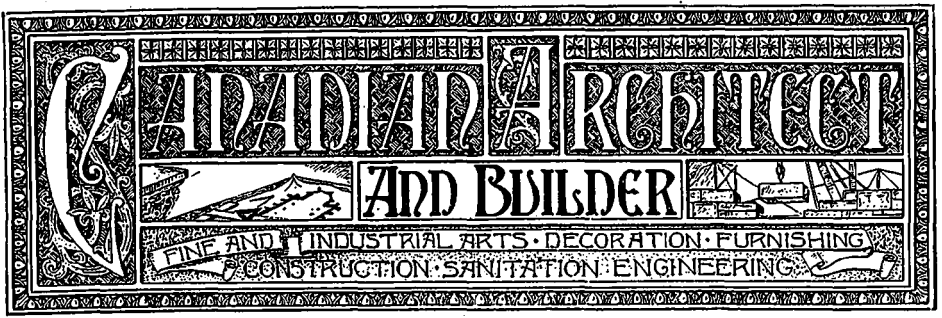
Napanee Mills, - Ontario,

MANUFACTURERS OF

HYDRAULIC CEMENT,

Guaranteed equal to any native Cement.

ROACH LIME, BUILDING STONE, Etc.



VOL. III.—No. I.

TORONTO, CANADA, JANUARY, 1890.

PRICE 20 CENTS
\$2.00 PER YEAR.

—THE—
Canadian Architect and Builder,

A JOURNAL OF MODERN CONSTRUCTIVE METHODS,

PUBLISHED ON THE 15TH OF EACH MONTH IN THE INTEREST OF
ARCHITECTS, CIVIL AND SANITARY ENGINEERS, PLUMBERS,
DECORATORS, BUILDERS, CONTRACTORS, AND MANU-
FACTURERS OF AND DEALERS IN BUILDING
MATERIALS AND APPLIANCES.

C. H. MORTIMER, Publisher,

14 King Street West, - TORONTO, CANADA.

SUBSCRIPTIONS.

The CANADIAN ARCHITECT AND BUILDER will be mailed to any address in Canada or the United States for \$2.00 per year. The price to subscribers in foreign countries, is \$2.50. Subscriptions are payable in advance. The paper will be discontinued at expiration of term paid for, if so stipulated by the subscriber; but where no such understanding exists, it will be continued until instructions to discontinue are received and all arrearages are paid.

In ordering change of address give the old as well as the new address. Failure to receive the paper promptly should be reported to this office.

ADVERTISEMENTS.

Prices for advertising sent promptly on application. Orders for advertising should reach the office of publication not later than the 15th day of the month, and changes of advertisements not later than the 5th day of the month.

EDITORS' ANNOUNCEMENTS.

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

The Ontario Association of Architects has appointed the "Canadian Architect and Builder" its official paper.

VOLUME III.

THE CANADIAN ARCHITECT AND BUILDER enters with the present number upon the third year of its existence. A comparison of this number with the initial issue of two years ago, demonstrates the fact that a considerable measure of progress has been made. The past year was very satisfactory in its results, the number of subscribers having doubled, and the advertising patronage having largely increased, also. There is every reason to hope that the progress which has marked the past, will be maintained throughout the present and future volumes. The publication of a weekly intermediate edition (the CANADIAN CONTRACT RECORD) devoted to the object of supplying contractors and supplymen with advance information regarding contracts open to tender, will be commenced shortly. No effort will be spared to make this intermediate edition of great value to subscribers. We desire to enlist the interest and help of every reader, and especially of every architect, for the attainment of this object. We tender our acknowledgements to all who have assisted us in any way in the past, and trust that their number will be largely augmented in the future. We solicit for the firms who advertise in these pages, the patronage of our readers. So far as we know, they are among the most progressive and reliable men in their respective lines of business. Their advertisements constitute a directory of almost everything required in the erection and equipment of buildings of whatever

character. Nowhere else can the architect and contractor find such a ready reference. We trust that they will make good use of it, and not forget, as too frequently happens, to mention in their correspondence with advertisers, the source of their information.

A PROJECT is on foot in London, England, for the erection of a tower which is to reach, if not to heaven, at least a long distance skywards. The originator of the undertaking is Mr. Edward Watkin, and the proposed site of the structure, the banks of the Thames. A London despatch dated the 2nd inst., says: Two hundred and forty-eight architects and engineers, sixteen of whom are Americans and Canadians and sixteen Frenchmen and Germans, are designing plans for the tower. Many novelties are produced in the designs.

THE City of Montreal has decided to expend large sums of money during the present year on pavements which are intended to be of a permanent character. It is pleasing to notice the determination evinced to have better roadways, yet in our judgment the question of what shall be done with electric wires should first be settled. If they are to go underground, some permanent scheme for their accommodation and proper maintenance should be devised and acted upon at once. If this course be not taken, we shall no doubt find that the costly pavements which it is proposed to put down, will fail to be permanent, but will be destroyed by being constantly torn up to enable repairs to be made to the underground conductors.

WE extend a very hearty welcome to the new edition of our elder cousin, the *American Architect and Building News*, and at the same time we must pay a tribute to the enterprising spirit of its promoters. The "International Edition" aims at the reproduction of a great many valuable drawings and the illustration of buildings ancient and modern, that will prove very servicable to the readers, at an outlay of a very large sum of money, which necessarily makes it a somewhat expensive journal. All professional journals are published for the benefit of the profession they represent. They require the support of that profession, and in order to be a success, must receive it; it is therefore to the interest of every man to do his utmost for the journal devoted to the interests of his business, whether that business is professional, merchantile or mechanical.

IT is so seldom that buildings in Canada are subjected to high wind pressure, that it is to be feared sufficient care is not always taken in their construction to insure safe resistance to such pressure. The unusually heavy winds prevailing during the last few weeks, have caused the partial collapse of several structures in this city. In one instance a brick gable of a new church crashed through the roof of an adjoining dwelling, in another about eighty feet of galvanized iron work stretched across the front of a block of stores with a view to their adornment, fell in a mass to the ground on one of the principal thoroughfares. Fortunately the accident happened early in the

morning when few persons were on the streets. Had it occurred a few hours later, there can be little doubt serious injury, if not loss of life, would have resulted. Considering the large amount of galvanized iron now used on buildings, largely in the way of ornament, the building inspector should see that it is substantially put up, and that pedestrians are in no danger of having it carried down upon them by a sudden gust of wind.

WE have received a letter signed "Draughtsman," complaining that many architects do not pay their assistants promptly. The letter is somewhat lengthy, and we cannot see that its publication would benefit anyone. Draughtsmen are not obliged to give their services to an architect who is not able and willing to pay a fair equivalent for them, and pay promptly.

THE success attending the Ontario Association of Architects has led some Montreal architects to advocate the establishment of a similar organization for the Province of Quebec. The laws relating to architects, builders and proprietors in that province are said not to be satisfactory or specific, while the necessity for the elevation of the profession is generally recognized. There is but one obstacle of any importance which is likely to stand in the way of the successful formation of such an Association as now exists in Ontario. That obstacle is professional jealousy. If our eastern friends can get this out of the way, we doubt very much whether anything else will rise up to hinder the object. The want of fraternity among the architects of the Province of Quebec can hardly be greater than existed in Ontario prior to the birth of the O. A. A. Associations of this kind promote acquaintanceship among members of the profession, and in many cases tend to remove hastily-formed unfavorable impressions of the character of a brother architect. It would give us very great pleasure indeed to see an earnest attempt made for the organization of an Architectural Association for the Province of Quebec.

THE Committee recently sent from Toronto to visit the technical schools of the United States for the purpose of acquiring information which should prove valuable in the establishing of such schools in the City of Toronto, have presented their report. From what they have observed of the methods of conducting such schools in the United States, they are convinced that it would be unwise to vest the management in the Toronto Free Library Board, as has been proposed. The language of the report on this point is as follows: "We think that the Board of Management of these schools should be a distinct and separate body from the Free Library Board, and so constituted as to be a representative board of citizens, who from their education, tastes, or other special qualifications would be more likely to make the enterprise a success." Notwithstanding that fault has been found with the Committee for the above recommendation, we believe it to be a wise one. The Free Library Board has quite enough to occupy its attention in properly discharging the duties for which it was appointed. Technical schools, to be successful, should be directed by persons familiar with, and specially interested in, the branches of special knowledge proposed to be imparted. To place the management in the hands of any other class of men would in all probability result in the adoption of a blundering policy, and the exhausting of the funds provided by the city without anything useful being accomplished.

AS may be seen by our advertising columns, the City of Quebec proposes to build a City Hall, and to that end has asked for competitive designs. The conditions plainly show that a good design is not required for the City Hall of Quebec. If the obtaining of a good design was really the object of the competition, the conditions would be very different. It should not be necessary for us to point out that architects worthy of the name will not send in designs to become the property of any building committee on the payment of a premium, or a paltry \$100.00. It is perfectly true that there are men who call themselves architects who will send in designs, but their designs are

generally such that it would be much less expensive and better policy to have nothing whatever to do with them or their authors. A very objectionable feature of the conditions is that wherein the city reserves the right to withhold from the winner of the competition the superintendence of the work. It would likewise have tended very much to the success of the competition if the selection of the experts to judge the plans had been made, and their names published in the advertisement. Before deciding to engage in a competition involving so much labor and expense, architects would like to be in a position to judge of the capabilities of those who are to sit in judgment on their work. If the city of Quebec desires to enlist the best efforts of the ablest architects in this competition, it will be necessary to amend the conditions.

A CORRESPONDENT, whose letter we published in our November issue, on the subject of "The ability of architects to estimate" made statements which are not warranted by facts, excepting in the proceedings of men not properly qualified to practice as architects. We published the letter, because we do not vouch for the opinions expressed by our correspondents but leave it to our readers to correct misstatements, if they consider it necessary. Every properly qualified architect is thoroughly able to estimate approximately the cost of his design, but it is not every client who is satisfied, and instead, he prefers to try whether he cannot get a price "by tendering," that will include a good deal more work than his architect tells him can be done for the money. Our reason for alluding to this letter is the statement concerning the custom in England, which is misleading. Builders do not there "engage the services of a professional building surveyor to take out quantities," nor does the architect charge builders for copies of the lithographed bill of quantities, to cover the expenses. It remains with the client to agree to the preparation of a bill of quantities, and he pays the cost of the lithographing or printing as well as the architect's or surveyor's fee for its preparation. Quantity surveying has become a separate profession in England within the last few years. But even this arrangement does not better the style of tenders, and reference to the English journals shows how erratic are contractors in the matter of valuing labor and material. The question is not the ability of architects so much as the want of system of pricing among builders. We are always glad to hear our subscribers' views on current topics, even though we may not be able to coincide with them.

BADLY constructed scaffolds continue to be erected, and workmen continue to risk their lives upon them. A scaffold of this character gave way in Toronto a few days ago, while three men were working upon it. Two of them fell a distance of twenty-five feet and received serious, and perhaps fatal injuries. The other grasped a window sill and saved himself. The City Council has appointed a Committee to consider means to prevent the erection of insecure scaffolds. The Committee has held several meetings, and has discussed the matter with representatives of the workmen and the Contractors' Association. The workmen ask for the appointment of an inspector to examine every scaffold erected. The contractors are opposed to this course, but the Committee seems disposed to act upon the suggestion. The number of accidents by falling scaffolds last year, and the serious character of the results, makes it desirable that precautions should be taken to lessen the danger from this cause. We desire to reiterate our opinion, however, that unless the Council are prepared to appoint at least half-a-dozen inspectors, and furnish each with a horse and rig, a system of inspection which will be in anywise efficient cannot be carried out. The remedy for the present state of things is in the hands of the workmen themselves. They should be as competent as any inspector to decide whether or not the scaffolds they are called to work upon have been properly constructed. Let them refuse to work upon insecure scaffolds, and give the contractors to understand that actions for damages will follow every accident caused by scaffolds falling. The appointment of scaffold inspectors should relieve contractors from the responsibility which they are at present under when an accident occurs. The

question presents itself: who will assume this responsibility? Is the city prepared to be responsible for accidents which may occur in connection with scaffolds which shall have passed examination at the hands of the inspector? If so, to avoid the possibility of having to pay heavy damages the city must make the inspection thorough, and to do this will cost a larger amount of money probably than the citizens will consent to pay for the service.

OUR subscribers who may have chanced to see a copy of the *Toronto Mail* of January 1st of this year, were undoubtedly very much astonished at the sixth page, devoted almost entirely to cards of Toronto architects—cards occupying a space of at least twenty lines, with the names of the firms in extravagantly large type. Anything more unprofessional could hardly have been desired, and it was difficult to understand how it was that the names of a majority of the members of the Toronto Architectural Guild thus appeared, when it is well known that this professional body sets its face against advertising, and especially against that form of advertising known as "puffing." We are glad then, to find that neither the Guild nor the *Mail* are entirely responsible for it, that, in fact, it was the result of a misunderstanding between the architects and the newspaper canvassers. They then went round among the architects and endeavored to persuade them to give them their cards for publication, at a cost of \$10, in a "holiday number" of the *Mail*, with a "special circulation." They met with rebuffs from all architects who know the true character of their profession, and seeing that they were likely to lose commissions as far as architects were concerned, they invented a story that they had laid their scheme before the Secretary of the Ontario Association of Architects and "it was with his approval that they ventured again to call." Without going further into the matter, some few men then gave up their cards and signed a form agreeing to pay the fee. In the meantime, the Secretary of the Guild had prepared a paper, signed by many members, in which they agreed that they would pay the fees on condition that nothing more should appear than a simple card, without any "puffing," on the further condition that an article on city architecture written by one of themselves should also be published. The canvassers were made to sign another agreement to the effect that if there was any "puffing," or if an architect's name appeared in connection with any building he had carried out, he (the canvasser) should not collect his fee. It is needless to say how entirely he broke his agreement. There was no "holiday number" with "special circulation"; the article on city buildings was compressed in the smallest type; names of architects appear in connection with their buildings; some of the cards occupy no less than forty line spaces, and are decidedly "puffing," and therefore the canvassers will find difficulty in collecting their fees from the thoroughly disgusted gentlemen who have been so provokingly taken in. When will the proprietors of legitimate business enterprises learn to confine their advertising to legitimate publications and refuse absolutely to have any dealings with "fakers"? Experience proclaims this to be the only wise course to pursue.

OUR ILLUSTRATIONS.

POLICE BUILDINGS, TORONTO—A. R. DENISON, ARCHITECT,
TORONTO.

THE sketch published is the Ossington avenue elevation of a new station about to be erected at the corner of the Avenue and Bloor street. The cost, exclusive of land, will be about \$15,000. The main building will contain large public and small private offices, guard room, accommodation for 40 men, dormitories for waifs and strays, confiscated liquor, &c., gymnasium and sleeping apartments. The ground floor will be finished in stucco, with glazed brick dado, tessellated glass, and hardwood trimmings. The lavatory will be very complete, and finished in slate. The prison, and offices and stable of electric patrol system will be in rear of main building. The prison is connected by covered way, enclosed in wrought iron bars. The cells are to be made entirely of perforated boiler plate, fitted in wrought iron doors, and set upon cement floors, with passage

entirely round same. These buildings are to be heated by indirect steam process. The elevations to be finished in dark clinker brick, grey random rubble, and faced with Portage Entry stone. Roof will be black slate, relieved with terra cotta ridge tiles.

PHOTOGRAPHURE PLATE—INTERIOR OF ST. PAUL'S R. C. CHURCH,
TORONTO—JOS. CONNOLLY, R. C. A., ARCHITECT, TORONTO.

COMPETITIVE DESIGN FOR BATH-ROOM, BY "BIRDS-EYE,"
(E. G. BIRD), TORONTO.

COMPETITIVE DESIGN FOR FRONT PORCH, BY "MI YODEA,"
(ERNEST WILBY), TORONTO.

ARCHITECTURAL DRAUGHTSMEN.

TORONTO, Jan., 1890.

Editor CANADIAN ARCHITECT AND BUILDER.

SIR,—In the November number of the CANADIAN ARCHITECT AND BUILDER, you made some remarks on the lack of good architectural draughtsmen in Canada, and the little interest shown by them in the profession. Now I think the chief cause of this is insufficient remuneration. If the Canadian architects were to pay their assistants at the same rates as those in the States and elsewhere, I think the standard would soon be raised, for this reason: Draughtsmen, if they take any interest in the profession at all, necessarily require more pay than will barely keep them, for not only must they get together the nucleus of an expensive library, but also save sufficient money to enable them to do a little travelling before becoming architects, besides many other things not required by ordinary clerks. To obtain the necessary funds at present, draughtsmen get as many jobs as possible to do out of office hours, and this time, which should be spent in perfecting themselves in the profession, is utilized for money-making. Last year this was why a number of them were unable to attend the meetings of the Draughtsmen's Association. No doubt this caused its failure as much as anything, and three years ago when the Association was first organized, a large number of those applied to attend the first meeting were doubtful as to whether they would have time to go in for it on this account. Probably the architects will take this little matter into consideration whilst the professional improvement spirit is with them.

Yours truly,

DRAUGHTSMAN.

OPINIONS WANTED.

WINNIPEG, MAN., Dec. 23rd, 1889.

Editor CANADIAN ARCHITECT AND BUILDER.

SIR,—I shall be glad if you will give your views in the next issue of your valuable paper as to the better construction for a fire-proof vault—two 8 inch walls with 2 inch air space between, or 12 inch wall outside and 2 inch air space with 4 inch wall inside, bonded say every 5 feet super. to outside wall.

Yours faithfully,

ARTHUR T. TIMEWELL.

[We should be inclined to favor an 8-inch wall, but would like to hear the opinions of some of our readers on the subject.—ED. C. A. & B.]

PERSONALS.

It is reported that a Mr. Lloyd, architect, of Detroit, Mich., will remove to London, Ont., and assume the business of the late Geo. F. Durand.

Mr. M. J. Hynes, Managing Director of the Hynes Terra Cotta and Brick Co., Toronto, was waited on by his staff of employees on Christmas Eve, and presented with a gold-headed cane, as a mark of their appreciation. Mr. Hynes cordially reciprocated the kindly sentiments expressed towards him.

One of the most prominent men in the ranks of Canadian Civil Engineers has passed away in the person of Mr. Samuel Keefer, who died at his home in Brockville on the 7th inst. He has been identified with the construction of many of the leading public works of the country. One of the triumphs of his skill was the construction of the Suspension bridge at Niagara Falls in 1869. He was also architect for the old suspension bridge at the Chaudiere, and was connected with the Grand Trunk railway from 1851 to 1854. During his lifetime he filled many very responsible Government positions, among them Government inspector of railways and deputy commissioner of public works. In this latter capacity, during the absence of the chief commissioner, he was charged with the selection of plans for the Parliament buildings at Ottawa, and his report was adopted.

DEATH OF MR. GEO. F. DURAND.

It is a very painful duty which we are called upon to perform in recording the death of the respected Vice-President of the Ontario Association of Architects, Mr. Geo. F. Durand, of London. Mr. Durand had been for a year or more in declining health, induced it is believed by overwork. A vacation which he took last summer made a temporary improvement in his condition, but the strain involved by his large practice speedily destroyed the benefit received. His deep interest in the Ontario Association of Architects led him to attend the recent Convention in Toronto, and render material assistance towards the promotion of the objects which were there considered. His friends were deeply pained on that occasion to observe the ravages which disease had made on a constitution naturally strong, and the indications pointing to the early close of a talented and useful life. Yet, as they bade him good-bye at the close of the Convention, it was not in the expectation that they were wishing him a last farewell. Such, however, it proved to be. In his death, the architectural profession in Canada has lost one of its ablest members, and the Ontario Association of Architects one of its most valuable promoters.

Through the courtesy of Mr. Thos. Tracey, City Engineer of London, and formerly Mr. Durand's partner, we are able to present our readers with a portrait of the deceased, and a few facts concerning his professional career:

He was born at London, Ont., in the year 1850, and first studied his profession in the office of Mr. William Robinson, former City Engineer of London. When a promising young man he went to Albany, N. Y., where he was employed for a number of years as chief assistant under Mr. Thomas Fuller on the famous new capital, and where he married Miss Parker, the daughter of a prominent builder. When Mr. Fuller, who is now Chief Architect of the Department of Public Works, Ottawa, severed his connection with the Albany work, Mr. Durand also left, and after a year's engagement in Maine, returned to London, where he went into partnership in 1878 with Mr. Thos. Tracey, under the name of Tracey & Durand. This firm was quite successful and dissolved in 1882, when Mr. Tracey was appointed to his present position of City Engineer, and Mr. Durand carried on business for himself, continuing with uninterrupted success until the time of his last illness. Among the important buildings in the city which are monuments of his artistic skill might be mentioned the Masonic Temple, the addition to the Custom House, London Club House, Main Exhibition Building (Queen's Park), Canadian Savings and Loan Company Building, R. C. Separate School, the Infantry Barracks (under the Department of Public Works), the new Colborne Street Church, Simcoe Street School, exterior Talbot Street Baptist Church, etc. Many of the large buildings, churches, etc., throughout Western Ontario were designed by him. In the recent competition for the new Toronto Court House, Mr. Durand's plans received second mention, thus receiving first cash prize. An evidence of the esteem in which he was held is found in the fact of his being employed by the Ontario Legislature to erect the new Upper Canada College, and his superintending the construction of the Goderich and Strathroy post-offices under the Dominion Government.

Mr. Durand was a member of St. Andrew's Church, and a prominent Freemason. His wife and four children deplore his loss.

The funeral obsequies were attended by a very large number of persons, including Mr. Fuller, Chief Architect Public Works, Ottawa. The O. A. A., through their Secretary, Mr. S. H.

Townsend, telegraphed the following: "The Directors of the Ontario Association of Architects have learned with deep regret of the death of their confere, Mr. Geo. F. Durand, and beg to extend their heart-felt sympathy to the members of his bereaved family in their great affliction."

"CANADIAN ARCHITECT AND BUILDER" SERIES OF PRIZE COMPETITIONS.

REPORT ON COMPETITIVE DRAWINGS FOR A BATH ROOM.

The best drawing is that of "Novus Homo," and the fitting of his bath room is unexceptionable, except in the matter of cost. Marble and tiles are hardly possible in a house of moderate cost, and are certainly not likely to be associated with such contracted space as "Novus Homo" has given. He would have done better to throw the water closet into the bathroom, instead of giving it a separate room. By this means the bathroom would have been made of a more comfortable size, and so far from being out of place in a bath room, the water closet is more convenient there, besides being more private.

"Dado" has a good arrangement, with some defects. The recessed bureau, with a fixed mirror over, and windows above

the mirror, would be a great addition to a bathroom, but we hope the drawers under the bureau are only intended for spare towels and other general bathroom supplies, and not to help forward the slovenly use of the bathroom as a common dressing room, which one often sees. A short bath is a great discomfort and unworthy of a place in a good bathroom, besides being a fallacy, if intended, as "Dado" proposes, to save hot water, for it takes as much water to cover comfortably a body crouching in a short bath as it does to cover one lying flat. The principal defects of "Dado's" plan is a point upon which he prides himself in his notes—that the pipes of the bathroom and the tank are to be got at from the cupboard of the adjoining bedroom. The tank would be much better exposed in the bathroom and to be got at there, and a bedroom is the last place in which to expose any pipes connected with the sewer. The bathroom and all its connections should be as much isolated from the rest of the house as possible.

The seat in "Bird's Eye's" plan is rather an impertinence. The space would have been better utilized by the closet or to contain the basin. The common character of the details and inferior draughtsmanship militate against the merits of the plan. In other respects, the arrangement is good, and the author may claim the first place in the competition.

W. A. LANGTON.

R. J. EDWARDS.

JOHN GENNIELL.

The names of the competitors to whom the Committee have awarded first and second positions in the above competition are: "Birds-eye," (Mr. E. G. Bird), 18 Toronto St., Toronto. "Dado," (A. E. Wells), 43 Yorkville Ave., Toronto.

REPORT ON COMPETITION FOR AN OUTSIDE PORCH.

"Mi Yodeca" is the most original and in other respects the best design, while the drawing really outclasses the other competitors. Good taste and quaintness are characteristic of its get up, and one of the best points is the snug way in which it fits the house.

For a conventional swell porch, "Utilissimus" will do, as it is well designed in the conventional swell way, but the drawing is poor indeed. For the benefit of the author we might suggest, that in future he omit all unnecessary elaboration in the matter



THE LATE GEO. F. DURAND.

of carving and decorative printing, until he has so far improved his draughtsmanship that he will not do injustice to his ideas, which in this design are good enough in their way. It is doubtful if this drawing will reproduce well.

"Rex," who has a good proportion and plan, we would place third. The drawing is fair, but the printing is bad.

"Recherche" has done anything but employ research, having put a large size builder's porch of the commonest type of turning and bracketing on a small size house. The printing here too is very poor, while the drawing is only passable.

"Gambetta" has a verandah that is not absolute nonsense, but his porch with the seats carefully projecting into the sun and rain, is laborious wrong-doing.

"New Year" has about the same kind of a design—carpenter-like details in quantity sufficient to spoil any good design, which this one is not.

Your obedient servants,

W. A. LANGTON.

R. J. EDWARDS.

JOHN GEMMELL.

The names of the successful competitors in the above competition are in their order of merit, as follows:

"Mi Yodca," (Ernest Wilby,) 106 Yorkville Ave., Toronto.

"Utilissimus," (Robt. J. McCallum,) 213 McCaul St., Toronto.

NOTE.

Several essays have been received in competition for the CANADIAN ARCHITECT AND BUILDER'S prize for the best essay on "Plumbing." Considerable time is required for the proper consideration of the merits of the work of each competitor, and the judges were unable to announce their decision in time for publication in this number. The result will appear in our issue for February.

SUN LIFE ASSURANCE CO. BUILDING COMPETITION—EXPERTS' REPORT.

TORONTO, Nov. 30th, 1889.

R. MACAULEY, ESQ.,

Managing Director Sun Life Assurance Co., Montreal.

DEAR SIR,—On the 23rd inst. we received from you the fifteen sets of designs sent in competition for the proposed new offices for your Company, and in accordance with your request we have made a careful examination of each design separately. Out of these fifteen designs we have selected four, which in our opinion, for various reasons, have more points in their favour than the others. These four, we think, are entitled to the prizes offered, and in the following order:

1st. "WELL CONSIDERED," (Mr. Robt. Findlay, of Montreal).

2nd. "CROSS IN CIRCLE," (Mr. W. T. Thomas, of Montreal).

3rd. "TUUM EST," (Mr. McLea Walbank, of Montreal).

4th. "SOL," (in black ink) (Messrs. James & James, of Toronto).

The design we place first has a very good plan for the ground floor, but we think that this floor would be better to remain clear of all partitions, and as one large room, so that it could be divided by tenants to suit their own purposes. The first floor plan, containing the General Offices, Manager, Actuary and Secretary's room, is, we consider, laid out with great care and knowledge of the requirements. The partitions dividing the office could perhaps be omitted altogether and wood screens, glazed in the upper panels, substituted where necessary. The author has carefully followed the "Instructions," and placed the Board Room on the first floor, but this space might with advantage be given into the General Office, and the Board Room placed on the floor above. The second floor plan is divided into rooms for agents and other officers of the Company. A small portion not required for such purposes is arranged for renting. This space we think might be better used by here placing the Board Room, and the Company would then have spacious offices occupying the whole of the first and second floors. The other floors are divided into offices of a convenient size for renting purposes. The author has selected a type of Renaissance architecture for his elevations. The selection is good, for, owing to the narrowness of the principal frontage, a bold or heavy style would not be so suitable; the design is well considered, and has a rich and handsome aspect.

"Cross in Circle."—This design shows an arrangement of the first and second floors which requires little improvement. A good feature is the well-hole between these floors. By this the two floors are united, and to the public the size of the Company's premises is better understood. Another good point is the waiting room between the Manager's Room and the Public Hall. The exterior design is not as good as many of the others submitted.

"Tuum Est."—The plans in this design have been very well considered, and have many features in common with the designs placed first and second. The Board Room is placed on the second floor and occupies a position suitable to a room of its importance. The exterior aspect of the design is very imposing, although the three tiers of arches on the ground, first and second floors, is somewhat monotonous.

The design bearing the motto "Sol," in black, is not so well planned as those already described. The entrance hall to the Company's offices is very faulty, and the stair badly arranged. Too much space is given to the public on the first flat, thus reducing the general office more than is necessary. The Clerks' Lunch Room is on the second floor, with window to Notre Dame Street. This is too valuable a space for such a purpose. The exterior is very skillfully designed, and may be considered one of the best designs submitted.

The other eleven designs we will briefly allude to without regard to order:

"Star in Circle" has a very handsome exterior. It is simple, but for architectural design it is not surpassed by any. The entrance hall to the upper flats is well arranged, but otherwise the plans are rather inferior.

"Beata" has sent in a very pleasing and well-proportioned elevation. The first floor plan is not good, because it is necessary for the Actuary and the Secretary to pass through the Manager's Room or across the stair landing before they can reach the General Office; also too much space is wasted in the General Office.

"Aurora" (red) has a good elevation, but very weak plans.

"Rex."—The arrangement of the second floor is decidedly bad, and valuable space thrown away unnecessarily.

"Aurora" (black).—The principal officers' rooms front on a back street, while the clerks have the advantage of Notre Dame Street corner.

"Sunflower."—Elevations too much broken up and overdone with pilasters, cornices, etc. The first floor plan shows the General Office much too small, also situated fronting Notre Dame St.

"Spot in Circles."—Elevations show much originality and architectural ability. Valuable space of the outside has been given to the staircase, thus detaching the officers' rooms from the General Office, and placing the Medical Examiner's room in the darkest part of the building.

"Sol" (red).—The entrance, vestibule and staircase condemn this plan at once, the elevator having no way of getting to it, excepting over the ends of the bottom steps of the stair. Also the columns may be necessary for the construction, but the arrangement would be decidedly inconvenient.

"Facet et Spera" has the same faults of plan as "Beata," the General Office being too small to be of any use.

"Lang Syne."—Plans of the various floors better than some of the others, but the elevations too severe, and more suitable for a warehouse.

"Techné."—The Lavatory occupies the corner window on the second floor. The General Office has the whole of Notre Dame Street corner, the Manager and other officers being separated and put to the rear. The elevations have originality.

(Signed), KNOX, ELLIOTT & JARVIS.

Mr. Edward Playter, M.O., in an address before the Ottawa Society recently, remarked that the plan of warming now so generally adopted, with a series of hot water or steam pipes in the room, without any special means for changing the air, is to be very greatly deprecated. There should be legislation prohibiting such method of warming, unless special provision for ventilation, aside from ordinary window ventilation, were provided, and in such a way that the use of it could not be avoided. Most people do not understand the necessity for free ventilation, and education in this, as in other matters, is one great want of the day.

TORONTO ARCHITECTURAL SKETCH CLUB.

IN the Canadian Institute, that home of Science and Art, the birthplace of so much educational and literary zeal, was organized on the 20th December, 1889, the Toronto Architectural Sketch Club.

To those to whose efforts its formation is due, and to all interested members of the profession, the present prospect of the Club's permanent success must be most gratifying. In an unusually short space of time, it has got into full running order, the membership list has been rapidly increased, the most widespread interest created, and the most kindly greetings and offers of co-operation received from sister art societies. Besides all this, the Club has been most fortunate in obtaining a club room both comfortable and convenient, in the new building, corner Queen and Victoria streets.

In response to the intimation in the last number of the CANADIAN ARCHITECT AND BUILDER and to the circulars which had been sent out, a thoroughly representative gathering of architects, artists, draughtsmen and others, was present at the organization meeting. Mr. R. J. Hovenden, on request, took the chair, and the business of the evening was commenced by the committee on organization making their report. The meeting then resolved itself into the Club, and interesting addresses were made by Mr. Jones and Mr. Blatchly of the Art Students' League, Mr. Forster of the Ontario Society of Artists, and Mr. Curry of the Architectural Guild, in which they presented the good will of their different organizations to the new Club, and gave it many words of encouragement.

Mr. Jones, on behalf of the League, very kindly placed one of the rooms of that organization at the disposal of the Club, until such time as arrangements for winter quarters could be completed. This offer was gratefully accepted, and a hearty vote of thanks was tendered to the League for its kindness. (As the club has now secured a room of its own, it will no longer be necessary to avail themselves of this kind offer).

The constitution and by-laws, as drafted by the committee, were then considered, and with some minor changes adopted.

The regular nights for meetings it was decided would be on the second and fourth Tuesdays of each month, and it was arranged that one should be for some technical lectures or debate, while the other should be devoted principally to the discussion of the monthly sketch competition. These competitions, of course, will be the most important feature of the Club's work, and as planned, will be most attractive forms of study for the members. The idea suggested is, that the conditions of all the competitions may be as liberal as possible, so that members may respond as time and fancy permits.

The election of officers then took place, and the result of the ballot was as follows:—President, Mr. Charles Lennox; Secretary, Mr. A. H. Gregg; Treasurer, Mr. Ernest Wilby; Directors, Mr. Chas. J. Gibson; Mr. Robt. Dawson; these five form an Executive Committee for the transaction of the business of the Club.

The first meeting for "work" was held at the rooms of the Art League on January 4th. A very interesting paper on "Architectural Design" was read by Mr. C. J. Gibson, and elicited some lively discussion. After this, the members employed themselves in sketching from life.

One of the most pleasing features of the organization is the general enthusiasm of the members. Evidently the Club is the outcome of long cherished hopes, and it certainly meets a long-felt want. In the club room, the members will always have the advantage not only of social intercourse, but also of mutual professional aid.

An interesting and instructive programme for the winter will be provided, a number of papers already being promised by well-known architects.

With the extensive use of tin roofing plates came the practice of some importers of offering cheap and nasty plates, thinly coated and full of concealed defects. Merchant & Co., of Phila. Delin., instituted the practice of guaranteeing every box of plates, then stamping the brand and thickness on every sheet, and excluding wasters or defective sheets, and lastly by branding the net weight of the 112 sheets on each box, to satisfy the customer that he obtained full weight and just what he paid for.

"ABILITY OF ARCHITECTS TO ESTIMATE."

WINNIPEG, MAN., Dec. 6th, 1889.

Editor CANADIAN ARCHITECT AND BUILDER.

SIR,—It is so gratifying to find endeavours are being made through the medium of your valuable paper to educate the general public to properly appreciate our profession, that I venture to add my modest endorsement to the able letter by "T Square," on the question of the ability of architects to estimate, and the system of providing contractors with bills of quantities. The *modus operandi* is, that after plans and specifications are prepared, they are handed to a Quantity Surveyor, who measures the amount of labour and material, and classifies under each trade, thereby compiling a complete bill of all the labour and material in the building, and the requisite number of copies are lithographed. One of the items of the aforesaid bill is, "allow for quantities," so that every one tendering includes it in his estimate, and only the successful one has to pay.

Unless the system is properly carried out and understood, proprietors instructing architects are inclined to think that, not only are they bound by the quantities, and should there be any mistake made they have to pay for anything not in the bill, but that the cost of preparing the quantities, and which is added to each tender, increases the cost of the building without any consideration to them. Now, while it is quite true the proprietors are bound by the quantities, the rule cuts both ways, the duty of the surveyor being that upon the completion of the work, he should measure the actual building and adjust the account, adding to, or reducing from, as the case may be, the cost of additions or deductions being calculated upon the same rates as the priced bill upon which the tender is made, and which should be in every case deposited with the architect. I have found in practice that unless alterations in the plans are made, deductions more often occur than additions, and should the contrary be the case, the surveyor sees that only work actually done is paid for, which no honest man would object to. Therefore the proprietor, as much as architect or contractor, is benefited by the valuable services of the quantity surveyor, and should be paid by him.

Although many architects make a practice of taking out quantities for their own protection and guidance in issuing progressive certificates, yet, by doing so, they are performing another professional man's work without being paid for it. A quantity surveyor in England is a distinct profession, and when he and his services are recognized here, we may look for closer tendering, and a more healthy state for both the profession and contractors.

I will close this, I fear, already tedious letter, by calling your attention to the existing law in Manitoba, and for what I know in other parts of Canada, which thoroughly ignores architects. Therefore steps should be taken to place us on a par with other professions. I allude to the statute setting out the fees to be paid to professional witnesses, which will be found to mention doctors, lawyers, engineers and land surveyors only.

Yours faithfully,

ARTHUR T. TIMEWELL.

"CANADIAN ARCHITECT AND BUILDER" SERIES OF PRIZE COMPETITIONS.

THE following is a list of competitions in Architectural subjects which we have decided to hold during the winter.

1st.—Plans of a serving pantry, 100 square feet in size, showing cupboards, shelving, etc., with details of same. Plans to be sent in on or before 1st February next. First prize, \$5; second, one year's subscription to CANADIAN ARCHITECT AND BUILDER.

2nd.—Designs with details for front and vestibule doors, with plan of vestibule. Designs to be sent in on or before 1st Feb., 1890. First prize, \$5; second, one year's subscription C. A. & B.

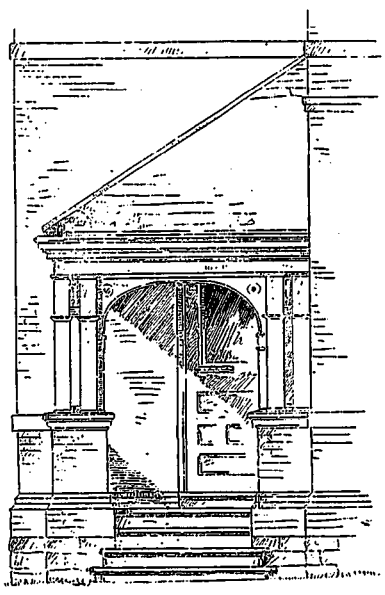
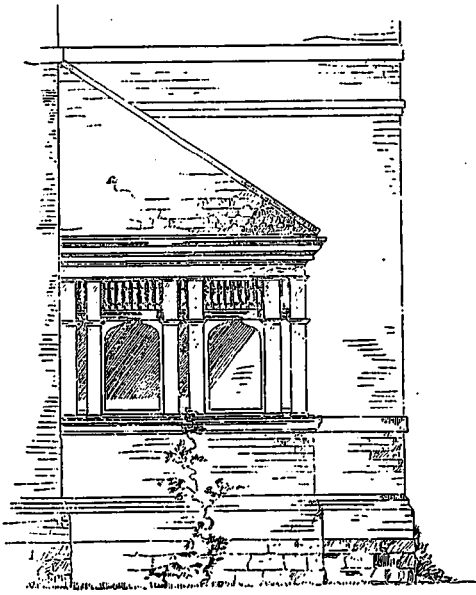
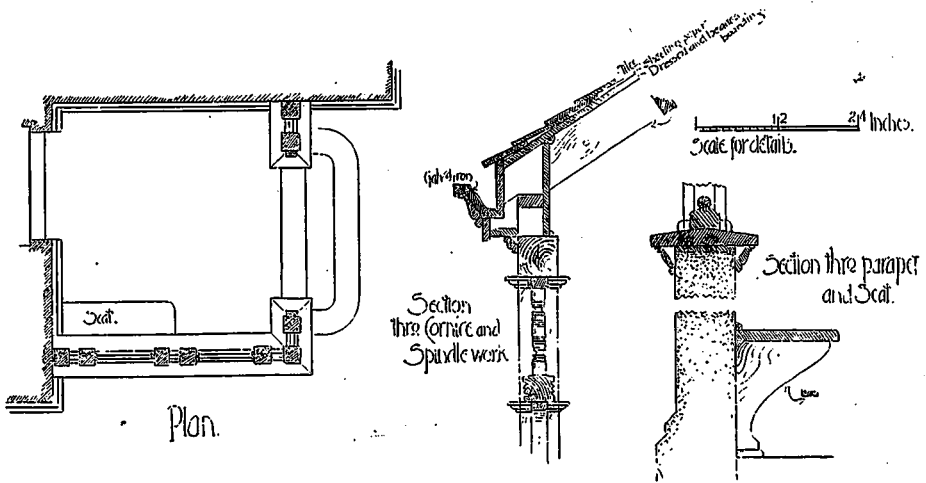
3rd.—Details of the interior of a small house to include those for staircase, doors, architrave, base and windows. Designs to be sent in on or before 1st March, 1890. First prize, \$10; second, one year's subscription to C. A. & B.

4th.—Design with details for four mantels, two of wood, one of brick and one of stone. Designs to be sent in on or before 1st April, 1890. First prize, \$5; second, one year's subscription C. A. & B.

5th.—Three designs with details, for front fence. Designs to be sent in

Canadian Architect and Builder Competition

For an outside Porch submitted by "Mi Yodea"

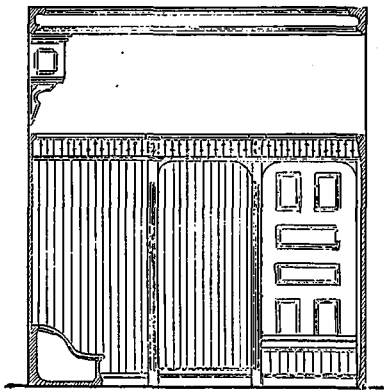


Side Elevation
 scale for plan and Elevations

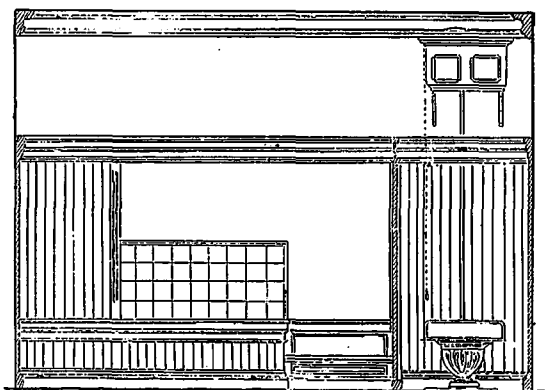
End Elevation.

1 2 3 4 5 6 7 8 9 10 Feet.

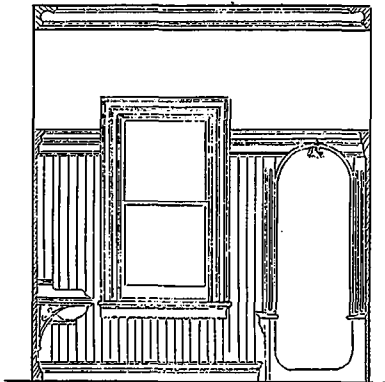
COMPETITIVE DESIGN FOR FRONT PORCH.
 BY "MI YODEA" (ERNEST WILBY), TORONTO.



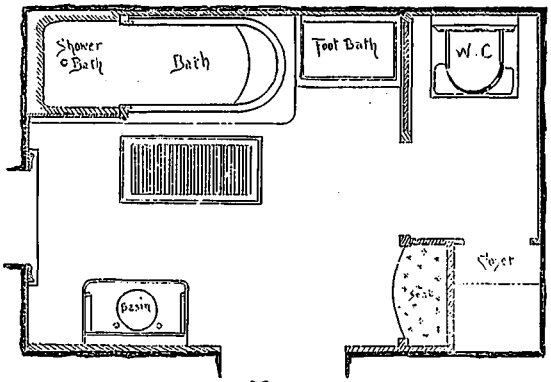
Cross Section



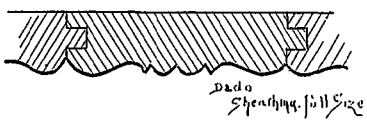
Longitudinal Section



Cross Section



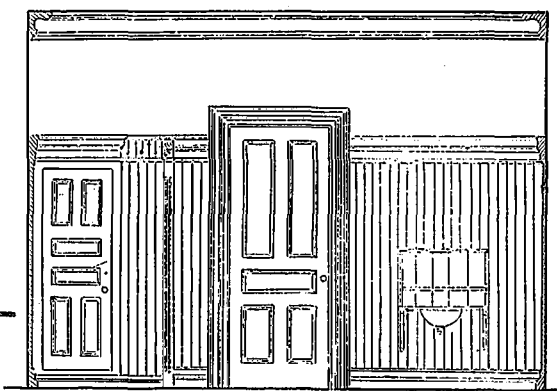
Plan



Dado
Shelving, full size

"Birds-eye" View
of
Bath Room

Scale:- $\frac{1}{2}$ to the Foot



Longitudinal Section

on or before 1st May, 1890. First prize, \$5; second, one year's subscription C. A. & B.

6th.—Essay on Heating and Ventilation. Essays to be sent in on or before 1st May, 1890. First prize \$10; second, one year's subscription to C. A. & B.

The Architectural Guild of Toronto have very kindly appointed a committee from their number to judge the above competitions. We shall publish each report as sent to us by the committee. Draughtsmanship, neatness and clearness of arrangement of drawings will be taken into consideration in awarding positions.

Drawings must be made on sheets of heavy white paper or bristol board, 14 x 20 inches in size, and must be drawn to allow of their being reduced to one-half the above size. Drawings must be made in firm, strong lines, with pen and black ink. No color or brush work will be allowed.

Each drawing must be marked with the *nom de plume* of its author, and the author's name, *nom de plume* and full address, enclosed in sealed envelope, must accompany each drawing sent in.

We reserve the right to publish any design sent in.

Drawings will be returned to their authors within a reasonable time after the committee has given its decision.

ARCHITECTURAL COMPETITIONS.

THE Architectural Guild, of Toronto, offer the following prizes in competition:

1st.—A prize of \$10 for the best essay on the History of Architecture. The essay is not to contain more than 600 words. Marks will be awarded in proportion of 75% to the subject matter, and 25% to the style of composition. The essay to be sent in not later than April 15th.

2nd.—A prize of \$10 for the best design for a country church (suitable for the Episcopal form of worship) to seat 150 persons. The design to be in the late decorated period of architecture. Plans, elevations and sections are to be drawn to a scale of eight feet to an inch. Detail drawings, half inch scale, with full-sized sections of principal mouldings, &c.

Values will be given for correctness of interpretation of the decorated period; for the careful and accurate preparation of the drawings; arrangement of the drawings on the sheets, and for draughtsmanship.

Designs to be sent in on or before March 15th.

Drawings must be made on sheets of heavy white paper or bristol board, 14 x 20" in size, and must be drawn to allow of their being reduced to one-half of the above size.

Drawings must be made in firm, strong lines, with pen and black ink. No color or brush work will be allowed.

Each drawing must be marked with the *nom de plume* of its author, and the author's *nom de plume* name and full address, enclosed in sealed envelope, must accompany each drawing sent in.

The above competitions are limited to students of not more than four years' standing, who are in the offices of architects who are members of the Ontario Association of Architects, and each competitor must send in a certificate to that effect from the architect in whose office he may be employed.

OFFICE MANAGEMENT AND ROUTINE.*

THE subject chosen for this paper is a remarkably comprehensive one— one of which it is difficult to define the exact limits and difficult to treat generally, for under this head must necessarily be included, not merely all that concerns the interior economy of an architect's office, but a good deal of outside work in connection with it.

As no two men are alike in business capacity, so no two offices are conducted similarly, and one man's practice differs from another's, as much as the style of their various works.

Every man has his own idea of "running" his office, but it does not always follow that his means will allow him to carry out his ideas, and generally it happens that other calls prevent his spending as much money on his office as he would like.

We are not sure that this country any architect's office to which the term "luxurious" could be applied. I have seen a great many which answer to the description "penurious." Now, as a matter of fact, the one extreme is as bad, as unprofessional as the other. A certain amount of "style" is as necessary as "luxury" is unnecessary. By the word "style" I do not mean so much the actual outlay on fittings and so forth, as good arrangement, general neatness and perfect order. Simplicity is an advantage; it is business-like. Plenty of room is essential and greatly facilitates business. There is nothing so hindering as interruption. Want of sufficient space usually entails a great deal of it. If you are cramped you cannot have all your drawings satisfactorily arranged before you; you have to turn over street after street to get at the one you want to work on, and if when moving about your office, your clerks have to make way for you to pass,—or the risk of being their elbows joggled, considerable inconvenience is felt. Then again, you do not wish to have your clients, clerks and contractors mixed up together in a bunch, and you are much hampered if you yourself have to be mixed up too. And yet this is not uncommon. In cities where rents are high, spacious offices are difficult to obtain within one's means, though in country places and small towns, you are usually not hampered by this consideration.

We have to remember one thing, that the more business-like an office is, the more work will come to it, for it is certain that if the office is conducted in a business-like manner, the architect who owns it will be a good business man, and it is marvellous how much more work a business man can get through in a day than a man without method, unbusinesslike. Order, it is

said "is Heaven's first law;" it is equally the first law of successful business.—a place for everything and everything in its place.

I have seen some offices in London, the great metropolis of the world, occupying the greater part of a house and fitted up in such luxury that one wonders on entering, where the work is done. To take one office in particular, you ring at the front door bell of a house that to all appearances is a private residence, except for a small brass door plate which indicates it as an office. A page in livery opens the door, and you enter a spacious hall, furnished with Turkey rugs on a polished floor. By the dim light admitted through a stained glass window you see quaint old oak cabinets, and settees black with age, brass lampstands, oil paintings on the walls, and rich portieres, all helping to confirm the idea in your mind that you have a very comfortable to the wrong door after all. You ask the principal, and you are shown into a side room, furnished with equal luxury, a little more light perhaps owing to the windows being of clear glass, and this shines upon a treasure of an office desk, with easy chair to match, a small collection of books on architecture in a bookshelf with glass doors all richly bound, but you see no T square or drawing board. The door opens, and in comes the principal, clad in a velvet jacket and with a scarf and never a sign of head or hand on his thumb. You tell your business and he touches an electric button; the page appears and is sent to the drawing office to get the drawings you want to see; so you transact your business and depart, ushered to the door by the tightly buttoned boy. And yet from this office have proceeded some of the most charming and delightful, picturesque and altogether lovely country residences, so that seldom the face of modern England. An atmosphere of luxury, but an atmosphere of art and of inspirations indeed. But requiring to be seen and experienced to be fully understood.

Naturally one thinks how incongruous such surroundings would be in one's own case. One would not care to have polished floors and Eastern rugs tramped over by the heavy, muddy boots of our contractors and workmen just off a building, and yet that both builders and often workmen should be able to come in freely, even with the objectionable newer casings, is indeed a puzzle. But the contractor, who is the man who is alluded to in London, the work of the office is nearly all carried out in the country, and then the London contractor is a big man in his way, wears his black coat and top hat, and never dreams of wearing muddy boots.

We have to be eminently more practical, and the worst part of such an office as I have described would probably be sufficient for us. Plain fittings, high stools, uncarpeted floors, drawing presses all plainly labelled, and writing desks, and a few chairs, but the arrangement of the office is something you won't see, and that is the bestly spiltton, for the disgusting habit which makes such an unsightly thing necessary is not a common practice there.

Office management and routine touches one of the three component parts of an architect's nature more than the other two. As an artist, an architect requires good light, and as a constructor, engineer or builder (whatever you like to call him) he requires the help of the hand. The latter arrangements, but the "business man," the office and its arrangements, mainly belong. As a man of business, an architect must have his office apart from his house, and must not be interfered with in his work by domestic calls. I have seen an architect's office, composed of the two best rooms of a small house, in an English county town, where they made working drawings to the specs of the infants, and wrote their specifications to the thrumming of five finger exercises, and where inspirations for design, where wafted on air redolent with the odour of cabbage water and boiling beef. This, indeed, must be a relic of the Pectinifian age, but it is an actual fact, not borrowed from fiction. Such was the office of a man, an architect, who, having won a competition, had orders to carry out his design for a cemetery chapel at the cost of £3,500 sterling. When the works were completed, the contractor sent the Cemetery Board for another £3,500 sterling for extras (which doubtless the amount of the contract). The architect, however, removed from that part of the country shortly afterwards. You will find an account of the proceedings outlined in the *London Building News* about the year 1880 or 1881, but as I was a witness, I can vouch for the tale.

After all, everything depends upon the means the architect can command, but certain things are essential. His office must be separate from his house, he must have sufficient room for it, as he is a business man, he must see to the necessity of having the greatest number of desks. That architect who has access to the drawing boards, to let the clerks overhear all the clients have to say, and to let travellers and agents interrupt you, or break in upon an interview with your clients. Sometimes it is an advantage to have an interruption when you are conversing with a client, but it can generally be obtained at the moment without having permanent arrangements made for the purpose. And especially is this so when your client is a woman, but I once had a client in petticoats whom nothing would interrupt, and I could not charge her more than five per cent. Except where such clients are concerned, there should be a time for everything—a certain time allotted every day to the supervision of your buildings in course of erection; a certain time for the visits of agents, and a certain time for your correspondence.

As a rule, the first thing in the morning is the best time for inspection, before you get into the office. Your correspondence is best left to the afternoon, after the last post, when you will have had time to digest your letters, and when you can answer them all together. And as for receiving agents, the best time is your lunch hour, when probably you will be out, or else you can see them sandwich in hand, for they will come, but very few are of any service to you. Everything that interrupts your regular work should be arranged for and have its special time.

A constant cause for prolonged interruption is a request for a certificate by a contractor. Accounts take a long time to go into, and in justice to yourself and your client you are bound to give them careful and serious attention. But sometimes a builder requests a certificate at a moment's notice, to help to pay his wages, or, as the common excuse is, "to meet a note." We are to a certain limited extent, the trustees of our clients in this matter, and our irregularity in the issuing of certificates is not fair upon him. We may be willing to oblige the contractor, but it is by no means the best course to have settled time for issuing certificates, and not to depart from it. It is as well to have a notice to this effect pinned up where contractors can easily see it, and add to it, that no certificate will be granted until sufficient time has been allowed for you to go into statements. Then when accounts are large or numerous you can set apart a special day for the purpose.

A certificate, as has been decided by the United States Courts, is not in any way equal to a draft or a cheque which must be met upon presentation, and a contractor cannot demand payment upon the strength of it. The architect merely certifies that the contractor is entitled to receive a certain sum, for work done, and the certificate becomes evidence in favor of the contractor as against the proprietor, in case he disputes it. But the proprietor, except according to the terms of the contract, is not bound to pay it upon presentation.

Issuing a certificate out of the regular course of events may put your

*Paper read by R. W. Gambier Housefield before the first annual Convention of the Ontario Association of Architects.

cient to considerable inconvenience, or at any rate in an uncomfortable position, he may not be prepared to meet the sudden demand, and it may be unpleasant for him to be obliged to refuse payment for a few days.

In order to leave a contractor if really in a temporary difficulty, it is possible to issue a certificate and to require that the contractor should either pay or payment until such and such a date." The contractor would then use it to show a pressing creditor that this money is coming to him, but all these ways are best avoided if possible. Once break through a rule and you create a precedent, and if you do it for one, it is hard to refuse it for another. But I must here add a few words on the responsibilities of architects in issuing certificates, which is a point, we shall, I hope, discuss presently. I would by particular stress upon the fact as the understood even by contractors, that the certificate is not equal to a draft. The law recently has been so strictly enforced, to the harm of individual architects, in various countries, that it behoves us, if we would save our skins from its clutches, to word our certificates in a manner that will relieve us of serious responsibility in regard to work carried out under our orders, but which we have been unable to supervise. Our clients must learn that if they will not pay for proper supervision, they cannot expect the architect to hold himself by his certificate responsible for improper construction.

An important matter and one that requires careful regulation, is the ordering of extras and the payment for them. Some detail requires attention that will incur extra expense, or some matter not previously thought about, will turn up requiring an additional outlay on the part of the proprietor. Now for everything of this kind, however simple, written memorandum, signed by both parties, is necessary. It is not fair to the contractor to sign for him and to the proprietor, your client, that no work beyond the contract should be paid for unless these orders or vouchers are produced by the contractor, this often forms a clause of the contract, and the contractor must be careful to see he gets vouchers, and ought to refuse to carry out the work unless a voucher is given. But they are often overlooked, extras ordered verbally and carried out, and the matter becomes serious for both parties. It is not fair to the contractor to sign for him and to the proprietor your grant payment for it, but it leaves a loophole for a dishonest contractor to pile on the extras, and you have little chance of disproving them. To have to allow them with doubt in your mind, is to say the least, unsatisfactory.

I have found among certain contractors a dislike to signing contracts, not because they wish to get out of their business, but because they think that because they are not being tried and their feelings are hurt. I have been told, "I never signed any contract for So and So, and I have done thousands of dollars work for him and had no trouble." That is all very well, but business is business, and be a contractor ever so honest, no one can say what may befall him before the works are completed, and if any misfortune does occur to him what have you to show your client, or how can you prove in the event of dispute, that you are not responsible for the contractor's loss? The matter is not as you may think, but it is a matter of feeling; where business is concerned "feelings" must not be considered. We are bound from our position in our clients' interests, to see that the proper signatures are attached to the deeds. I know an architect who never obtained the builders' signatures until just when the work was completed and before the final settlement took place. This means an unnecessary risk in more than one direction. If the contractor was not bound to perform the works, his client was not bound to pay for them, and he hid himself open to the very serious charge of conniving with the builder to the defrauding of the proprietor.

It is one of the great questions of the day as to whether an architect should have anything to do with the contract. It certainly is lawyer business, and the architect should not have the responsibility of drawing up the contract. Again, the architect, in the interests of his client, has a duty to the contractor to do certain things. Everything except payments to be made by the proprietor is to bind the contractor, so that at least it is a very one-sided document, decidedly in the favour of the client. The use of printed forms saves a great deal of responsibility, but these in common use to-day are doubtful and unsatisfactory, and the only remedy is for a lawyer to be consulted and draw up a proper form covering nothing but the architect's contract, excepting that the architect should be writing to accept the architect's contracts entered into between the proprietor and builder, and to assist in their carrying out. But it is of course to the architect's interest that matters should run smoothly between the contracting parties, so perhaps his signature may be dispensed with. Before long, however, we may hope to see some such change made in the contract system.

Now a few words upon tenders and tendering. As a rule if a building tendered for, and it is the lowest tender that is accepted, and naturally the contractor who has sent it in, expects to be employed. But the question is "Who is the lowest tender, was he invited to tender, and is he responsible?" If he has come in answer to an advertisement for tenders in the public press, he is an invited tenderer and you must respect his tender, for anyone can answer an advertisement and perhaps give you some trouble. Perhaps he has invited to do the best you can get. He is probably best up, and he takes the chance of failing or making something out of the "job." Now unless you have expressly stated that "the lowest or any tender will not necessarily be accepted," this man feels that he has a grip on you, and being unscrupulous, will make the most of it, and unless you can find out anything against him definitely you feel obliged to employ him. It is an unpleasant result of trying to do the best you can get for your client. But it is best to be satisfied to entrust the work, and have a printed form of post card, with blanks to fill up before issuing, stating that tenders will be received, etc., etc. It is safest always to insert the clause about not accepting any tender of necessity, in case the prices come out too high or the proprietor from some cause or other decides to employ another contractor. It is finally insatisfactory to a tenderer, who is invited to tender, when he finds that his tender has been accepted had the works proceeded, is entitled to remuneration based on the time taken by him to make up his tender. It is the custom of the profession in England to allow contractors to know how each man's tender compares with the accepted one. Some of the professional journals make a practice of publishing lists of tenders without charge. It is finally insatisfactory to a tenderer, who is invited to tender, when he finds that his tender has been accepted had the works proceeded, and does not know at all whether he was anywhere near the accepted amount.

Perhaps in inviting tenders you have not on your list a man who considers himself eligible for the work, and I have heard some people argue against this method of inviting, because by omitting someone, you might give a fence. Now we cannot spare a line to let any contractor know that he is not on your list who thinks he should be there, that is his fault; if he wants work from my office he should come and show me that he is eligible, and then I shall be glad to give him an invitation. The safest way or method in the

matter of tenders is to know who it is you invite, invite only such as you would employ, and accept the lowest tender unless you have good grounds for knowing that it is too low, and then put up the list of tenders for the tenderers' inspection. I have always found this answer well. If the lowest tender is considerably below the next and there is a fair equivoque of tenders above the second lowest, the probability is you will reject that lowest tender, and you have a good ground for doing so. The probability is also that either the tenderer has omitted some item or his tender is fraudulent, and by exposing all tenders received in a list, you lessen the chances of unfair tenders, because the tenderers know that they will be exposed.

Specifications are often written in a very loose kind of a way. Vague clauses are introduced which cover a great amount of ground; but leave the actual intention of the architect a matter of doubt, to the tenderer; and they are generally made by those who use them to turn out in the interest of the client. If you have drawn the plans you know exactly what you want, materials and workmanship—and although it takes time to write a detailed specification, it is part of your work to do it thoroughly. Contractors would far rather have a long specification to tender on than a short and vague one. This vague system has been too often the cause of our unskilled and unscrupulous practitioners to the defrauding of the contractor, a base and unprofessional action, that it is hoped that the formation of this Association will do much to prevent.

An unscrupulous one is sometimes made of the clause of our contracts which states that the specifications and drawings shall be taken together, and that items shown on the one and omitted in the other one, as far as they are necessary for carrying out the works, to be included in the contract. This clause only refers to such works as are necessary that must not and could not be omitted, and that the contractor ought to foresee will be necessary. And yet, in the debased condition of professional practice, I have met with cases in which even faint pencil markings over colours have been insisted upon as being included within this clause. When such a clause is inserted the contractor ought to insist that the drawings be his to sign.

To keep up the tone of our profession, we should exert ourselves to see that we have no loophole through which the charge of unfairness can be fired at us. Drawings should be inked in, and all pencil notes and marks rubbed away before the tenderers see the drawings at all. The drawings a man takes his quantities from should be the contract drawings. These having been inked in previously, leave no opportunity for a dishonest or troublesome contractor to be carrying out the works, to be included in the contract. He sets for himself that no alteration or change incurring further expense to him can be made without his seeing the marks on the drawings. You are freed from even the possible annoyance of any dispute.

One thing more before concluding I must touch upon, that is the impropriety of taking commissions from contractors, an action that shames a man, and causes him loss of dignity before the contractor, however bold a face he may put upon it. However sharp he may try to be, it is our safe, as he sets for himself that no alteration or change incurring further expense to him can be made without his seeing the marks on the drawings. You are freed from even the possible annoyance of any dispute.

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DISCUSSION.

Mr. Gordon said it would be well if the Association would provide a form of certificate, which would be recognized as a standard form, and which would relieve architects from trouble in that matter—both a progress and final certificate.

Mr. Curry suggested that Mr. Bousfield be asked to submit a form that he might think desirable.

Mr. Bousfield did not think any one man should undertake such an important work. It would be better for a committee to act. There were some men who made a practice of putting upon their certificates that they will not be held responsible for any bad work that might have been done under it. The certificate simply meant that the contractor had done a certain amount of work.

Mr. Burke said it appeared to him that a good many persons thought a certificate was equal to a cheque, whereas it was merely a statement that a certain amount of work had been done.

Mr. Curry agreed that something should be done with reference to certificates. If an architect wrote across the face of a certificate that he would not be responsible for the work done, he killed its value. It was simply a question as to how far the architect could throw off responsibility without injuring the certificate. The better plan would be to insist upon a definite understanding with the client as to what duties the architect should assume. It might be agreed that the architect should not assume responsibility for such bad work as by ordinary care and diligence he could not discover. It was simply impossible for an architect to see all the bad work that might be done about a building. It was not fair to hold him responsible for everything. If an architect was to be responsible for all the work on a building, he should receive a remuneration that would be more equal to the risks he had to assume. Five per cent. did not more than pay the architect for his time and trouble. No business man would assume enormous risks without being paid for doing so. There should be some uniform agreement placed in the hands of the clients showing the position assumed by the architect.

Mr. Paull said that if all that Mr. Curry said were admitted, the value of an architect would be lessened considerably. A good deal of faith in men was required in order to get through this world. If proper contractors were selected, an architect could have no doubt that the work would be properly carried out. The trouble, however, was not so much with the contractors as with the workmen, who were frequently inclined to scamp their work.

Mr. Curry said that with reference to Mr. Paull's reply to his remarks, he wished to say that every architect knew that many clients had a most

remarkable ideas of what the architect's duties were. It was simply a question of explaining to the client what an architect's duties were. As a rule, the architect should not be the Clerk of Works. He should only be supposed to say a certain kind of work, and certain standard of work, were necessary to produce certain results. He did not think it should be necessary for an architect to visit a building more than once a week, if the work were properly managed. If the contractor were supplied with proper drawings, and if capable, willing men were carrying out the plans, the work should go on smoothly. It should not be necessary to watch a man in order to prevent him from using soft brick. Some people had an idea that an architect could put up a \$15,000 building for \$7,500, and some architects endeavored to do so, with the result that they were disappointed. Clients who expected to get a first-class building put up for less than its value, should be told what they would get. A great deal had been said about the best class of work being necessary, but a man could not get it unless he was willing to pay for it. What he desired to see was that this misunderstanding should be removed. On the subject of tenders he would like to hear the views of the architects present. He did not think any architect should reject a tender because he might think it was too low. If he thought a contractor had made a mistake he would ask him to look into the matter again, and if, after doing so a second time, he made no change then the tender should be rejected. This was in a case where tenders had been privately called for. If tenders were publicly advertised for in the papers, and it was intimated that the lowest tender would not necessarily be accepted, the standing of the man in his trade should be considered. He would set a certain value upon each man who tendered. A good man might be worth say ten or twenty per cent. more than an inferior man. If the tender the former sent in was eight per cent. higher than the latter, it would, considering the relative merits of the men, be lower. In this way he would rate each man according to the value of the work he knew that man to do.

Mr. W. J. Smith believed that under nearly all circumstances the lowest tender should be accepted. There were lots of men in every branch of trade in Toronto who were known to do work right up to the mark. Of course if the architect had a doubt in his mind as to the accuracy of the tender, he would do right to ask the man making it to look into it again. But no tender should be finally rejected on that ground. No client should be called upon to pay money out of his pocket simply because the architect might take exception to certain figures. With reference to certificates, he had seen a clause in some that they were not to be regarded as acceptance of the work done. That form had been in use by builders in Toronto for the past fifteen years, and had successfully held its own in the courts.

Mr. Wilson asked if a contractor for a certain work gave figures that were accepted, and was instructed to go to the architect's office and have the agreement drawn up and signed by the architect, and if before the proprietor signed it, he decided to have the work done otherwise, what rights had the rejected contractor.

The Chairman said that if the contract was signed by both parties, it bound both. If a proprietor instructed his architect to accept a tender, he had no right to act contrary to that without notifying him.

Mr. Gordon said that some years ago he had a case somewhat similar to this. He was instructed to accept a certain tender, and he got the contractor to sign. In the meantime the work was delayed at the instance of the client. The contractor had been at so no expense in purchasing and holding material, and he sent in a claim. This claim he (Mr. Gordon) considered perfectly reasonable, but the client tried to make out that because the contract was not signed it did not bind him. The matter went to the courts, and the judge would not listen to this contention, and held that as the contract had been signed by the contractor with the intention of the proprietor signing it, it was binding.

The Chairman said there was also the case in which the late Lionel Yorke claimed compensation for the delay of the City of Toronto in not having the excavation for the foundation of the Court House proceeded with. The contract was awarded to him, and the signing was delayed until the City Treasurer, who was away, should return. It was decided some time afterwards that the work should not be proceeded with. Mr. Yorke entered suit to be reimbursed the expenses he had undertaken. He had sent for large quantities of Portland cement. The claim he (Mr. Storn) believed was established and paid.

Mr. Langley said that when a client employed an architect to build a house, he did so because he could not do the work himself, and he counted on the architect's honesty and judgment to have the work properly done. The architect's work was entirely in his own hands. There was no reason why the architect should fret his life away by employing inferior contractors. If an architect was careful of his own credit, he would not do that. When an architect was asked by a client to prepare plans, he was expected to carry out those plans as perfectly as possible. It rested with the architect to say whether the work should be done by an inferior contractor. There were enough contractors in Toronto who could carry out the work faithfully. Architecture should not be a worrying, harassing business.

Mr. Curry said there was another point that should be dealt with, and that was specifications. It was not fair to ask a contractor to tender under family specifications. A great deal of this was done from two reasons—firstly, that the architect did not know what he wanted, and secondly, that he might be so pressed that he had no time to decide what he wanted.

This was not fair to the contractor. Some men specified "all work must be satisfactory to my client." It was impossible to know what that meant. Others specified that the work must be done in a workmanlike manner. Time was when that was considered sufficiently explicit. Nobody knew what it meant. Under that specification a man might put on a 15 cent or a 15 lb lock. Now it was the practice to specify more definitely. Sometimes, however, in calling for some particular article, the architects were accused of favoring one special industry. What might be a first-class thing in one house, might not be first-class in another house of more expensive character. Mr. Bousfield said he would like to hear more upon the subject of tendering. He had not changed his views on that matter.

Mr. Langley said that where tenders were advertised for, he felt that the right was reserved to accept any tender. Where a limited number were solicited to send tenders, he felt it was a matter of simple justice and honesty that the lowest should be accepted. In giving a special invitation to men to tender, it was done upon the supposition that they were thoroughly reliable.

Mr. Bousfield said that was the point he had endeavored to bring out. In inviting special men to tender, only reliable men were asked. It was impossible to get beyond the fact that clients as a rule wanted to make the most out of a small sum of money. If an architect accepted a tender that was \$500 higher than the lowest, there would be apt to be some difficulty.

The Chairman said that if a certificate were granted, it would mean that the architect was prepared to accept the work it represented. Of course there might be a private agreement between the architect and the contractor that any work that was not up to the mark should be improved, but the architect could not relieve himself of responsibility in the matter. With regard to tendering, it was a well understood principle that if tenders were advertised for with the proviso reserving the right of selection, it was quite fair to decide according to the merits of the men who tendered. If special invitations were issued, they would only be issued to men who would be acceptable, and consequently the lowest should be awarded the contract.

Mr. Gordon's motion, with reference to the special form of certificate, was put and carried.

Mr. Helliwell moved that a vote of thanks be tendered to Mr. Bousfield for his excellent paper.

Mr. Curry seconded the motion, which was carried.

WINNIPEG.

(Correspondence of the CANADIAN ARCHITECT AND BUILDER.)

THE building season is rapidly closing down in this city as far as applies to outside work, but there is considerable stir in several branches of the trades owing to buildings being started rather late in the season, and therefore carpenters, heating engineers, plumbers and painters are very busy completing the several contracts. As an example of the quantity of hot water heating yet to be done, Messrs. N. D. McDonald & Co. have contracts amounting to \$6,500.

Messrs. Rourke & Cass, the contractors for the new N. P. depot, hotel, train shed, &c., have succeeded in roofing in the depot, and are confident that the employees of the company will be at work in their splendid new offices by the middle of January. The new depot, although plain, is a very imposing building of three stories, and half story basement, faced with St. Louis red brick, with brown stone dressing. The train shed will be covered in a few days, when passengers for the first time in Winnipeg will step off or on the cars under cover. The stonework of the new hotel has been completed up to first floor level, and will be allowed to stand until spring.

Mr. Chatterton, the well-known architect, of this city, has just completed thorough transformation in the McArthur Block, both inside and out, for the London & Canadian Loan Agency Co., and the Confederation Life Association are just beginning to rearrange the inside of the block hitherto known as the Beggs block. This building is to be fitted up as offices and residential chambers, all to be heated with hot water, and lighted by the incandescent light. Messrs. Timewell & Son, are the architects.

The new city market is complete, except the heating, which is being done by the firmen under the superintendence of the City Engineer. This is quite a new departure from the ordinary way custom, which should gratify the most radical political or municipal economist. The outlook for the building business for next year is very promising. All the architects have already received instructions for considerable work, and 1890 will be the busiest year yet experienced for Winnipeg and the province generally.

MONTREAL.

(Correspondence of the CANADIAN ARCHITECT AND BUILDER.)
INTERESTING TO ARCHITECTS.

W. McLea Wallbank, architect, vs. the Protestant Asylum for the Insane, was an action in the Superior Court brought by Wallbank against the governors of the Insane Asylum, to compel them to submit the plans for their new Asylum to experts or to pay him the value of his plans. The case was heard before Judge Taini recently. The plaintiff proved that an advertisement appeared in the public press asking architects to compete "for the best plan of accommodation for two hundred and fifty patients, cost not to exceed eighty thousand dollars (\$80,000). For further information apply to G. B. Burland, President." Mr. Barland's evidence went to show that Wallbank, anticipating that the competition would not be free and fair, so informed the said President, and asked him if the decision would be

from local bias, to which the President replied that everything would be done fair and above board, and that Doctors Workman and Buck, of Toronto, would be the experts named to decide upon the best plan. He further stated that the architects who were awarded the building never competed for it. Mr. Hollis, Secretary of the Board, proved that a resolution was passed authorizing the advertisement in the public press of Ontario and Quebec, and the names of Workman and Buck as referees. He also proved that plaintiff's plans were never submitted to said experts, and that a sealed envelope containing a builder's estimate to erect the buildings according to plaintiff's plans and specifications was opened at the meeting, although endorsed on the outside "not to be opened unless plans are accepted," that an abstract referring to the cost of the building was copied therefrom into their minutes. Mr. Hopkins, architect, swore that he paid no attention to the advertisement in the paper, that he was employed at the asylum work since 1881, and had prepared several plans for them, that he submitted no plans for the present competition, that some time after the expiration of the time allowed for the competitors' plans to be sent in, he was notified that the governors had passed a resolution asking him to allow his plans to be submitted in competition, but that he never replied to it. J. C. Wilson, M. P. swore that he passed the resolution referred to by Mr. Hopkins, because he thought that Mr. Hopkins, having been engaged for so long, would know best what they wanted. Other witnesses on behalf of the asylum stated that the plans they adopted were chosen because they were cheapest, and that they were exposed in the Mechanics' Hall to public inspection for a week. Judgment was given in favor of the defendant, the court holding that the plaintiff did not comply with the advertisement because he did not prove that the buildings could be erected for the eighty thousand dollars. The case is likely to be taken to Appeal and tried before a higher court.

The judgment above referred to, unless reversed, will form a precedent in future for all architects competing in the Province of Quebec, and in the meantime I would advise those sending in plans, where they are limited in cost, to be sure and label them "This building can be built for so-and-so," otherwise you will "get left."

CANADIAN SOCIETY OF CIVIL ENGINEERS.

The Society at its last meeting decided to hold a dinner at the Windsor Hotel on the evening of the 23rd January, at which ladies will be admitted as guests, in place of the conversation as heretofore. A movement is also on foot to have a convention meet during the summer in some of our western or American cities, and a committee was appointed to report at the annual meeting.

CONTRACTORS' ASSOCIATION.

At the annual meeting of the above Association, Mr. William Rutherford presiding, Messrs. Joseph Brunet, C. T. Charlebois, F. Fournier, J. B. Dupren, M. Martin and Joseph Lambert were elected directors.

MISCELLANEOUS.

The plasterers are agitating for an increase of wages from \$2.50 to \$3.00 per day and talk of striking if they do not get it.

The building inspector and drain inspector state that the practice of using bad mortar is on the increase, and have recently taken legal action against several contractors.

The Fire Company has been asked by the Underwriters to sanction the appointment of an inspector of buildings in course of erection on their behalf, with the view of preventing structural defects which would be dangerous in case of fire. The insurance people will pay this officer themselves, and desire the city to pass a by-law to give him power to act in the direction he-ired. It is altogether likely that the desired by-law will be recommended to council, as it is felt that such an officer would be of much assistance to the city inspector.

THE PERCH AS A STANDARD OF MEASUREMENT.

Editor CANADIAN ARCHITECT AND BUILDER.

SIR,— My attention has been drawn to the statement made in your columns by "Comment," that 163 cubic feet constitute a perch of stonework, instead of 24.75, as published in one of my articles on estimating. Now if "Comment" will consult Messrs. Orton & Ladler's calculation, the Normal School Arithmetic, or any practical builder in the Atlantic or Middle States, he will see the accuracy of my figures. It is however evident, that there is not a standard for the perch; as I have recently seen the question asked from Minnesota also concerning its actual dimensions. "Comment," therefore, in figuring on stonework, can calculate its quantity by 163 cubic feet, or by the whole number of cubic feet the work contains at price per cubic foot.

The system of calculating by the perch is obviously a defective one, and builders' will rarely find it in an architect's bill of quantities, for the reason that were the architect to call for any number of perches of stone, owing to the variation of the different quantities in the perch existing (according to custom or usage) in different localities, serious complications might arise. For instance, if 50 perches of stone be required for a foundation, one builder figures it at 16.50 to a perch, another 24.75, another some other quantity. Now if the drawing be not carefully sealed, and the exact solid content found by the estimator, it follows that he who uses 16.50 will be short of the architect figured it at 24.75, and he who uses this quantity will estimate correctly. If on the other hand the architect intended, or rather if the drawing measures 50 perches at 16.50 to the perch, then the 24.75 estimator will be largely over in his calculation.

Bills of quantities are often made out roughly in architects' offices, and I would recommend all estimators to go over the plans very carefully, and if there be a mistake not to hesitate to show it to the architect. Architects are usually very honest men; besides they do not like extras, and an over quantity not called for must be put in as such.

Estimators ought, as far as possible, to make out their own quantities directly from the plans, then they are certain of their measurements.

It gives me pleasure to see questions of this kind crop up, as I have no doubt that, like a drag net, they will bring to the surface some of the snags on which many an estimator has been wrecked.

Respectfully yours,

"CATO."

PUBLICATIONS.

OUR excellent New York contemporary, *Building*, has changed its title to *Architecture and Building*, in order that its scope may be the more readily understood. The New Year number just to hand, bears a new heading of appropriate character, and embraces a couple of new departments which should further increase the interest of its readers.

We have received from Messrs. Palliser, Palliser & Co., 24 East 42nd St., New York, a copy of a work entitled "American Architecture." The aim of the work is stated in the preface to be "to present a variety of plans which, with few additions and changes, can be adapted to the requirements and individual tastes of those who build, whether living in town or country." This is a laudable ambition which many other publishers have shared, but the results of their efforts have not worked out so satisfactorily in practice in some instances as builders could have desired. The present work, bound in cloth, is sold at \$2.



STRENGTH OF LEAD PIPE.

MR. George L. Knox, of the Colwell Lead Co., in writing on the strength and durability of lead pipe, says:

"Lead pipe will sustain quite a heavy pressure if it is applied without shock, but in all practical work, in the plumbing of houses especially, the column of descending water suddenly stopped by the closing of a faucet exerts an increased pressure that will burst pipes which would stand a very much larger weight of still water. If the safe working pressures given in the table referred to were only slightly in error I would not think it necessary to call your attention to them; but my practical experience has shown that the figures there presented are very far from consistent with safe practice. Perhaps the best evidence to present in support of my views are instances that occurred in practical work.

"When aerated bread was first made in this city we were asked to furnish a tin-lined lead pipe under 2 inches diameter to stand a pressure of 140 pounds to the square inch, the pipe to be used for conveying the carbonic acid gas which was forced through the dough after it was mixed. We furnished for the purpose AAA pipe, but it would not stand the pressure. We then made for them a heavier pipe, but with no better results. Finally, we made a pipe that was at least three times as strong as AAA pipe, but even this did not stand the 140 pounds pressure. Of course these pipes did not give out at once and the strongest lasted a few weeks but eventually the lead swelled and burst. The parties for whom we furnished the pipe were finally obliged to use an iron pipe, tin-lined, the tin being necessary to prevent the corrosion of the iron by the carbonic acid gas. You will notice that the pressure was only 140 pounds to the square inch, and according to the table you printed the 'safe working pressure' of all the AAA pipes under 3 inches was considerably in excess of this figure."

Mr. J. C. Paterson, of Paterson Bros., Toronto, Montreal and New York, has purchased a valuable plant and mill at Portage la Prairie, Man., and will commence at once the manufacture of building paper.

On the night of the 10th inst., the Adamant Manufacturing Co.'s premises, Esplanade St., Toronto, were seriously damaged by fire. As our readers are aware, the Company only recently commenced business in Canada, and sympathy will be felt for them on account of the misfortune which so soon overtook them. With commendable pluck, however, they have undertaken the work of reconstruction, and will soon be in as good a position as before.

Mr. E. W. Rathbun, of Deseronto, in a recent address at Kingston said: "The products of our limestone, marble, granite and sandstone quarries, within this area found in variety and abundance, are called for and used in Chicago, Cincinnati, Toronto, Montreal and other cities of both countries. The vast deposits of carbonate of lime, of marl and clay, but recently miles apart, and now, through the construction of railways, brought together, will shortly yield a Portland cement, for which hundreds of thousands of dollars go out of the country yearly, and which, more than in any other section, is needed within and about this centre for the numerous locks, dams and retaining walls of our vast system of canals and hydraulic privileges. Our quarries of native cement, not forty miles from this its institution of learning, are equal in quality and quantity to the famous beds in New York and Ohio, and yet are only now becoming recognized."



ARCHITECTURE WITHOUT DECORATION.*

THE buildings which have no statuary may be, like the admirable Trocadero palace, fine in a mass and in minor proportions, but they will be nearly bare of details, without moldings (and how much they lose in losing these!), without sculptured ornament, without color, except some two penny scraps of blue and gold in the upper members. An excellent colossal statue crowns the edifice on the Trocadero, and interesting groups of heroic size form accessories and outworks to it, but it is too vast to have realized sculpture lavished upon its whole mass, and therefore it is bare.

Nor is there any prospect of bettering the condition of our workmen or of bringing them nearer in harmony with the task that is set before them. The tendencies are the other way. Machinery, labor saving contrivances of a hundred sorts, individual personal ambition to be thought an artist and to rise in some way out of the role of handicraftsman, and the almost absolute disappearance from modern life of any understanding of decorative design which, so far as I can see, is recognized only in gentle harmonies of subdued color and in a certain play of metallic or textile surfaces, not in delineation nor in modeling; these and all the influences of the day warn us not to expect any nearer approach to the conditions requisite for Gothic art. We have to face the situation and try to realize that if one thing is not possible, another is; that, if we cannot get workmen who are also decorative artists, we can still get workmen, and we can still get artists. That is our hope, and our only hope—for, bear with me while I continue to insist upon the incapacity of our community for decorative design. Consider: Have you ever known a man who could fill a panel with leafage in relief and cast the parts so as to occupy the space beautifully, solids and voids balanced, and the pattern or scrolls of foliage so kept up from the background, that at thirty feet, as well as at three feet, it looks well—looks like a successful design? Do you suppose there is one designer in New York who can do that, unless he is frankly, consciously copying Renaissance work, or Indian work? Or are there actually two or three whom you could name? Let there be two or three, and my point is equally well established. It is not by an individual here and there that the demand for decorative art shall be supplied.

No modern decorative work even seems good, is even attractive and agreeable, unless it is closely imitated from ancient work. If it is a carpet we have to design, we study Indian, Persian and Anatolian rugs; if it is wood inlay, we study Italian fifteenth century and modern examples; if it is metal relief, we study Japanese stamped and Italian hammered work; if it is wrought iron, we study French and German fourteenth century *ferreons* and *grilles*; and, unless we stick close to our originals we are lost. There are some industrial arts in which it has not been the fashion to study and copy ancient examples; thus the porcelain and delf for our tables are not often copied, and they are hideous. One never by any chance sees a dinner set to which he would willingly sit down. Mr. Briggs, at the famous corner of Washington and School streets (need I say in Boston!), had a tea set two years ago which were lovely; but it was painted with realized and very faithful sprigs of roses, no two pieces alike. Of ceramic painting we shall have to speak by and by; but now consider furniture. It is very curious to compare the sideboards and tables made by the English during the past fifteen years with what the French have produced during the same time. The English, having passed through a Gothic experiment and the Queen Anne fad, are working on general principles, combining all sorts of ideas with boundless ingenuity and energy, and the result is curious and interesting, but dismally ugly. The French, tranquilly working on traditional lines, turn out cabinets and tables of really extraordinary beauty, with sculpture which is worthy to be put beside the ancient work which it imitates. A French town of forty thousand people will

have two or three good carvers, or really more than that, for each such workman has a helper or two who can do parts of the work with great acceptance. They can carve for you panels and friezes for a *lit Louis XV.* or a *babut Louis XVI.* with marvellous ease and fidelity to style; and, when they have no job in hand, they or some of them can produce deceptive pieces to take in the unwary amateur. The furniture they produce, in close imitation of styles of the seventeenth and eighteenth centuries, is as superior to the English furniture in comeliness of proportion and in beauty of sculptured detail as it is inferior in novelty, in originality, if that word may be used for what is unsuccessful. So with silverware; our American silver for table use, and for our few occasions of ceremony and show, has been wonderfully original; its makers have been studious of many styles and anxious about all methods of work, and careful of its handicraft. But the regular traditional designers of the Parisian workshops produce more graceful and more satisfactory designs. No one else can engrave, or chase, or inlay with gold and copper a salver or a goblet as the Frenchman can, because they do very nearly what their progenitors did, and copy frankly. We are driven to copy all their ornamental work, all patterns, all scrolls and tracery, all simple embossing, all weaving, all embroidery of garments and the like, all inlay, all architectural carving—under the penalty of spoiling our work if we try to be original.

An able man whom I may name as, to our loss, he is no longer an American artist, Alexandre Sandier, had a good opportunity one year, in the prime of his strength as draughtsman and designer, to work at ceramic painting on a rather large scale. He had returned to his native place near Corton, below the Golden slopes of Burgundy, and had found there a newly established factory of faience; he spent much of his winter in experiments and with some practical result. Besides the scores of failures and the many pieces he left with friends in France, he brought some huge plateaux and many plates and dishes to America, some of them failures in firing, indeed, but all interesting as attempts in the decoration of simple articles.

His conclusion was that modern ceramic decoration must be by means of pictures; by views, landscapes, heads, portraits, what you will. I have a plate on which, in inauspicious violet, he has painted an opening in winter woods, a road passing into the forest, covered with trodden snow, and a French soldier lying dead face downward, in the snow and mud. All this is as far elaborated as the monochrome would allow. He tried decoration in various styles also, but his conclusion was this: we must leave to the Orientals the decoration by means of scrolls and formal patterns and conventionalized leafage; a stupid Chinaman at sixpence a day can beat our best man, at that; we must do what the Chinaman cannot do, and bring the best science we possess to our pottery painting.

The French potters have felt the same truth, and the only important modern ceramic products, of course, excluding the copies of old works of art have been, I think, the huge deck platters and the like, upon which great peonies or poppies disport themselves freely. If it is said that they are not wholly realistic, that they are conventionalized, after all, the answer is, I think, that they are not consciously conventionalized, that the artist, a practiced flower painter, has got into his work all of the poppy or peony that he possibly could. Oil painting of flowers on canvas is conventionalized because it has to be; water color flowers are conventionalized because nature is too subtle for the artist; in this way and no other, are the French flowers on faience other than fully realized.

We need a definition for the term "decorative art," and we need a good term for that art of representation and expression which is not primarily decorative. One writer of our time makes careful distinction between "art" and "decoration," but that seems to lead to greater confusion. The distinction to be drawn is this: If a drawing or a modeling is done to explain and express the thing represented, or to convey the artist's thought about the thing represented, that, on one hand, is art of representation and expression; let us call it *expressional art*; if, on the other hand, the adornment of a surface, a weapon, a utensil is chiefly sought, and the natural objects represented or suggested are used only as suggestions, to furnish pretty lines

* Read before the New York Architectural League, by Mr. Russell Sturgis.

and pretty tints, which lines and tints might have been found or invented apart from them, were man's mind more creative than it is—that is decorative art.

Consider stained glass. The most magnificent windows I have ever seen have been produced now and here—now in the fourth quarter of the nineteenth century, and in inartistic and half civilized America. But they have been the productions of highly trained, highly ambitious, highly paid artists. When they are compared with even fine ancient glass, the ancient glass suffers. There are windows here in America that beat the windows of the Saint Chapelle; yes, or those of Fairford Church; yes, or those of the Reims; yes, as decorative art, of course, but in splendor and interest, as a consummate painting by a master surpasses a piece of Tarsia or a Chinese enamel. For the American windows are elaborate pictures, for which prices, enormous and yet inadequate, have been paid. And into each of them the artist has put his whole accumulated strength of knowledge, and has avoided no care nor patient preparation. They differ radically from paintings on canvas or plaster, else they would not be good, because light-transmitting color and design is a very different affair from opaque and light-reflecting color and design; but the one equally with the other is expressional art in the first place, and decorative art only in the sense that anything lovely is a decoration.

Consider mosaic. Of that we cannot be so sure, because modern mosaic has not succeeded as yet. It may be that the limitations are such that only decorative art can be achieved in mosaic. If so, we may be sure that modern mosaic will not succeed, and that the medium will be used only by archaeologically minded architects, ecclesiologists and the like, and those enemies of their kind who restore ancient buildings. Apart from these, mosaic will be tried by and by in earnest, as glass has been; either it will be found capable of being treated for expressional art, or it will be abandoned. Of such decorative treatment of the draped and crowned and jeweled human figure as we have left us in San Vital, or San Apollinare, or San Marco, no modern, working otherwise than as a mere copyist or adapter, is at all capable.

Consider wall painting. Send the mind to Assisi, to the Riccardi Chapel, whither you please. Recall the painted splendors there, and compare the more ancient with the more recent. The older are the more conventionalized, because the artist could so well represent nature nor express his thoughts. Raphael painted in the Vatican and Pinturicchio at Sienna, and even Giulio Romano at Mantua, on plaster, as well as they knew how, with as complete realization as their materials allowed them, exactly as Tintoretto painted on canvas at the school of San Rocco. And so our modern painting will be done. So it is being done to-day. The wonderful borders of the pictured panels at Assisi, and such checkered and intertwined patterns as those at Lodi or Vercelli are out of our reach, as comparatively impossible to us as an Indian shawl. But we can get the pictured panels; we must pay pretty well for them, indeed, but what is ten thousand dollars, more or less, when New York has to fill a church wall.

Never mind now the question of fresco or oil, water glass, spirit varnish, encaustic and the rest; the question whether wall painting can be made to endure gas and furnace heat and sudden changes of temperature and changes of humidity. If we Americans have an atrocious climate, we are thought to have the intelligence to wrestle with it; when we need to protect our wall paintings, because we have some to protect, we shall find ways and means. Never mind these questions, the vital, the interesting question is this, whether if we provide walls and demand realized and complete painting for them, the painting will come. And we need have no doubt that it will come abundantly, freely and cheaper than we can now imagine it to be, as the painters get their hands in.

With all this we can see whither we are being led. The architecture of the future is not to be Gothic; nor is it to be Romanesque, nor French Renaissance, nor any style which demands decorative sculpture and is poor and nude without it. The mass of our future building is to be simple, heavy, massive, comparatively unorganized; perhaps not a mere torpid pon-

derosity calculated only to shelter us and to afford a background for the work of our artists, but something in that way. Cut stone, which has already nearly vanished from among our industries, is to become a tradition. Terra cotta is to cease imitating stone, and to become a means of carrying out bas reliefs and fully realized sculptures of all kinds, in a material which can bear the weather. Moldings I think we may keep, if we choose to, though it may be that the tendency of our building will be to forget them, to ignore them as no longer a part of an architectural programme. Columns we shall keep merely for the sake of the beautiful material of which the shafts can be made. Capitals indeed may be sculptured, but they are more likely to become blocks of some beautiful stone, prettily contrasting with the shafts, or hollow bronze baskets, or rings from which will project the bulbs of the electric lights. Arches will be of any shape that comes handy, and built anyhow, segmental and basket-handle shaped when there is little room, fantastically oriental in curve where there is space enough. Scientific construction will be only interesting in so far as it is economical and saves our money for the more artistic work which needs it so much.

Beauty of proportion will remain to us only so far as it is easy to secure in the simplest masses, only in a general harmony of relative width and height, length and breadth; and in openings somewhere near their true relation to one another and to the wall surfaces that surround them. Elaborately organized building will cease, and in this way something will be done toward cutting down the monstrous cost of modern work. Our work will cease to be northern, and will become like that of Sicily or the south of France, where materials, no matter what nature so long as they are hard and heavy, are encrusted in the solid shell of mortar. The vault will be non-elastic, unyielding, a solid eggshell, as it was under the Roman Empire. The whole will be built up by aggregations of concrete in wooden molds, with the thinner walls of brick as they are with us to-day.

The problems for the constructor thus simplified, and those of the decorative designer given up, as beyond our strength, the architect will become an organizer, a distributor of the work of the painter and sculptor; providing the well exposed, well lighted wall surface for the one; and for the other the salient angles and dusky niches which his statuary needs, and the sunny and sheltered nooks which his bas reliefs require. Nor is this so sad a prospect. There is no need to despair of architecture because we can no longer work as they worked in the sixteenth century. There is to be a Protestant Cathedral in New York, and we know that if it is to be a Gothic structure, it will be a failure, and less beautiful than the bare hill on which it is to be placed. The combined talent of the closing years of the nineteenth century is not capable of producing a Gothic cathedral; but suppose that the programme was to be like this: Vast and well proportioned vaults like those of the Basilica of Maxentius, covered with mosaic, of gold, as in San Marco, or of green and blue, peacock fashion, as at Ravenna, with groups or a frieze of figure subject at or above the springing line; the walls below smoothly sheathed with semi-primitive stones, like, again, San Marco, where the slabs are set edge to edge without molding or border, and are reversed as to grain, exactly as we treat veneers to make a natural pattern; the columns of whatever beautiful stone we decide to employ; we don't know yet what we can find, but there are plenty, if we do not ask—as we shall not ask—for strength. The capitals may be prettily shaped lumps of the same or kindred material, or may be groups of figure sculpture, something as are those of Milan, the best thing there is about that hideous church. The floor to be Opus Alexandrinum; so much ornamental design as will lay out a pattern of circles and triangles, I suppose we must allow. And along the walls at the best height for examination and the best point for lighting, we will have a belt, ten or twelve feet wide, and hundreds of feet long, filled with wall painting of fully realized character, naturalistic as, say, the work of Paul Veronese, the king of wall painters, the model man, the great adept, the one who has best known how to make a vast composition permanently splendid to the eye. Incrusted in the marble or alabaster of the wall will be the bas reliefs of religious or historical or emblematical subject. And statuary will be abundantly used, either set free between the piers, as at Orvieto, or ranged on each side of a nave or aisle or choir, as at Innsbruck, or, as one had rather see it, perhaps, so clustered around the greater piers, as of the entrance to the sanctuary, or those which carry the dome or tower, that it may seem to help to make up their mass and weight, and give character to what would be otherwise very severe, very square, very naked indeed.

SANITATION IN A CITY

DISPOSAL OF SEWAGE.

By "C. E."

THIS is one of the most perplexing problems, owing to the rapid growth of towns, that the municipal authorities and the sanitarian have to deal with, both from a sanitary and pecuniary point of view. The fact that the particular system which will suit one town, may be totally unfit for another, adds greatly to the difficulty of the problem the sanitary engineer has to deal with.

We will take the different systems of disposal in the order in which they are generally mentioned: 1st, discharging the crude sewage directly into a large stream or body of water; 2nd, filtration; 3rd, irrigation; 4th, chemical treatment (or precipitation).

The above have all been found more or less applicable, but in no case have they been found profitable from a pecuniary point of view. On the contrary, in a great number of cases, very expensive.

Some hundreds of patents have been issued in England alone during the past few years for the treatment of sewage. If we take up a pamphlet on the latest idea, we find that it invariably takes pains to prove that the scheme immediately preceding it is both costly and unprofitable.

One result engineers have been able to arrive at, is, that it is utterly useless to look for a profit. All that they may hope to do is to dispose of the sewage expeditiously with a minimum of cost to the ratepayers.

We will, for instance, now deal with the question of disposal of the sewage of Toronto. Some suggest that it should be discharged directly into the lake; others advocate a sewage farm; some again suggest chemical treatment, disposing of the sludge to the agricultural community, and discharging the effluent into the lake. It seems to us that the opinion of the engineers who have been called upon to report on this important matter, is the most feasible and economical, viz., to discharge the sewage directly into the lake east of the city.

The advocates of the other systems point to England, and mention towns that are using their own particular idea, but it is to be doubted if there is a city anywhere situated as Toronto is that would not dispose of their sewage as recommended. Broad irrigation would entail the pumping of nearly all the sewage,

and for a population of 200,000, at least 3,000 acres would be immediately required and a large additional outlay for the preparation of the land, besides a very heavy annual charge for pumping and maintenance. Filtration through lands without farming, would require for the same population an area of at least 1,000 acres, with a large annual cost.

It is a question whether even this acreage could be obtained at such a distance from the city as would bring the cost within even reasonable limits. Chemical treatment by means of lime, sulphate of iron, alumina, or whatever particular process is followed, means an annual cost of from 30 cents to 75 cents per unit of population per annum, besides an immediate expenditure for land, tanks, etc.

One great cause for the increase in the cost of either sewage farming or precipitation in American cities over European, is the great increase in the consumption of water, the average in England being about 35 gallons against 90 on this continent. This it will at once be seen enormously increases the difficulties to be overcome.

There is not the slightest doubt but that a great number of our inland towns will be compelled at no distant date to treat their sewage in some such manner. The Ontario Government and the city of Toronto deserve the thanks of these municipalities for the experiments they are at present making, looking towards a solution of this vexed question.

The Ontario Government have established a sewage farm at the London Asylum; the "Porous Carbon" system has been introduced at Guelph, and we understand the "Condor" system is to be tried at the Belleville Institute.

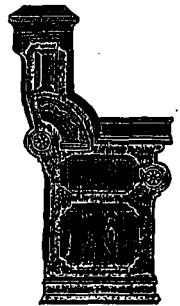
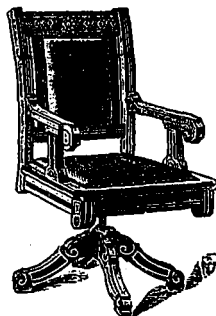
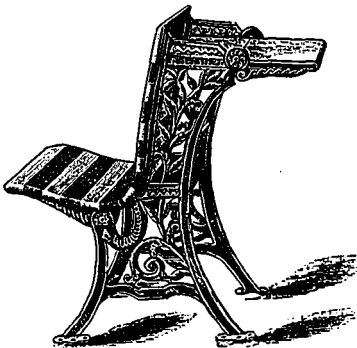
Toronto has experimented with the "Porous Carbon" process, from the promoters of which a report may soon be expected, and the "Condor" system is now being tried in the Yonge street sewer, for which purpose the sum of \$1,000 has been granted.

One great difficulty that has not yet been overcome by any of the vast number of schemes that have been before the public is, that the bacteria is not killed. It was hoped by a great many scientists and others that when the system of treating sewage by electricity was introduced, a means of overcoming this had been reached, but we see by the statement of Mr. Webster himself that this is not a certainty.

In conclusion, we think that a commission appointed by the Ontario Government, composed of engineers and medical men, to examine and report on the best means of treating crude sewage, would be of very great benefit to the country at large, and would amply repay its cost.

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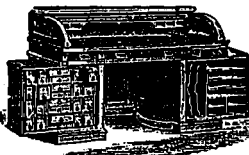
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CONTRACTS OPEN.

HALIFAX, N. S.—It is proposed to erect a church of England infirmary.
WAKTON, ONT.—Increased school accommodation will have to be provided.

HAMILTON, ONT.—A site has been purchased for a Roman Catholic hospital.

WALKERTON, ONT.—A site has been selected for new Government buildings.

RIVERSIDE, ONT.—The Presbyterian congregation will build a new church next spring.

ROTHSAY, ONT.—The Presbyterian congregation has decided to build a new brick church in the spring.

LONDON, ONT.—The local curlers have decided to erect a commodious skating and curling rink to cost \$5,000.

KINGARDINE, ONT.—An appropriation will be asked for at the next session of Parliament for a new public building here.

ST. HYACINTHE, QUE.—Tenders are asked until the 31st inst., for the erection of a post office at this place. Address, J. O. Dion, St. Hyacinthe, or Department Public Works, Ottawa.

WEST TORONTO JUNCTION.—The subway by-law has been carried by a large majority.—Plans have been prepared for two new fire halls. They are to be built of brick and stone, three stories, with towers.

KINGSTON, ONT.—The professors of the Women's Medical College will be asked to lecture free, in order that the entire revenue of the College may be devoted to the erection of a new building.

SHAWVILLE, ONT.—A \$3,000 town hall is to be built here.—The Orange-men have also decided to erect a large hall next summer.

QUEBEC, P. Q.—Parliament will be asked next session to incorporate a company to build a railway tunnel under the St. Lawrence at Quebec.

TORONTO, ONT.—The homoeopathic dispensary on Richmond St. west, is to be enlarged and converted into a hospital.—Wycliffe College buildings have been purchased for hospital purposes. Plans are being prepared for alterations and additions necessary to fit them for the uses to which they are hereafter to be put.—The Hughes building, corner of Yonge and Melinda streets, is to have an additional story and alterations necessary to fit it for the accommodation of the Globe newspaper.—It is proposed to erect a bridge to connect the high land at the northerly limit of Crawford St. with New College St. It has not been decided whether it shall be constructed of iron or wood.

MONTREAL, QUE.—Hon. Mr. Rodier is about to build a block on Notre Dame street, when the widening has been carried out, at a cost of \$200,000.—A company of Boston capitalists will erect a large foundry at the corner of Fathom and St. Catherine streets.—The Maisonneuve council will borrow \$15,000 for improvements to the streets and sewers.—The Roads Committee of the City Council propose to expend the sum of \$631,396.62 on street paving during the present year. Authority to raise this amount by loan will be sought from the Legislature.—The churchwardens of the Church of the Nativity, Hochelaga, have voted \$50,000 to finish the work on the church.—Arrangements for the construction of the National Hall of the St. Jean Baptiste society are progressing, and work will be begun as soon as the ground is bare.

Competition Plans

FOR A

CITY HALL.

The City of Quebec having decided on erecting a City Hall on Jesuit Baracks Square, opposite the

basilica, now invites competition designs for such a building. A prize of \$1500 will be paid for the best plan, \$1000 for the second best, and \$500 for the third in value.

The City reserves the right of proprietorship on any of the other plans submitted on payment to the author thereof of a sum of \$500.

The City does not bind itself to the execution of any of the designs submitted, nor does it bind itself to decide the direction of the work to the architect to whom the first prize may be awarded.

The plans to be for a building capable of accommodating all the municipal departments, not only as they now exist, but with the development hereafter required by the increase in the size of the City. The building must in addition contain the Recorder's Court and offices, the offices of the Police and Fire Departments, those of the Fire Alarm Telegraph, a Central Police

Station and Central Fire Station, with lodgings for guardians and others; the conveniences to supply ground plans, sections and elevations or facades, and the details of the principal apartments, such as the Council Chamber and Recorder's Court. They shall moreover supply specifications, bills of quantities and estimates of cost of the several works and materials. The total cost of the building, inclusive of heating apparatus, water and gas service, shall not exceed \$250,000.

The plans and specifications proposed "Plans for City Hall," shall be addressed to the undersigned before the FIRST DAY OF MAY NEXT. Each design shall bear a distinctive motto and contain nothing capable of designating the author, but shall be accompanied by a sealed letter bearing the same motto giving his name and address.

The judges of the plans shall be chosen by the Mayor, the Chairman of the Road Committee, and the City Engineer, and their decision shall be without appeal.

From the undersigned may be obtained all necessary information as to the configuration of the ground, the number and size of the principal apartments, and the area required by each department.

CHAS. BAILLAIRGE, City Engineer, Quebec.

City Hall, Jan. 10, 1890.

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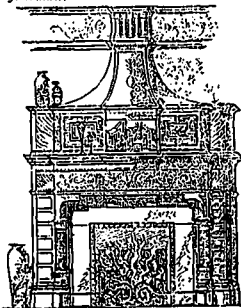
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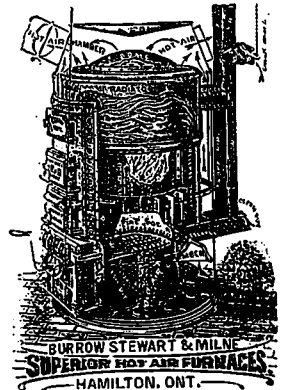


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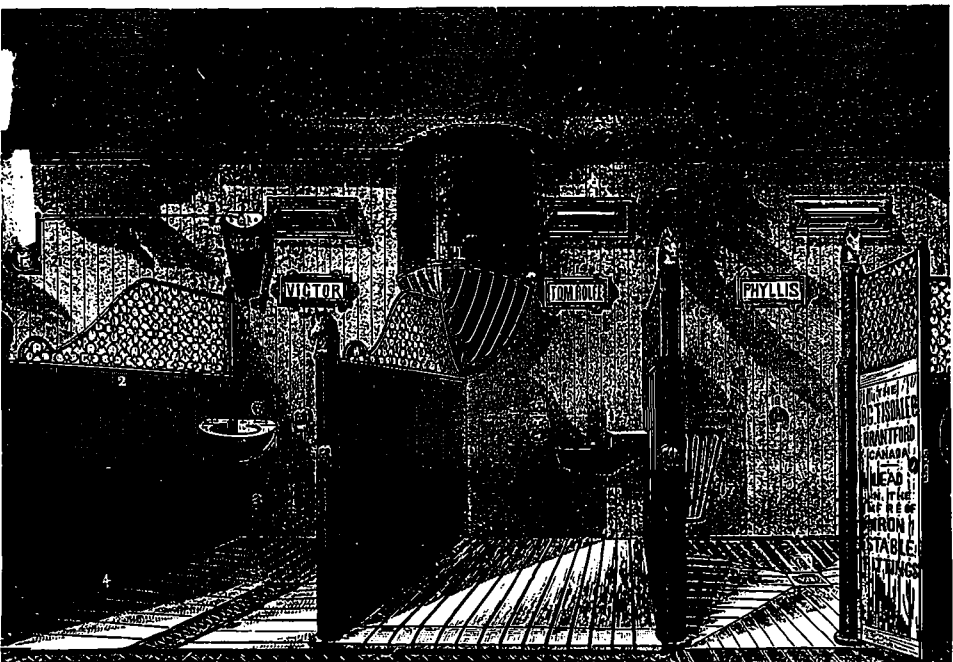
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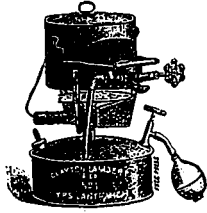
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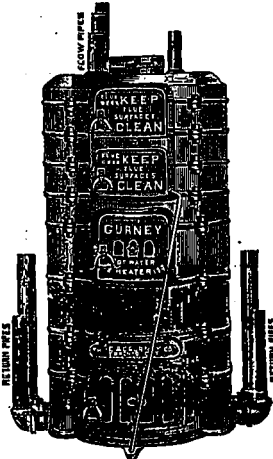
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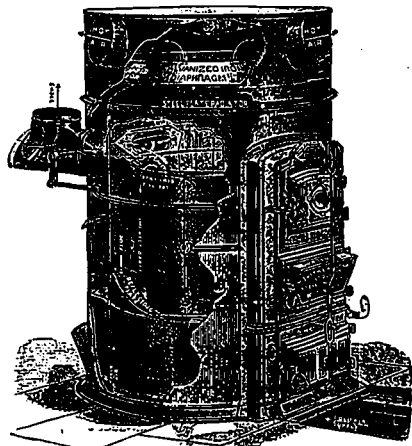
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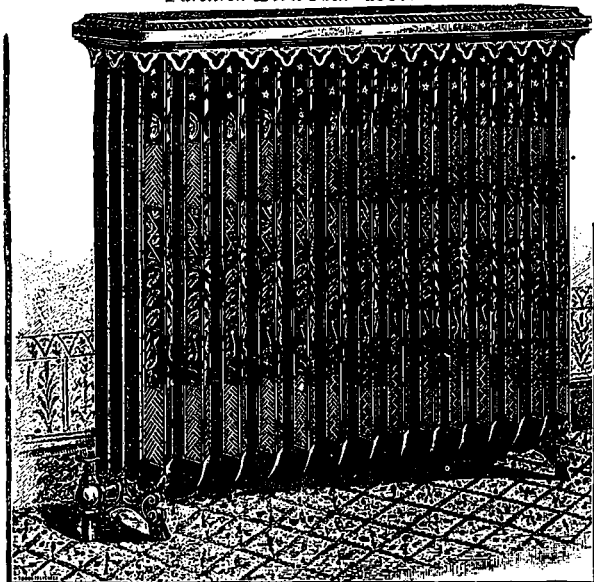
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