

contract; D. M. Rowe & Co., 30 Atkins avenue, have been awarded the sheet metal and roofing contracts; Canada Ornamental Iron Co., 88 River street, have been awarded the ornamental iron contract; J. Phinmore, rear 367 Dupont street, has been awarded the painting and glazing contracts; Fred Armstrong Co., Limited, 273 Queen street west, have been awarded the plumbing, electric wiring, heating and ventilation contracts; Johnson Temperature Regulating Company, 118 Adelaide street west, have been awarded the heat regulator system contract; Canada Glass, Mantel and Tile Company, 45 Richmond street, have been awarded the terrazzo floors contract.

### THE MODERN INDUSTRIAL BUILDING.

By Edward H. Putnam.

The general improvement in American architecture is easily apparent in the construction of the modern industrial building. Careful study of proportion and decorative treatment is the rule rather than the exception, and the bleak, barren waste of the cheapest material obtainable belongs to the past. The factory building of to-day, while strictly utilitarian, is built on the principle that economy is not of necessity limited to a saving in initial cost. The aesthetic appeal is considered, and even in instances of Spartan simplicity the crude and unsightly are carefully avoided.

There is some excuse for the old-time ramshackle structures; building materials were not on a par with those in vogue to-day and selection was limited. Steel construction was in its infancy, reinforced concrete was unknown and architectural terra cotta had not reached its present development as a practical as well as an ornamental structural material. Hollow tile and stucco were not even dreams. Even brick had not its present flexible versatility.

That the spirit was willing is attested by the occasional presence of a microscopic garden or ivy covered office tucked away in the middle of a waste of coal trestles, boiler houses and long, low, dingy buildings covered with soot and dust. The attractive approach, while not totally lacking, was unusual.

Undoubtedly steel construction has had a great deal to do with the changed conditions. Large, heavy piers that shut out sunlight and air have no part in recent construction, and the factory building is frequently a mere skeleton enclosed in steel sashed windows.

The modern policy of publicity is largely accountable for the improvement. Situated by railroads, as most factories naturally are, there is an excellent chance of prepossessing the thousands that pass daily in favor of an article that is manufactured in a clean, well-lighted, sunny building. Clothes do not make the man, but we are certainly more favorably impressed by a clean shirt than by a dirty one with frayed cuffs, and the same principle applies to buildings.

There are other reasons more practical, perhaps, but equally intangible; reasons that have to do with the hackneyed and over-used words, "psychology" and "efficiency." There can be no doubt that a clean, attractive, well-lighted and ventilated building keeps the workman more alert mentally, more satisfied, and less inclined to listen to the malcontent and the agitator. He is healthier, happier, and his efficiency increases automatically.

The large number of food product buildings condemned as unsanitary some years ago has forced a marked improvement in buildings of this character. The best-known firms have made cleanliness a visible asset. An interesting example, and one in which many materials are used in a supplementary way, is the Sheffield Farms dairy. The three-story elevation of the main building is a reinforced concrete frame covered with a veneer of lustrous glazed white architectural terra cotta, a combination which is practically indestructible. The terra cotta protects the concrete from fire and weather, offers little foothold for soot or dirt, and is very easily cleaned down with soap and water. In this instance advantage is also taken of the decorative possibilities of architectural terra cotta; the name panels are raised in white against backgrounds of green, the keystones of the window arches show a conventional milk bottle in white against green, and the large cartouches under the cornice are in the shape of a cow's head executed in the natural colors of the Jersey cow. Surely an appropriate form of decoration! Instead of the usual pressed metal the panels between the window courses are of light green glazed terra cotta. The superstructure is of common brick covered with thin cement stucco artificially jointed to reproduce the effect of the lower stories. The walls of the large bottling room, four stories high, are also of lustrous glazed white terra cotta, and, if necessary, can be cleaned down with a hose. Bottling is done by the gravity system. The milk is hoisted to the top and comes out in sealed bottles at the delivery level.

One of the most usual forms of the industrial building is the unadorned frame of reinforced concrete. Properly constructed, its durability and efficiency are beyond question, and its strong, simple lines and uniform gray color give an impression of solid worth and not infrequently an impression of what might be called rugged dignity or grim beauty. As a matter of fact the impression of mass is misleading, for the piers are usually very slender to permit maximum window space, and a multitude of large windows more than anything else is the unfailing sign of a thoroughly up-to-the-minute factory. One very real advantage of reinforced concrete is that it is a rapid form of construction.

Brick always has and always will hold its own as one of the most popular building materials for industrial buildings, and brick to-day is a far more adaptable material than it ever was before. A monotonous even red used to be the one aim, and off-color brick were sold as "seconds." Almost a complete about-face in this particular is an indication of the improved public taste. Brick of uneven shade have become so popular that manufacturers are specializing along this line. Pattern work in brick-laying has come into vogue, and instead of the smooth-faced brick of other years many rugged textures have been introduced and have met with immediate favor. A brick factory to-day may express the highest type of architecture and at the same time be practical and thoroughly economical.

Just as the war has affected every other line of endeavor this year, it has had a peculiar effect upon the erection of factories. The most apparent effect is one of stimulation; many factories of many kinds are cropping up all over the country, as a direct result of the war, but dependent upon the continuance of the war to dispose of them are little more than temporary, and erected as an investment with the greatest haste and in the cheapest possible way in order that the returns upon the investment may be immediate and generous. This necessity and the probability of

closing down at the end of the war have caused a mushroom growth of flimsy shacks with one seemingly durable feature, the high fence that surrounds them.

On the other hand, the money that these makeshift factories have brought in has undoubtedly enabled many firms to erect modern plants for the production of materials that are staple in normal times.

And there is another direct result of the war. We are beginning to manufacture a number of products that formerly were imported, and the great majority of these adopted industries will become permanent naturalized residents. Each one must be housed, and there is little doubt that our present knowledge of what constitutes good industrial construction will be applied with excellent results.—"American Architect."

## CONTRACTORS and SUB-CONTRACTORS

As Supplied by The Architects of Buildings  
Featured in This Issue

Building, Canadian Kodak Co., Ltd., Factory, Kodak Heights, Toronto, Ont.

Contractors, Deakin Construction Co., Ltd., Montreal, Que.  
Brick, Medina Shale Brick Co., Streetsville, Ont.; Don Valley Brick Works, Toronto, Ont.

Boilers, Babcock & Wilcox, Toronto.

Boiler Feed, Pump, Blake Knowles, Toronto.

Cabinet and Woodwork, H. W. Switzer, Toronto.

Cement, Canada Cement Co., Ltd., Toronto.

Concrete Work, Deakin Construction Co., Ltd., Montreal, Que.

Cranes, Northern Crane Works, Ltd., Walkerville.

Chimneys, Custodis Co., Toronto.

Concrete Piles, McArthur Concrete Pile Co., New York.

Conveyors, Lamson Co., Toronto.

Air Washers, Canadian Buffalo Forge Co., Ltd., Kitchener.

Coal Scale, Richardson Scale Co., Bridgeburg.

Elevators, Otis-Fenson Co., Ltd., Toronto.

Fire Alarm System, Purdy Mansell Co., Ltd., Toronto.

Fire Doors, H. B. Ormsby & Co., Ltd., Toronto.

Fire Hose, Dunlop Rubber Co., Ltd.

Fire Pump, A. R. Williams Machinery Co., Ltd., Toronto.

Floor Covering, H. H. Symmes & Brother, Montreal, Que.

Fittings and Valves, Jenkins Bros., Ltd.

Gaskets, Howe & Bassett, Rochester, N.Y.

Glass, Pilkington Bros. Glass Co., Ltd., Toronto, Ont.

Hardware, Yale & Towne Co., St. Catharines.

Hollow Tile, National Hollow Tile Co., Toronto.

Insulation, Armstrong Cork and Insulation Co., Toronto.

Inter-Phone System, Stromberg-Carlson Electric Co., Toronto.

Ice Machinery, Canadian Ice Machinery Co., Ltd., Toronto.

Kitchen Utensils and Equipment, Wrought Iron Range Co., Ltd., Toronto.

Metal Cornice, Douglas Bros., Ltd., Toronto.

Marble, Canada Glass Mantles and Tile Co., Ltd., Toronto.

Plumbing, Purdy, Mansell & Co., Ltd., Toronto.

Plaster Work, Deakin Construction Co., Ltd., Montreal, Que.

Preservative Wood, Dominion Paving and Contracting Co., Toronto.

Paints, Interior, Sherwin-Williams & Co., Ltd., Toronto; Exterior, Trussed Concrete Co., Stone-Tex., Toronto; Cold Water, A. Ramsay & Son, Montreal, Que.

Packing, Garlock Packing Co., Toronto.

Power Machinery, Prime Movers, John Inglis Co., Ltd., Toronto.

Motors, Canadian Westinghouse Co., Ltd., Toronto; Pumps, Fairbanks Morse Canadian Co., Ltd., Toronto.

Refrigeration Machinery, Canadian Ice Machinery Co., Ltd., Toronto.

Refrigerator Doors, John Hillock & Co., Ltd., Toronto.

Radiators, Taylor-Forbes, Ltd., Toronto.

Refrigeration Equipment, Canadian Ice Machinery Co., Ltd., Toronto.

Reinforcements, Steel Co. of Canada, Ltd., Hamilton, Ont.

Roofing, Tar and Gravel, Douglas Bros., Ltd., Toronto.

Steel Reinforcing, Steel Co. of Canada, Ltd., Hamilton.

Steel Testing, R. W. Hunt & Co., Ltd., Montreal, Que.

Structural Iron and Steel, Standard Steel Construction Co., Ltd., Welland.

Smoke Flue and Breech, Toronto Iron Works, Ltd., Toronto.

Sprinkler Equipment, Purdy, Mansell & Co., Ltd., Toronto.

Tanks, Polson Iron Works, Ltd., Toronto.

Testing, Canadian Inspection and Testing Laboratories Co., Ltd., Toronto.

Wood Treating, Dominion Paving and Contracting Co., Toronto.

Water Heater, Sims Water Heater Co., Toronto.

Water Softener, Kennicott Water Softener Co., New York.

Landscape Architects, Harries & Hall, Bay street, Toronto.

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Building, Christie, Brown & Co., Ltd., Factory and Office Building, Toronto, Ont.

Architects, Sproutt & Rolph, Toronto, Ont.

Engineers, Jennings & Ross, Toronto.

Brick, Plain, John Price, Toronto; Fancy, Don Valley Brick Works, Ltd., Toronto; Enameled, Scott, Hammond & Pratt, Toronto.

Casements and Window Construction, Henry Hope & Sons, Ltd., Toronto.

Concrete Work, Jennings & Ross, Toronto.

Electric Fixtures, E. F. W. Salisbury, Toronto.

Electric Wiring and Apparatus, E. F. W. Salisbury, Toronto.

Expanded Metal, Clarence W. Noble, Toronto.

Fire Alarm System, E. F. W. Salisbury, Toronto.

Fire Doors, A. B. Ormsby & Co., Ltd., Toronto.

Fire Escapes, McGregor & McIntyre, Ltd., Toronto.

Glass, Consolidated Plate Glass Co., Ltd., Toronto.

Ornamental Iron, McGregor & McIntyre, Ltd., Toronto.

Plaster Work, Jennings & Ross, Toronto.

Roofing, H. Williams & Co., Toronto.

Screens, Higgins Mfg. Co., Toronto.

Sprinkler Equipment, W. J. McGuire, Ltd., Toronto.

Stone, Geo. Oakley & Sons.

Structural Iron and Steel, McGregor & McIntyre, Ltd., Toronto.

The, National Fireproofing Co., Toronto.

Vaults, J. & J. Taylor, Ltd., Toronto.

Water Tank, Des Moines Bridge and Iron Co., Pittsburg, Pa.

Weather Strip, Higgin Mfg. Co., Toronto.

Contractors (general), Jennings & Ross, Toronto.