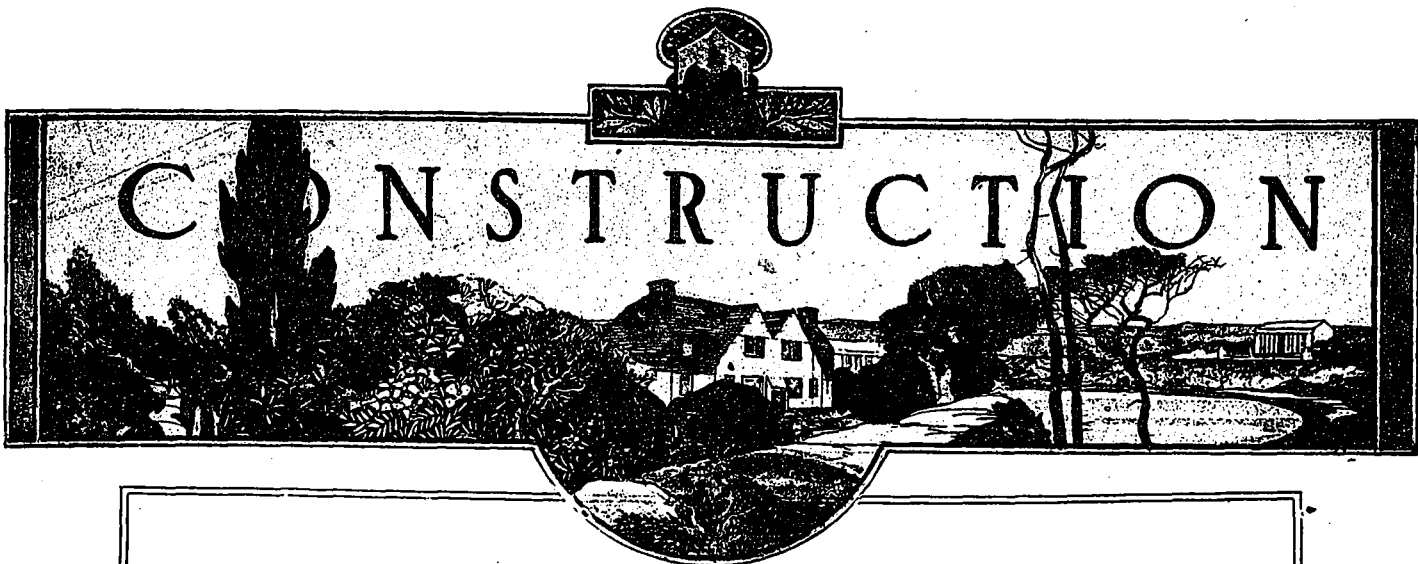


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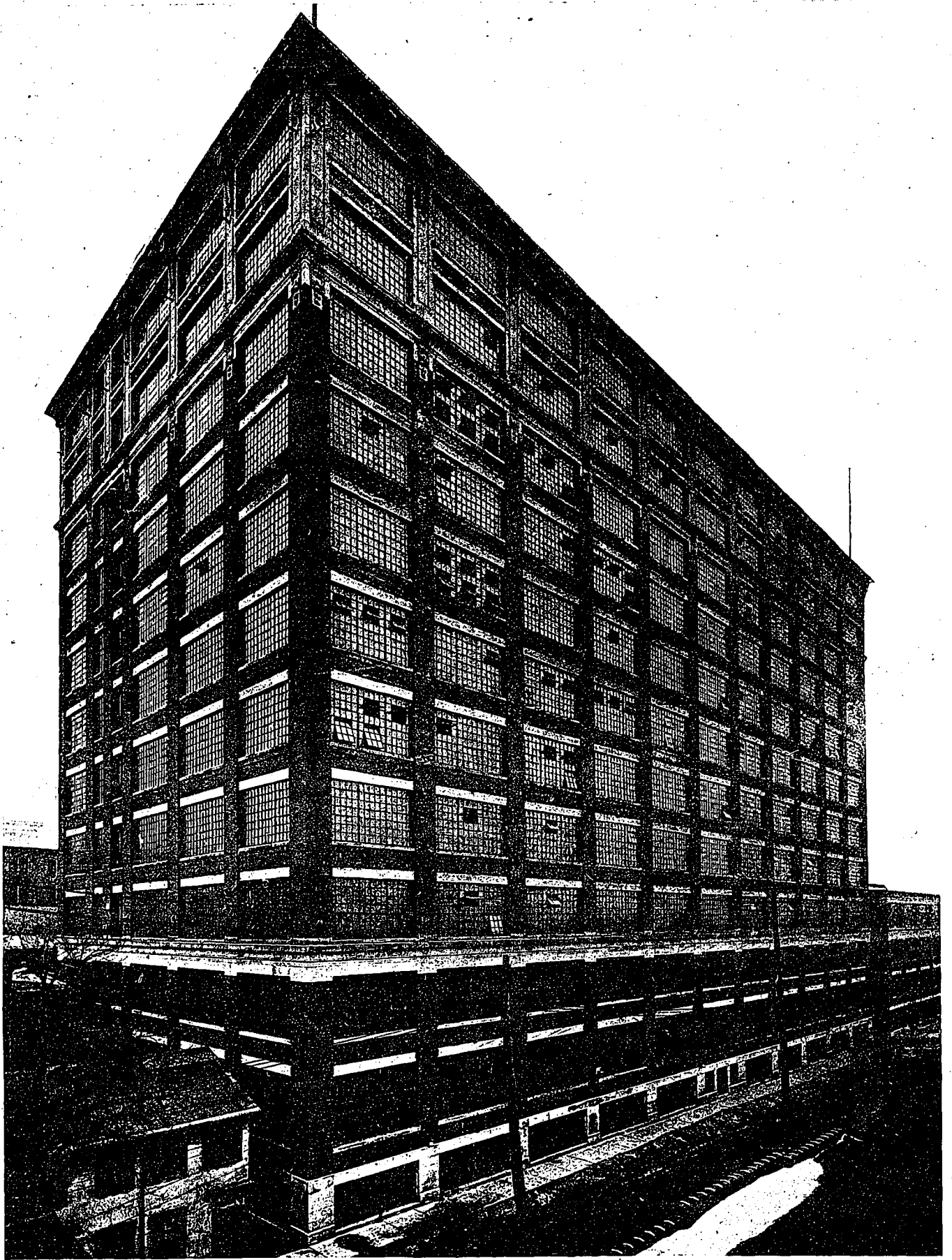
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BRANCH OFFICES

NEW YORK



THE T. EATON COMPANY'S NEW FACTORY, TORONTO.

WM. STEELE & SONS COMPANY, ARCHITECTS



HONOR ROLL



ONTARIO

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| Anderson, C. P.** | Toronto | | Sproatt & Rolph |
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| Beattie, J. Lindsay ** | Toronto | Pte. | Hynes-Feldman-Watson |
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| ‡Beckett, S.* | Kingston | | E. R. Beckwith |
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| George, Allan | Toronto | | |
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| Marani, F. H.** | Toronto | Captain | Sproatt & Rolph |
| McConnell, A. Wellesley | Toronto | Major, 116th Bn. | Toronto University |

‡Killed. §Died of Wounds. †Wounded. ¶Prisoner of War.

ONTARIO—Continued

| NAME | CITY | RANK AND UNIT | FIRM |
|-----------------------|-------------|-------------------------|----------------------|
| ‡McDougal, E. A.** | Toronto | Major, 9th Battery | Sproatt & Rolph |
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| Meredith, C. P. | Ottawa | Lt.-Col. | Colborne P. Meredith |
| Molesworth, G. N. | Toronto | Major, 124th Bn. | Geo. N. Molesworth |
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| †Sutherland, G. M.** | Toronto | Sgt., 48th Highlanders | Sproatt & Rolph |
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| Watson, S. H. P.** | Toronto | | Wm. R. Gregg |
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| ¶Watt, Robert J. | London. | 13th Bn. | Watt & Blackwell |
| West, Gordon M. | Toronto | Captain, 124th Bn. | |
| Wilkes, J. H.** | Toronto | Lieut., C.M.R. | Sproatt & Rolph |
| Zeigler, Karl** | London. | Lieut., 18th Bn. | Watt & Blackwell |

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BRITISH COLUMBIA

| | | | |
|-----------------|-----------|--------------------|-------------------------|
| Beetson, J. D. | Vancouver | 6th D.C.O.R. | Jones & Beetson |
| Bird, A. J.* | Vancouver | C.A.S.C. | A. J. Bird |
| Blackadder, H. | Vancouver | Engineers | Blackadder & MacKay |
| Birds, S. B.* | Vancouver | 72nd Bn. | S. B. Birds |
| Berill, R.** | Victoria | | Percy Fox |
| ‡Bowie, G. P.* | Vancouver | B.C. Horse | G. P. Bowie |
| Cross, Franklin | Vancouver | | Franklin Cross |
| Dalton, A. T.* | Vancouver | 68th Batt., C.F.A. | Dalton & Eveleigh |
| Culhurn, H.** | Vancouver | | J. Bowman |
| Davie, H. S.* | Vancouver | B.C. Horse | Doctor, Stewart & Davie |
| Day, J. C.* | Vancouver | B.C. Horse | Parr, Mackenzie & Day |
| Downing, M.* | Vancouver | Motor Boat Patrol | G. P. Bowie |
| ‡Fox, C. C.* | Vancouver | East Surrey Regt. | MacClure & Fox |

‡Killed. §Died of Wounds. †Wounded. ¶Prisoner of War.

BRITISH COLUMBIA—Continued

| NAME | CITY | RANK AND UNIT | FIRM |
|---------------------|-----------|----------------------|-------------------------|
| Fraser, Kenneth | Vancouver | Engineers | Kenneth Fraser |
| §Fripp, Geo. M.* | Vancouver | B.C. Horse | R. Mackay Fripp |
| Gardiner, Wm. F. | Vancouver | 6th D.C.O.R. | Wm. F. Gardiner |
| Helyer, M. | Vancouver | 62nd Bn. | Helyer & Archer |
| Hope, A. C. | Vancouver | Western Irish | A. Campbell Hope |
| †Jamieson, Douglas* | Vancouver | 62nd Bn. | Barker & Jamieson |
| Kayll, S. A.* | Vancouver | 68th Battery, C.F.A. | R. Mackay Fripp |
| Mawson, J. W. | Vancouver | 68th Battery, C.F.A. | T. H. Mawson & Son |
| Perry, R. T. | Vancouver | C.A.S.C. | Perry & Fowler |
| Sharp, G. L. T. | Vancouver | 62nd Bn. | Sharp & Thompson |
| Stewart, W. F. T. | Vancouver | Forestry Battalion | Doctor, Stewart & Davie |

*Member of Architectural Institute of British Columbia. **Draughtsman.

SASKATCHEWAN

| | | | |
|------------------------|----------------|--|-------------------------|
| Albrechtson, H. C. A.* | Prince Albert. | Lt.-Col., 223rd Bn. (Scandinavians) | |
| Albrechtson, Oluf | Prince Albert. | | Oluf Albrechtson |
| Archibald, L. | Regina | | Reilly, Dawson & Reilly |
| Bissett, Fenton* | Regina | Capt., Brit. Territorials | Reilly, Dawson & Reilly |
| Buchanan, A.* | Regina | Lt., Engineers | [Colthurst |
| Colthurst, G. B.* | Saskatoon. | Munitions | Thompson, Daniel & |
| Crockhart, J.* | Saskatoon. | Munitions | Thompson & Crockhart |
| Clemesha, F. C.* | Regina. | Capt., 46 Batt, 11 Bde. | Clemesha & Portnall |
| Greenwell, A.** | Regina. | | Storey & Van Egmond |
| Illingworth, A. J. A.* | Regina. | Capt., 46th Batt. | |
| Johnston, E.** | Prince Albert. | | Oluf Albrechtson |
| Knight, F. W.* | Regina. | Q.M.S., 68th Bn. | |
| Morrison, J. M.* | Prince Albert. | Sergt., 243rd Bn. | J. M. Morrison |
| McLean, J. A.* | Saskatoon. | | J. A. McLean |
| O'Leary, F. J.* | Saskatoon. | Staff-Capt., 11th Bde. | O'Leary & Delay |
| Owen-Lloyd, H. E.* | Moose Jaw. | | |
| Pickering, A.** | Regina. | | Reilly, Dawson & Reilly |
| Puntin, J. H.* | Regina. | Capt., Engineers | J. H. Puntin |
| Portnall, F. H.* | Regina. | Lt., 46th Bn. | Clemesha & Portnall |
| †Ponton, J. R.* | Moose Jaw. | Lt., 45th Bn. | J. R. Ponton |
| †Richardson, Alan* | Saskatoon. | Lt., Artillery | |
| Roy, Frank** | Saskatoon. | | R. M. Thompson |
| Stephenson, Geo. J.* | N. Battleford. | Lt., A.S.C. | Stephenson & Evans |
| Stewart, Hugh** | Moose Jaw | | R. C. Bunyard |
| Storey, S. E.* | Regina. | Mech. Tsp., A.S.C. | Storey & Van Egmond |
| Thompson, R. M.* | Saskatoon. | Lt., Engineers | R. M. Thompson |
| Smith, A. H.** | Regina. | | Storey & Van Egmond |
| Smith, Sholto* | Moose Jaw. | Lt., 28th Bn. | Sholto Smith |
| Turnbull, F. L.* | Saskatoon. | Lt., Engineers | Buganhagen & Turnbull |
| Webster, D.* | Saskatoon. | Lt., Engineers | D. Webster |
| Whiddington, W. A.* | Swift Current. | Artists' Rifles | |

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MANITOBA

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| Hawker, J. W. | Winnipeg | Major | James Chisholm & Son |

†Killed. §Died of Wounds. †Wounded. ††Prisoner of War.

MANITOBA—Continued

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| †Kirkpatrick, J. H.** | Winnipeg | | James Chisholm & Son |
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| Marshall, D.* | Winnipeg | | |
| Mitchell, J. B.* | Winnipeg | | |
| McLaughlin, W. H.** | Winnipeg | | James Chisholm & Son |
| MacMurray, W. A.** | Winnipeg | | James Chisholm & Son |
| Mounsey, C. H.* | Winnipeg | | |
| Northwood, Geo. W.* | Winnipeg | | Geo. W. Northwood |
| Powell, T. T.** | Winnipeg | | James Chisholm & Son |
| Ross, D. A.* | Winnipeg | | Pratt & Ross |
| Rugh, H. B.* | Winnipeg | | H. B. Rugh |
| Semmens, J. N.* | Winnipeg | | J. N. Semmens |
| Shillinglaw, W. H.* | Brandon | | W. H. Shillinglaw |
| West, J. P.* | Winnipeg | | |

*Member of Manitoba Association of Architects. **Draughtsman.

QUEBEC

| | | | |
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| ‡Buce, —** | Montreal | | Francis S. Swales |
| Bush, —** | Montreal | | Francis S. Swales |
| Campbell, K. M.** | Montreal | Lieut. | D. H. McFarlane |
| Carless, Wm.* | Montreal | Lieut. | Turner & Carless |
| Colville, D.** | Montreal | Lieut. | D. H. McFarlane |
| ‡Desqueyroux, E. A.** | Montreal | | Viau & Venne |
| Fetherstonhaugh, H. L.* | Montreal | Capt. | J. Cecil McDougall |
| Findley, F. R.* | Montreal | | |
| †Fyson, —** | Montreal | | Francis S. Swales |
| Gell, —** | Montreal | | Francis S. Swales |
| Harkness, —** | Montreal | | Francis S. Swales |
| Imray, —** | Montreal | | Francis S. Swales |
| McLeod, —** | Montreal | | Francis S. Swales |
| Nobbs, P. E.* | Montreal | | Nobbs & Hyde |
| Peck, Hugh* | Montreal | | |
| Prowse, —** | Montreal | | Francis S. Swales |
| ‡Romney, Wm. F.** | Montreal | | Viau & Venne |
| ‡Rutledge, —** | Montreal | | Francis S. Swales |
| Rotier, A. C.* | Montreal | | |
| †Richardson, A. I.* | Montreal | | |
| Shorey, H. E.* | Montreal | | H. E. Shorey |
| ‡Sowerby, D.** (a) | Montreal | | Francis S. Swales |
| Swales, S. F.** | Montreal | | Francis S. Swales |
| ‡Thompson, —** | Montreal | | Francis S. Swales |

(a) M.C., Croix de la Guerre.

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ALBERTA

| | | | |
|-----------------|----------|-------------------|------------------------|
| Adams, A. S.* | Edmonton | Lieut. | |
| Armour, J. G.** | Edmonton | Lieut., 202nd Bn. | Provincial Government. |
| Basevi, —** | Calgary | Lieut., 50th Bn. | Holman & Gotch |

‡Killed. §Died of Wounds. †Wounded. ¶Prisoner of War.

ALBERTA—Continued

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| ‡Beswick, Cecil E.* | Edmonton | Lieut. | |
| Boyd, David** | Edmonton | Royal Engineers | J. Henderson |
| ‡Buckton, A. Scott** | Edmonton | Captain | Provincial Government |
| Burgess, C. E.* | Edmonton | Captain, 196th Bn. | Alberta University |
| Calderon, A. M.* | Edmonton | Captain | |
| ‡Campbell, Thomas** | Edmonton | Princess Patricia's. | City Offices |
| Cauchon, J. E.* | Edmonton | Captain | J. E. Cauchon |
| †Collin, P. B.** | Calgary | Lieut., 31st Bn. | Holman & Gotch |
| Eccles, Erskine** | Calgary | Lieut., 31st Bn. | Holman & Gotch |
| Fry, C. H.** | Edmonton | | R. W. Lines |
| German, H. V.** | Medicine Hat | Sergt., M.R. | Mr. Williams |
| Gibbs, Lionel C.* | Edmonton | Q.M.S., 196th Bn. | Barnes & Gibbs |
| Gotch, L. M.* | Calgary | Capt., I.S. | |
| ‡Hall, Norman** | Edmonton | | |
| Healing, J. B. (Ass.) | Edmonton | 19th Alberta Dragoons | |
| Hardy, Philip** | Edmonton | Lieut., Tank S. | |
| Hunt, Oliver** | Edmonton | Lieut., Royal Lancs. | R. W. Lines |
| ‡Lines, Rowland W.* | Edmonton | Captain, R. E. | R. W. Lines |
| Langley, Robert** | Edmonton | Lieut. | |
| ‡Lawson, F., Jr.** | Calgary | Lieut., 8 th Bn. | Lawson & Fordyce |
| Lowe, Cecil** | Edmonton | | R. P. Barnes |
| McClinton, A. Norman** | Lethbridge | Lieut. | |
| †McNicol, David** | Edmonton | Lieut., 63rd Bn. | Provincial Government |
| Oliver, Frank** | Lethbridge | | |
| Phillips, A. T.** | Calgary | | Holman & Gotch |
| †Tricker, Bert.** | Edmonton | | J. Henderson |
| ‡Walker, H. N.** | Edmonton | Lieut., S. Staffords | Provincial Government |
| ‡Wigsell, Norman** | Edmonton | | R. W. Lines |

*Member of Alberta Association of Architects. **Draughtsman.

‡Killed. §Died of Wounds. †Wounded. ¶Prisoner of War.



T. Eaton Company's New Factory, Toronto

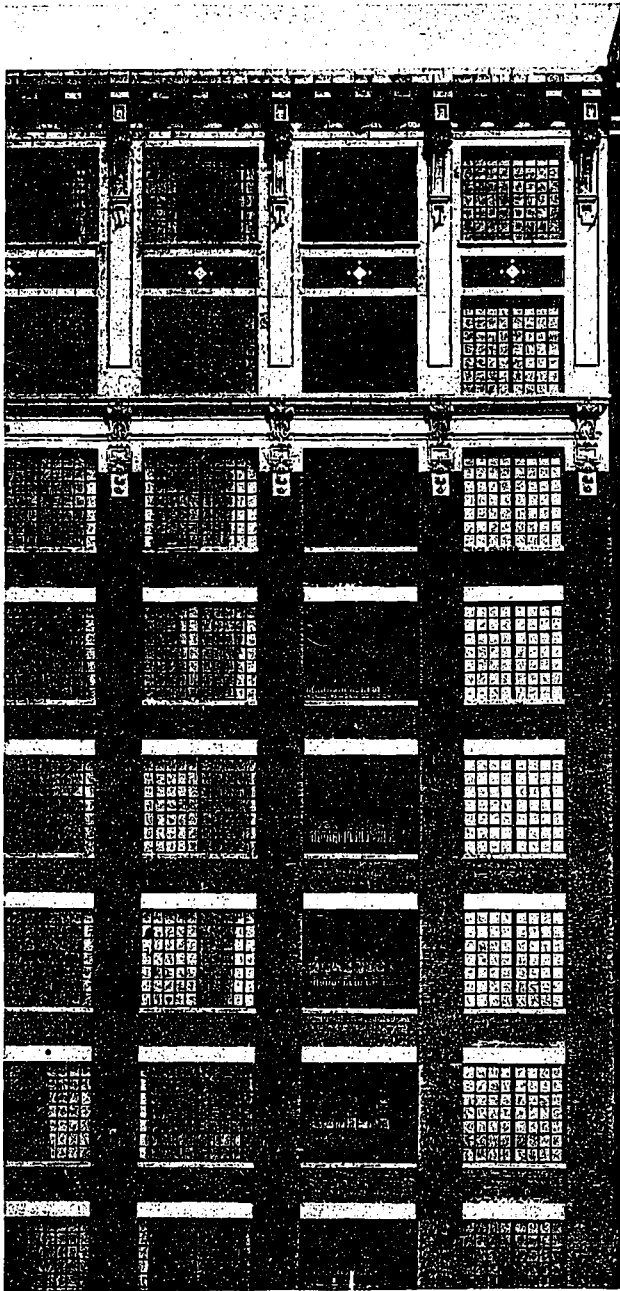
THE type of construction employed in the new factory recently completed for The T. Eaton Company differs in certain respects from the usual method of reinforced concrete design, in that the slab system throughout the entire lower eight floors is supported by steel cored columns instead of the more customary mono-

The photographic illustration and diagram on page 81 explains this system quite clearly. It shows an arrangement which obtains with the use of short bars, a four-way reinforcement for the main panel and a two-way reinforcement for the column head. Diagonal and rectangular bands placed in the lower part of the slab take up the main slab stresses, while a separate mat consisting of a cross bar frame is placed over the column head to reinforce the slab against the negative moment. The average panel measures 20 feet square, and the columns, which are circular in design, are provided with capitals and drop heads 5 inches deep and 8 feet square. The columns all have steel cores, with the exception of the upper four floors, which are of concrete. The steel cores consist of heavy 12-inch H members, reinforced with plates and built around with concrete to a diameter ranging from 22 to 28 inches. By using these steel cores a column of much smaller diameter than would otherwise be required is made possible.

The building itself is twelve storeys high, covering an L shaped site, with approximate frontages of 228 ft. and 166 ft., on Alice street and Downey lane respectively. The first floor level is 5 ft. below grade, and the height of the various floors is 14 ft., with the exception of the basement, which has a 13 ft. clearance, and the first two storeys, which have a height of 15 ft.

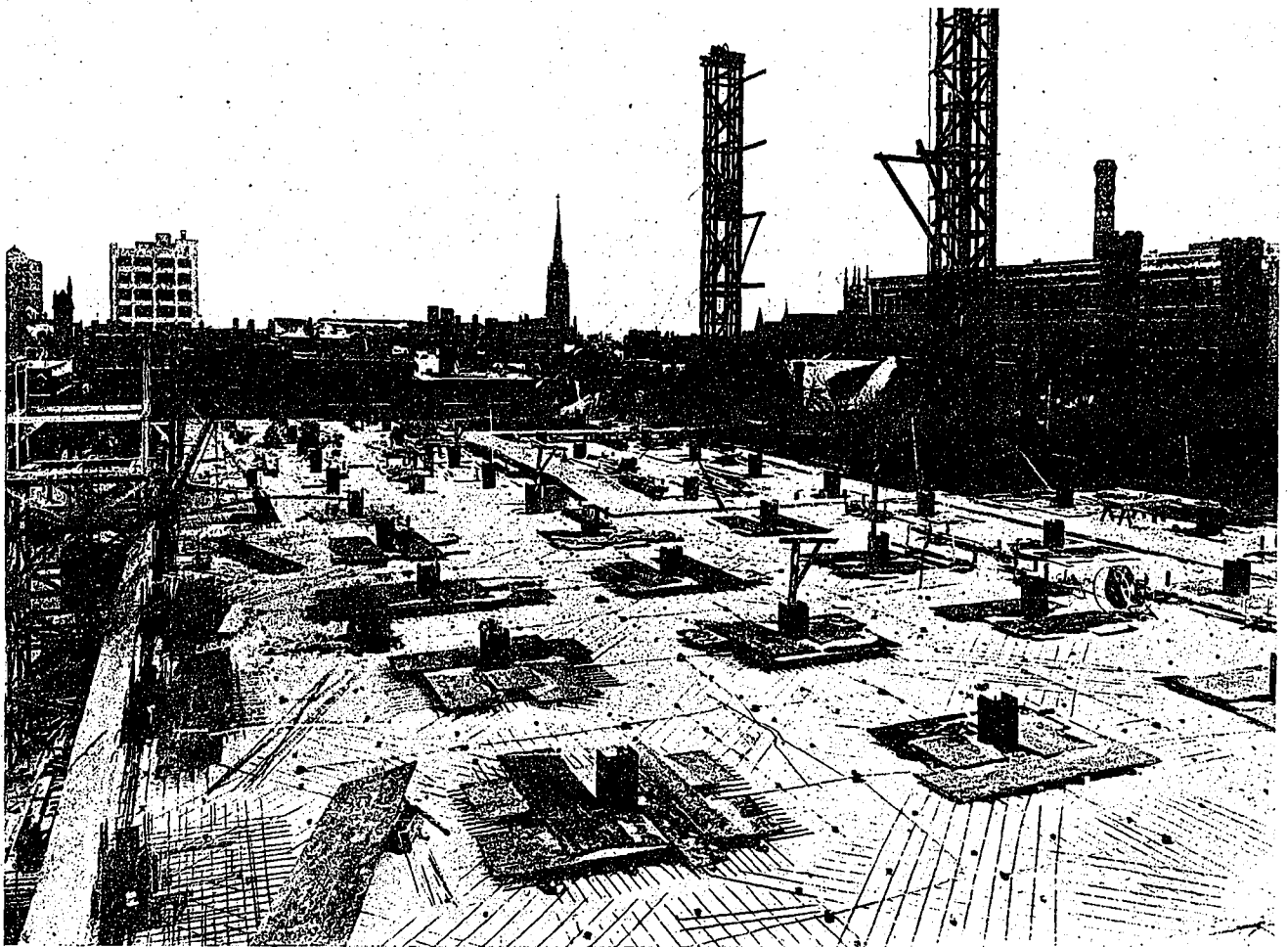
The floor slabs are quite heavy, varying in thickness according to their relative loading. Especially is this the case as regards the second floor, which is designed for a live load of 350 pounds per square foot, and which is 11½ inches in depth, with 1½-inch finish. The third floor slab is 9 inches thick, and is designed for 250 pounds per square foot, while the typical floors, 7½ inches in depth, are designed to carry 150 pounds per square foot.

All of the reinforcing steel consists of 1½-inch square twisted rods, arranged as previously stated, in rectangular and diagonal bands, and so placed as to extend from column to column without protruding beyond the limits of one panel. The position of the bars in the slabs, as graphically indicated in the accompanying diagram or schedule, which also shows the number and length of the rods used. Only short, straight bars are employed, and in no case are the rods bent. The rectangular bands for the interior panels comprise 13 bars, 13 ft. in length, spaced 9-inch centres. Each band lays on three ¾-inch rods, 10 ft. long, held by 1-inch chairs, and placed at right angles to the band rods, with one inch of concrete underneath.



OPENING OR AIR SPACE ADJOINING ENCLOSED STAIRCASE.

lithic type. It also differs somewhat in the type of floor slab adopted, in that the reinforcing consists of short straight bars so employed as to entirely eliminate the necessity of any bends. While this method has been employed to some extent in certain of the American cities, its introduction in Canada is comparatively recent.



VIEW SHOWING SLAB REINFORCEMENT AND STEEL CORES OF COLUMNS, THE T. EATON COMPANY'S NEW FACTORY, TORONTO.

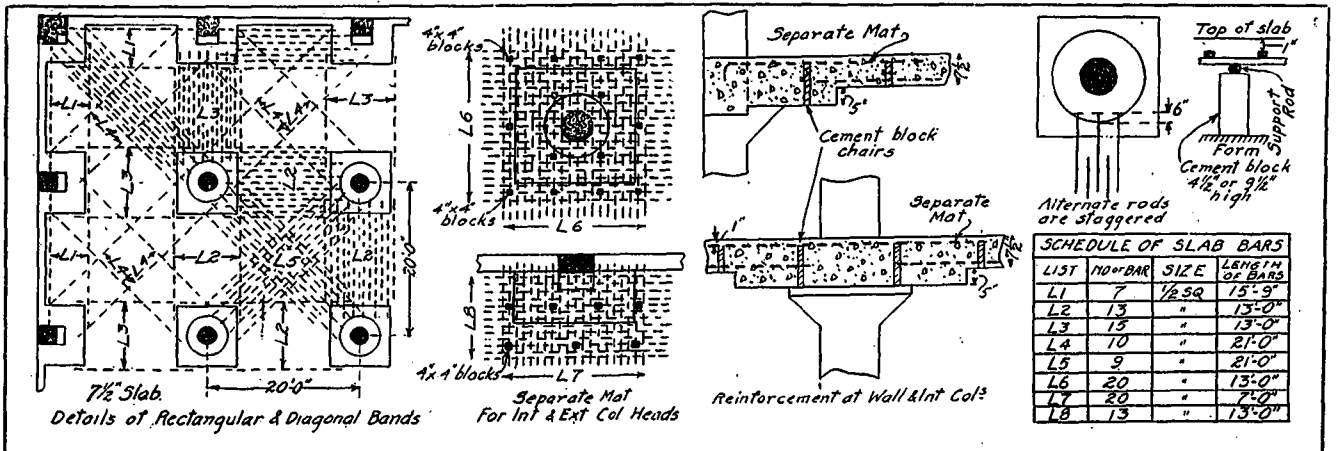
The diagonal rods are 21 ft. long, spaced 10-inch centres, and are likewise wired together and supported on chairs. Both the rectangular and diagonal members are staggered so that alternate bars extend 6 inches over the column head.

In the exterior panels, the rectangular bands have 15 rods with 8½-inch spacing, while the diagonal bands have 10 bars with 9-inch spacing. The straight wall bands of the exterior panels consists of 7 bars, 15 ft. 9 in. long, spaced 8½ inches apart.

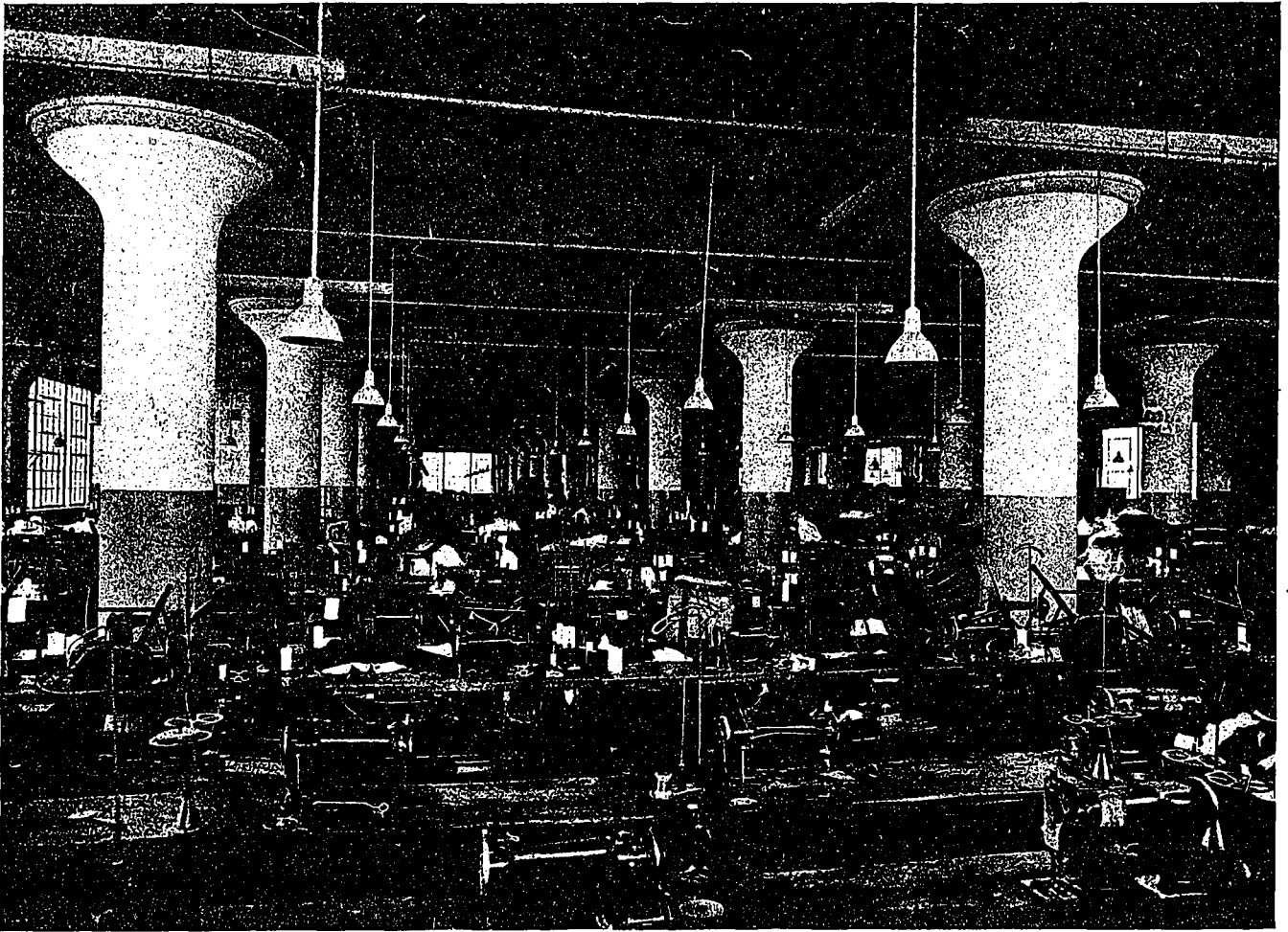
The three support rods carrying the rectangular bands act both as spacing and support bars

and to take the temperature and shrinkage stresses.

The rods comprising the mats which take up the moment at the column heads are placed in opposite directions. Twenty rods 13 ft. long are used each way. They are tied together at from 4 to 6-inch spacing, and have four ¾-inch round steel supporting rods 10 ft. in length, which rest on concrete blocks 4 x 4 in section. The concrete blocks are 4½-inch or 9½-inch deep, according to their position in the main slab, or in the drop head. Allowance is made for one inch of concrete over the mat, which fully protects the steel. This brings the mat 6½ inches above the bottom of the slab, and



DETAILS OF FLOOR SLAB REINFORCEMENT, THE T. EATON COMPANY'S NEW FACTORY, TORONTO.



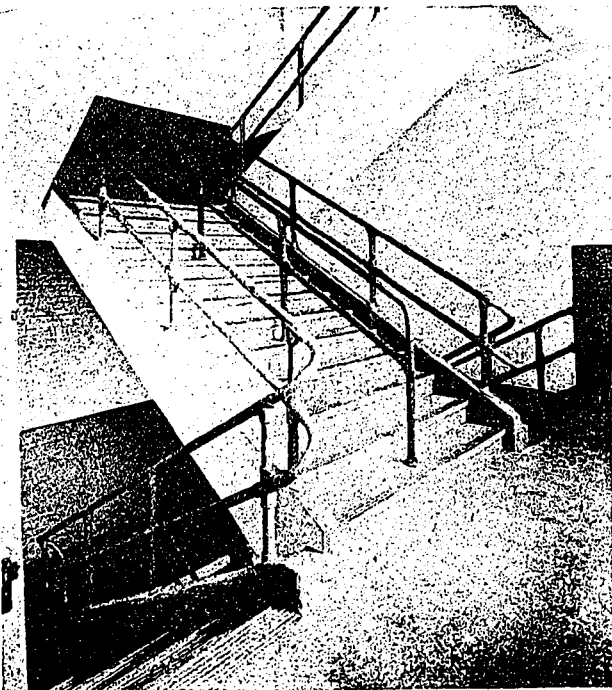
VIEW SHOWING TYPICAL FINISHED COLUMNS, THE T. EATON COMPANY'S NEW FACTORY, TORONTO.

leaves about 5 inches between the mat and bottom steel. As regards the exterior columns, which are square and provided with brackets and drop heads, a half mat is used. This consists of 13 longitudinal rods 13 ft. long, and 20

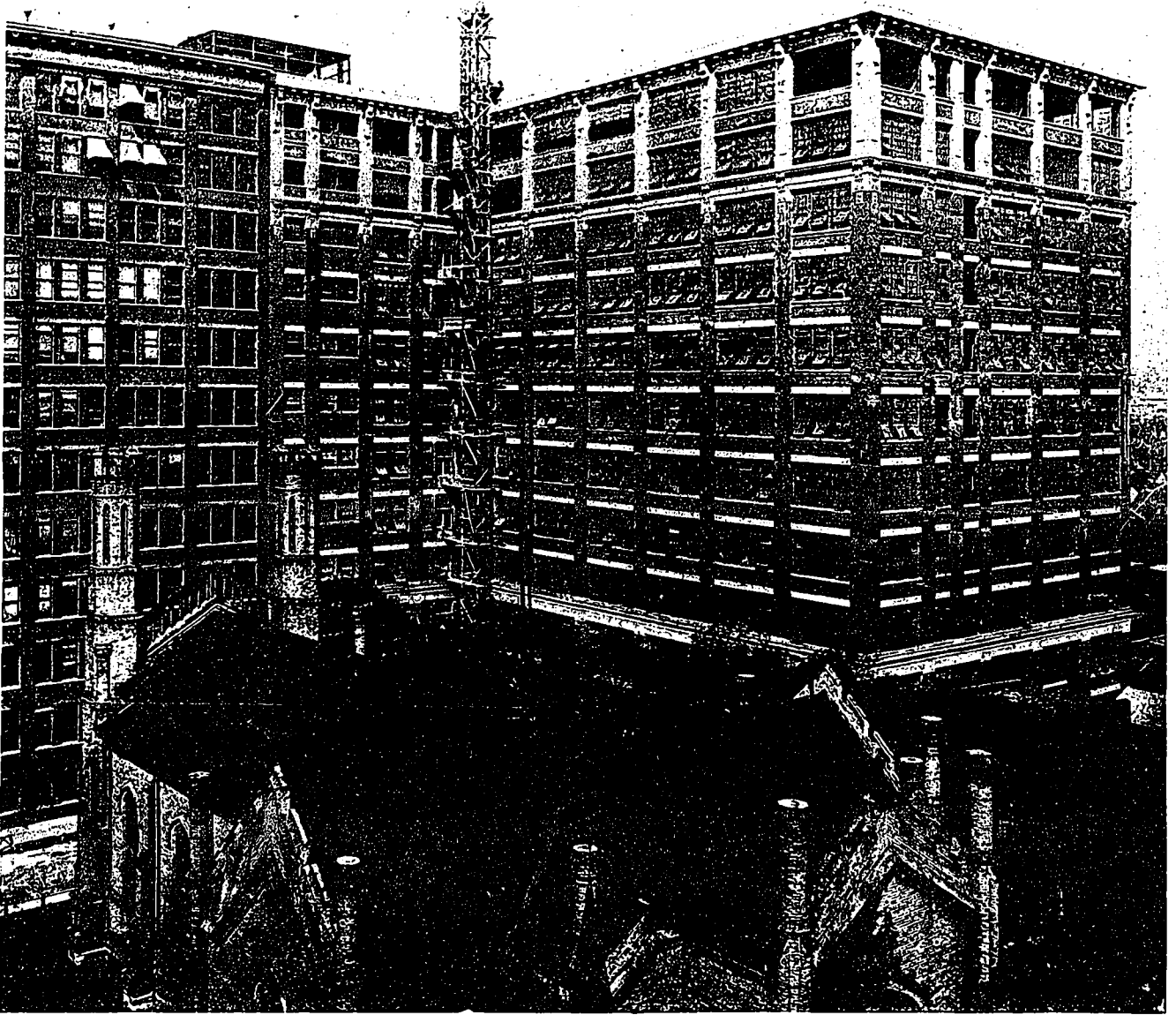
transverse bars 7 ft. long, having 3-inch right angle hooks to bond into the wall lintels. These rods are spaced at 6 inches, two support rods of $\frac{3}{4}$ -inch round steel 10 ft. long being used with cement block supports.

The building rests on one hundred and ten, 4 x 4 ft., concrete footings, 4 ft. deep, and spreading to 16 ft. at base. These footings are reinforced four ways with mats employing six 1-inch rods 14 ft. long in longitudinal and transverse directions in the two lower mats, and diagonally placed rods $1\frac{1}{4}$ -inch in the two upper mats, four rods 18 ft. long being used in one mat, and eight rods 15 ft. 3 in. long in the other. The weight of the columns in each case rests or bears on a grillage of I-beams, which distributes the load over the concrete footings.

While the type of construction adopted minimizes any risk from fire, an extra measure of safety is provided in the outside openings, or courts, on each floor leading to enclosed fire-proof stairs situated at both the east and west ends of the building. This feature of the plan is demanded as a necessary provision in factory construction by the building regulations by the city of Philadelphia, and is something which gives promise of being more widely adopted. Not only does it form an outside air space, separating the stair well from the main portion



ENCLOSED STAIRCASE, THE T. EATON COMPANY'S NEW FACTORY, TORONTO.

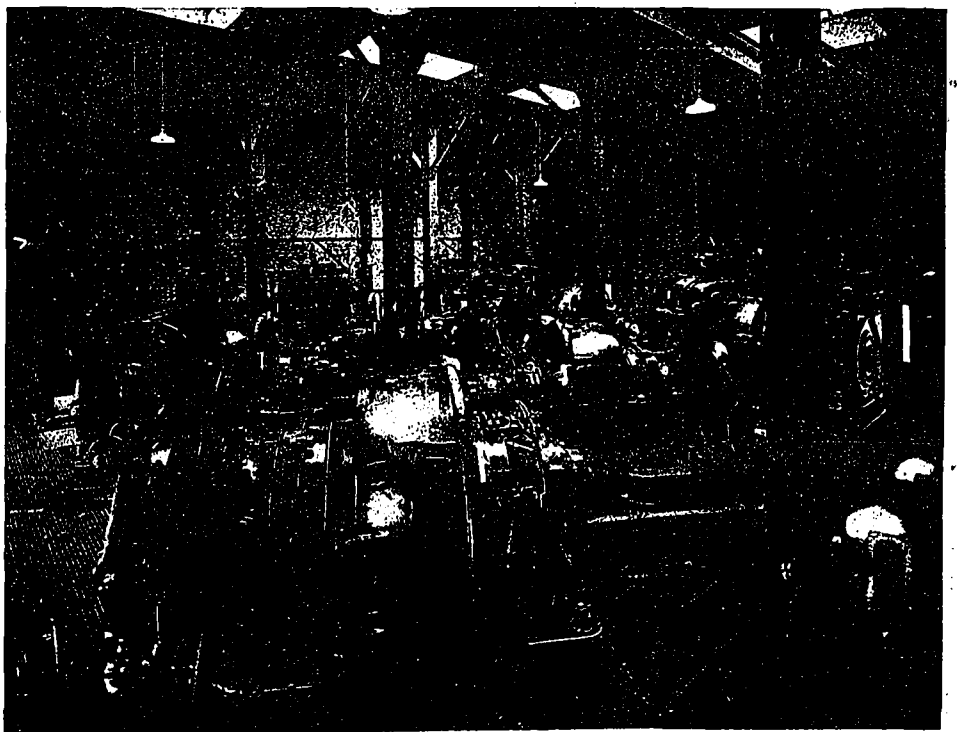


VIEW FROM TRINITY SQUARE OF THE T. EATON COMPANY'S NEW FACTORY, TORONTO.

WM. STEELE & SONS COMPANY, ARCHITECTS.

of the building, but serves at the same time to more completely isolate the latter without in any way making it less accessible. The staircases have been carefully planned, and are built of reinforced concrete. They consist of a double stairs 7 ft. wide, provided by a metal rail and leading to a landing, and from there on to 3½ ft. single stairs, turning to right and left to the floor below. This arrangement serves to divide the crowd and prevent congestion in case of emergency.

The exterior of the building is of brick with stone and terra cotta trimmings, most of the wall space being taken up by windows set in metal sash,



PENT HOUSE, SHOWING ELEVATOR MACHINERY, THE T. EATON COMPANY'S NEW FACTORY, TORONTO.

The Function of An Architectural Society *

By MR. SIDNEY WEBB

MAY I explain, at the outset, that I make no pretence at knowing anything whatever about architecture, or about the history of architecture? The suggestions I have to make come from another standpoint altogether. I have, as some of you know, written a sketch of your Institute as a professional association*; but I did not write it out of particular interest in your profession, nor from any interest in its subject of architecture. My business is public administration, and I took up your Institute as one of a number of similar bodies to see how the professional associations have developed during the present century; what work they have done, what have been their successes; the points on which they, I will not say have failed, but have laid themselves open to criticism; and to try to discover from the past history of the professional association what is the part it has to play in the world; what it can do, and what it ought not to do. I was interested in that subject because, twenty-five years ago, my wife and I spent six years in studying trade unionism; and in writing our books on this subject we stated, somewhere, that it was just as important that somebody should investigate the brain-workers' associations; and we suggested that they should be investigated. A year ago we took up the job for another purpose. The reason we took it up was that during the past ten or twenty years there has been a great revival and expansion of what I will call vocationalism in the world, especially in France, in this country, and in America. I mean by vocationalism the feeling that the vocation, the occupation, the trade to which a man belongs, is a much more important thing than is the parish, or the city, or the county, or even the country, to which he belongs; and that, therefore, he ought to associate very much more with people of his own craft, his own vocation, than merely with his geographical neighbors. And, moreover, it is the feeling that the part which he has to play in government, in democracy, ought, to a very large extent, to be played through his vocational organization. That feeling for vocationalism has been becoming stronger and stronger during the present century; you see it in all sorts of forms, good and bad alike. It would seem to lie at the back of the outbreak of Syndicalism in France; it lies at the bottom of the activities of the Industrial Workers of the World in the United States. You see it cropping up a great deal in French literature with regard to the brain-workers. We call it, for short, the Functional State, the idea being

that the organization of the community ought to be based upon function, not, as it is almost entirely at present, upon geographical constituencies. I say no more about that.

But you will see that, in view of this feeling in the countries of the world, the structure and function of such professional associations as exist do become of considerable interest to more than their own members; and that is why I have ventured to lay hands on the history of your Institute to see what it would yield in the way of inspiration, or suggestion, or warning, upon the subject of professional associations.

I shall not say anything to-day about the stages of growth of your association. It is interesting that it began in 1834, after some forty years of feeble forerunners of one kind and another. That is interesting to me because all the professional associations began since the beginning of the nineteenth century; practically all the voluntary organizations of the brain-working professions can be included in the nineteenth century. Some of them are only now forming; such newer professions as the Accountants and the Secretaries are only now getting organized. And the yet newer professions, like the Managers in Industry, are still not yet organized. Your professional association began at the same time as some others; and it began, like many others, not as a professional association in the ordinary sense, but as what may be called, technically, a "subject association." The business of the Institute when it started was not to look after architects; it was to promote architecture, and therefore it included not only architects, but other people interested in architecture. And the reason why your Institute was so largely composed of amateurs at the beginning of its work was that it was a subject association, not a professional association. Its interest was in architecture, and amateurs who were interested in it not only had as much right in the association as the professionals, but they contributed quite a special element—an advantageous element, which, in becoming a mere professional association, you may have lost. You, like other professions, have devoted a good deal of time to professional education; and you, like other professions, have devoted much thought to the subject of professional registration. It is astonishing how alike all these professional bodies are, just as every trade is like every other trade—if its own people only knew it; they are deluded by differences in names, and each man thinks his own trade is peculiar. Every trade union is like the others, with the same veil over it; and so every brain-working

*Address delivered before the Royal Institute of British Architects.

profession has much in common with other brain-workers' associations. It is only a difference in technique and in nomenclature which obscures that likeness. I, standing outside, can see the points of resemblance, perhaps, better than the points of difference. And you, like other professional associations, are gradually elaborating your special code of professional ethics. Some have done it to a greater, others to a less extent. There is nothing peculiar in that, and I hope you will not think I am criticising your association when I say there is nothing peculiar in it—that it is strictly as a type of professional associations that I am able to take it.

What is the origin of these professional associations? We distinguish three impulses, as we call them, which have led the brain-working professions, historically, to associate themselves. The first is what we call the creative impulse; it is the desire to promote the art, or the science, to develop, extend and advance it in all directions. That is really akin to the artist's feeling and desire for creation, and the members of a profession come together and unite their efforts deliberately to advance the technique—the science and the art—of their vocation. This creative impulse lay at the root of most of the professional associations.

At the beginning of the nineteenth century professional association was looked very much askance at; it was regarded almost as a conspiracy against the public; and, consequently, this extremely admirable impulse of improving the technique of the profession provided an eligible starting ground. And along with that was the fellowship impulse, the desire of every man to associate with his kind. As a professional man becomes conscious of himself as such, he tends to come into relationship with other professionals. And out of that has grown not only good fellowship at social meetings, but also benevolent funds, and the other things which characterize most professions. The third impulse—not quite so wholly good—is what we call the possessive impulse. It is the desire of each profession to get out of the community as much as it can for the collective service of its members. This is not altogether to be objected to; each profession must stand up for its own, and see to its own defence against the unconscious oppression of the mass of the community—the ignorant oppression. But that impulse does have its invidious side; and, in one profession after another, it has led to various attempts at larger remuneration and easier conditions of service, which are only human nature, but are, perhaps, not in the public interest. It is these three impulses which have given rise to your Institute, and to other professional associations.

I come now to the results of the professional association—and I want to put this very briefly. I think that in your Institute, as far as I can see, as in other brain-working professions, the result of the professional association has been a very considerable elevation of the profession. It is interesting to notice, in the history of professional associations, that in the early days of each one you do not find the “swells” of the profession very sympathetic with it; they do not see the need for any professional association. So you do not find the biggest people in the profession taking a very active part in such association. But the rank and file feel the need for raising the profession in the public estimation. And presently they are joined by the leaders of the profession, and the profession stands together in seeking to take a better place in the estimation of the community. I do not want to go into particulars, but I think there can be no doubt that the architectural profession stands very much higher than it did fifty or a hundred years ago in the estimate of the nation. And I think it owes a great deal of that to the long-continued efforts of the Institute. I do not want to say anything about improvement in architecture—on which I am not qualified to judge, still, one cannot help noticing that the efforts of the Institute over architectural education have, at any rate, left their mark, and that the rank-and-file architect has, I venture to say, so benefited that he is considerably better educated than was the rank-and-file architect of a hundred years ago. But my opinion upon that is worth nothing. I do not want to criticise the bad effects of the possessive impulse in your case—I do not know enough about it. Perhaps you will allow me to say one thing, as it occurs to me. I have never yet seen my way out of the dilemma of the architect in respect of his charge by a percentage on the gross cost of the building. I have no reason in any way to complain of architects, or to criticise architects in that respect; but, logically, it is a very awkward dilemma to be put in. As one architect said to me once: “I have had a very hard day's work. I have been from morning to night up and down a building, and the result is I have knocked at least £20 off my remuneration.” You will understand that. I think the profession does stand in a somewhat illogical position, shall we say, in reference to the method of its remuneration. And I have nothing to suggest to you as an alternative.

I would make a criticism, not on the architects, but generally on the brain-working professions, to which architects are probably less exposed than others, though about that I do not know. The ordinary type of brain-working professional is a man who works for what we call a fee, for a succession of clients, by himself, for

himself. And therefore all professionals tend to think that they should be regarded as alike, as it were, and interchangeable. And you know how far the doctors have gone in assuming that all doctors are interchangeable. In modern times there is much to be done by what is called scientific management, what I may call "team work." Let me give you a case in point concerning dentists. We want ten times as many dentists to do the work of dentistry as we have got. But I do not know that we want every one of them to be an M.D. in order to specialize in dentistry. If you are to have enough dentists for the population, you may have to have four or five grades of dentists: one man for extracting, one for conservation work, one as a consultant, and so on. Doctors and dentists would be much opposed to that. I do not know if we shall ever get sufficient of them to serve the whole community, instead of only the richer fraction, if we insist that each professional must be self-contained. If we are to get the work of the community properly done, for the whole of the community, we shall have to have, generally, more team work in the professions. I do not know how to apply that to architecture; I throw it out as a suggestion.

The chief fault of a professional association is its approach to exclusiveness. As soon as it gets into the saddle it wants to make arrangements about entry into the profession, the length of servitude or apprenticeship. You cannot help detecting a trail of a tendency to exclusiveness in nearly all professions: I will not say anything about architects at all. That exclusiveness takes certain forms. One profession says it will not allow anybody in who has not been apprenticed at a high fee to one of its own members, and the result is it makes its membership extremely profitable because people are willing to pay the high fee to get into the profession. I think that is invidious. Architects are not guilty of that, but I draw your attention to one particular form of exclusiveness from which it is difficult to get away, and it is one which is injurious. Has it ever occurred to you that we have been, and are, drawing practically all our statesmen, our lawyers, our doctors, our ministers of religion, for that matter, our authors, our editors, our architects, from about ten per cent. of the population, namely, the ten per cent. whose parents are able to give them some sort of secondary education in adolescence? Only ten per cent. of the community can give their sons secondary education at present, and therefore all the professions which make a secondary education a condition of entry—and it seems obvious they must exact some amount of education for entry—are necessarily excluding from their profession potential geniuses who are born in the general population.

That is a dilemma which I do not think, in any one profession, can be got over; it can only be got over by such an extension of the means of secondary education that the whole population can have it, so that you will be able to draw your potential architects and doctors from the hundred per cent. of the population, instead of from only ten per cent. And, it seems to me, we have allowed a very large amount of potential professional skill, if not genius, to go to waste because we have shut the door in the face of ninety per cent. of the population by this requirement of secondary education. This inevitable exclusiveness is rather serious, and it behooves every profession not to make it worse. You must insist on a certain amount of education, on a certain amount of apprenticeship training, but it is to be detected in professions that they rather want to make that training long, and they insist on keeping up the length of the servitude, irrespective of whether it is necessary or not. For instance, you cannot become a doctor in this country under five full years of academic professional training. Even though you may be a genius and can scamper through the instruction in three years and pass the examination with flying colors, you are kept down to the pace of the average man. You notice how, necessarily, that increases the expenses of the young man who wants to be a doctor, and so it has an invidious exclusiveness. Therefore, in arranging a curriculum and arranging the length of training—to say nothing of the fees—the tendency to exclusiveness has to be watched. The natural tendency is to keep it all up; and it is a very reasonable thing to want to advance the profession and maintain the standard of qualification, and all the rest of it, but it has the adverse effect of producing exclusiveness.

A much more serious exclusiveness, really, is this. You know, every profession tends to be governed by the people aged fifty-eight—(I am fifty-eight)—by the elders in the profession; it is inevitable. I used to think it was a bad arrangement; but being fifty-eight myself now, I perhaps take a different view. But the result is that it is governed by men who were brought up thirty years ago, whose technique is the technique of thirty years ago, whose knowledge of education relates to the education of thirty years ago. I suggest that there is a tendency in professional associations to ignore, honestly to ignore, the new technique, new methods, which the average elderly member is not personally acquainted with. I do not want to talk about architecture, but I can see it in other professions very obviously; that the elderly man in the profession cannot believe in the necessity or the excellence of what is new, of what was unknown when he walked the hospitals, or when he was

apprenticed or served his articles. That tendency to be bounded by the current technique, which is generally the technique of the old generation, is apt, in an advancing avocation, to produce undue resistance to the incoming of the new technique. I do not know what the buildings will be made of in the next generation of the new England after the war; it may be that they will be built of aluminum or of basic slag. But I very much suspect that the new material, whether it be basic slag or aluminum, will have to overcome a certain amount of prejudice before it is cordially accepted by the rank and file of the profession. This tendency towards conservatism needs to be watched and overcome.

Now to the point which I ought to have begun with: What is the proper sphere of an architectural society? You will have gathered from what I have said that it is founded on the creative impulse. It ought to aim at promoting its vocation. It is strengthened by the fellowship impulse in the way of social intercourse and benevolence. It is, I fear, always subject to the possessive impulse: its members will endeavor to get as much, collectively, for the vocation from the community as they can. All that they are entitled to from the community is enough to maintain their services at the highest point of efficiency. But in the estimate of what that is their bias will be to get as much as they can. That fellowship and creative impulse I need not say much more about; fellowship I need say no more about. The creative impulse must be the fundamental purpose of the professional association, to promote its art, its vocation, in all sorts of ways. A legitimate part of the possessive impulse is its defence, defence both of individual practitioners against the lay community, and of the profession as a whole against that lay community. It must stand up for the profession. It must insist on the profession having its proper place in the world; otherwise it will be steam-rollered by other interests.

Now I come to my three things which may be more new to you. The association is entitled to claim participation in the government of the profession. Every profession needs to be regulated in all sorts of ways—conditions of entry, conditions of training, ethical code; it may be registration or what not. And the professional association is undoubtedly entitled—it does not do its duty unless it claims to be entitled—to participate largely in the government of the profession. But I do not think that, from the standpoint of political science, the profession can be allowed to govern itself. There I differ from the vague functionalism or vocationalism which I said was prevalent. I do not think any profession can be allowed to govern itself. Take a case. It cannot be allowed to determine the conditions of entry; otherwise it makes the pro-

fession a monopoly. We want it to help in deciding what ought to be the conditions of entry, but the State could not allow any profession to exclude any people it chose to exclude, under any conditions it chose. It must help the State to fix the conditions of entry, but the State cannot allow it to fix the conditions itself. Otherwise the teachers might say: "No one shall come into the teaching profession except the sons of teachers," or it could be made very much more onerous to enter the profession. That has been done in other occupations in the past. Similarly about the training. A professional association ought to take a large part in prescribing the conditions of training, but you cannot give it complete power. And that for several reasons. First of all, because the governing body is apt, as I have said, to consist of people of fifty-eight, and you cannot allow older people to settle the conditions of entry, because they are not up to date; nor can you give it to the young, because you cannot trust them. They might prescribe a training which they thought was in their interests, but which ran counter to some other profession, or was against the interests of the community at large. Supposing doctors were to say that the art of doctoring was so wonderful and great that no one should be allowed to practise until he had been under education for ten years; the result would be to limit the number of doctors and send up the price of doctoring. Therefore we could not allow doctors to make a ten-years' limit, nor could we allow architects to put a similar limit upon the period of preparation. And likewise about professional ethics. An ethical code is all very well, but it might take on a form which is inimical to the common weal. Some professions have established codes which are in some respects inimical to the public interest. But the society ought to participate in the government of the profession.

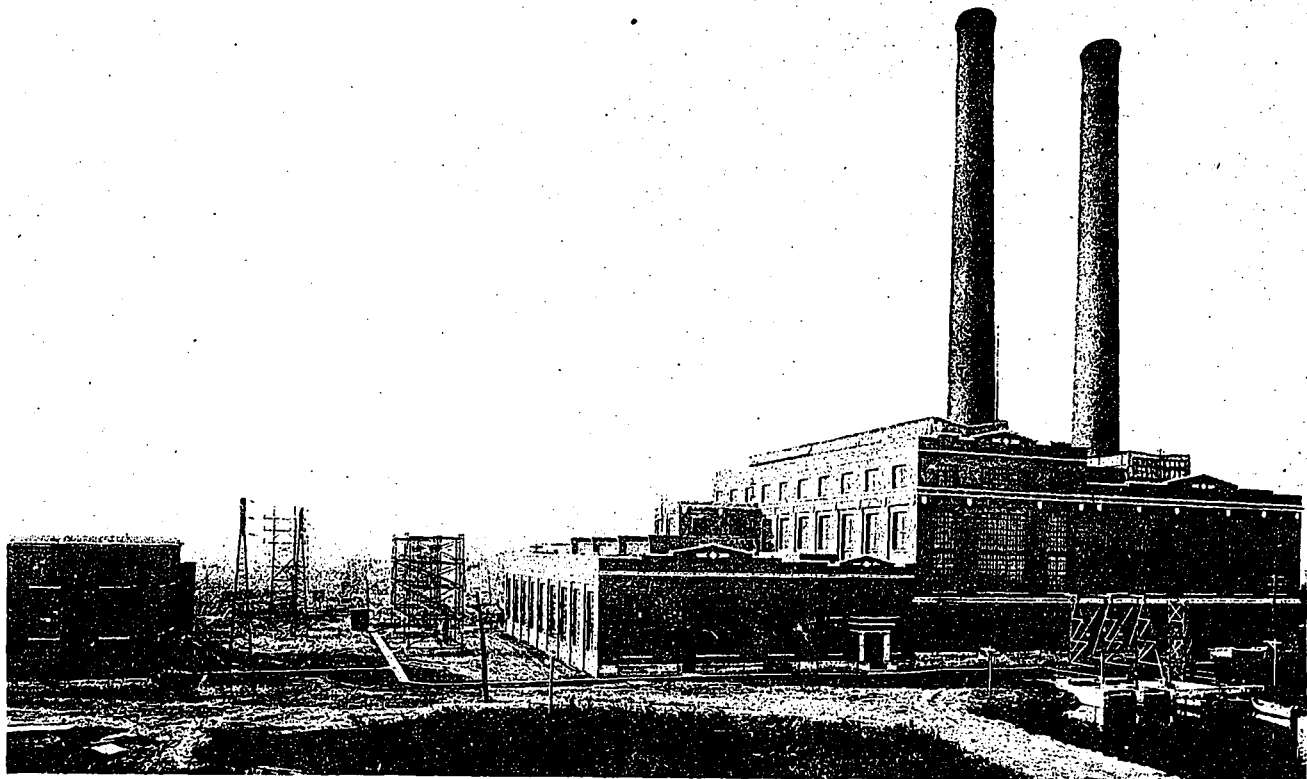
And now I want to mention two other functions which are not generally thought of, and this is serious. I came here, if I may say so, to put this idea to you. First of all, a very large part of the public function of a professional association seems to me to be one which it has not, to any great extent, yet exercised: and that is, it ought to claim the right and the duty of criticism of everything that is done by the Government, or, for that matter, by any public authority, in the lines of its own profession. It ought not merely to make that criticism in an irresponsible way, but it ought to regard it as its duty to inform the Government of the day of the professional opinion upon every kind of act which is done by the Government, or left undone, on which the profession has a distinct opinion. One of the very worst elements of our present Government, of what we call bureau-

cracy, is the secretiveness of official administration, and the suppression by that official bureaucracy, as far as possible, of any professional criticism of its work. Any architects who are in the Government service are not allowed to criticise the decisions or acts of their Government Departments from the point of view of architecture. There is a curious difference in this respect between the municipal and the Central Government services. The local government service does have a lot of professional criticism. The Institute of County and Municipal Engineers, for instance, is always full of criticism in its "Proceedings," its publications; and at its meetings it has papers criticising this or that drainage scheme, or electric light works, from a professional point of view. It does not hesitate to say that plan has such and such faults. But you find nothing of that kind from the professionals in the Central Government; they are not given an opportunity, they are not allowed, to give that sort of criticism of the work of the Central Government Departments. Perhaps that regulation is necessary; I do not know. But if it is, it makes it all the more necessary that some professional criticism of the Government service should be supplied by the professional association. And I would like to see it the duty of a professional association to keep constant supervision, and a very critical supervision, over all the acts of the Government, or any Government Department, or any public authority, falling within the realm of its profession; and to put that criticism publicly on record, and bring it definitely to the notice of all the Government authorities with the view to supplementing the, perhaps necessary, secretiveness of the bureaucracy, and at any rate supplying that criticism without which a bureaucracy can never really be healthy. I would go further, and say that I think the Government, either particular departments, or the Government as a whole, ought to have professional advice and counsel in each vocation. And I would have each Department arrange to have a standing body of professional advisers to whom I would give no power whatsoever. Let it express its views freely and publicly on all the projects and doings of the Government; in a report which should be laid before Parliament and definitely published, and, of course, in an uncensored form. I think every Ministry ought to have an advisory professional council of the profession with which its work is concerned. And whilst that advisory council should have no power whatsoever, it should have a free initiative to say what it liked, the power of publishing its reports, when it thought fit to do so, in an uncensored form.

My third point is this. It seems to me that it is the duty of a professional association—and this is a duty which, I think, no professional as-

sociation, except one, has yet seriously undertaken at all—to bring to the public notice, and to agitate for, the supply of a sufficiency of its service to the community as a whole. Let us begin with the doctors. The professional associations of the doctors have looked after the interests, as they thought, of individual doctors, and they have done their best to get individual doctors properly treated, and the profession as a whole properly treated. But the medical profession has not made its voice heard with regard to the service which it has to render to the community as a whole; it has not clamored for seeing that there was a proper professional medical attendance and treatment supplied to the whole community. I hope I am not saying anything too hard, but practically the brain-working professions began as the body servants of the rich, and they have not yet sufficiently realized that it is their duty to have developed out of that to become the servants of the community; they have not yet managed to make their service available for the whole of the community which needs their service. They still serve, on the whole, Mammon, and Mammon alone. And, unfortunately, the great mass of the community still has to go without the services which the professions do render to the rich, and ought more and more to render to the community in its collective capacity.

If you ask me to apply that to architecture, I am in a difficulty. I cannot help noticing that in the early days of your association—to go back to the early Victorian times—architecture was thought of only as a luxury for the rich, and, even to the end of the nineteenth century, that it could be said that ninety per cent. of buildings did not require an architect; only those buildings which it was expected or desired should be beautiful required an architect. And that seems to be a totally unworthy view of architecture. It is the duty of architects to claim that they shall be responsible for all buildings, including town-planning. And when you consider the awful buildings and the awful town-planning to which the great mass of England is still subject, the need for more architecture and better is surely very obvious. It should be the aim of the architectural profession to claim that the service which it can render, the service of architects, should be supplied in sufficient quantity to be available for all the buildings and all the town-planning of England. It is a reproach to the profession that any town should be badly laid out. I do not say it is the fault of the profession, but I hold it up, as an ideal, that its business, as an association, is to demand that such arrangements shall be made as may be possible so that the service which the profession can render to the community should



POWER STATION OF DOMINION POWER AND TRANSMISSION COMPANY, HAMILTON, ONT.

BERNARD H. PRACK, ARCHITECT.

Dominion Power and Transmission Co's Plant

INCREASED production due to materials required for war purposes, together with certain disadvantages arising through the recent fuel shortage, emphasizes the importance of electrical energy in Canada's present industrial activity. The restrictive measure now in force in Ontario, both limiting the number of municipal street lights and prohibiting the illuminating of retail shop windows in order to conserve power thus derived for operating manufacturing plants, is also an indication of the extent to which electricity is being used for the purpose mentioned. In addition to the hydro electric system of the Ontario government to which the steady policy of expansion had directed public attention, there are also several important privately controlled service corporations which are heavy producers of power for industrial and other purposes, and these likewise have been placed under the necessity of constantly increasing their plant equipment.

Particular reference in the latter case can be made to the Dominion Power & Transmission Company whose recently completed power station at Hamilton represents in the plan of the building itself, and in the character of its installation, a notable achievement in modern power house design. It is a steam operated plant situated on Burlington Bay just outside the eastern boundary of the city, and is designed to

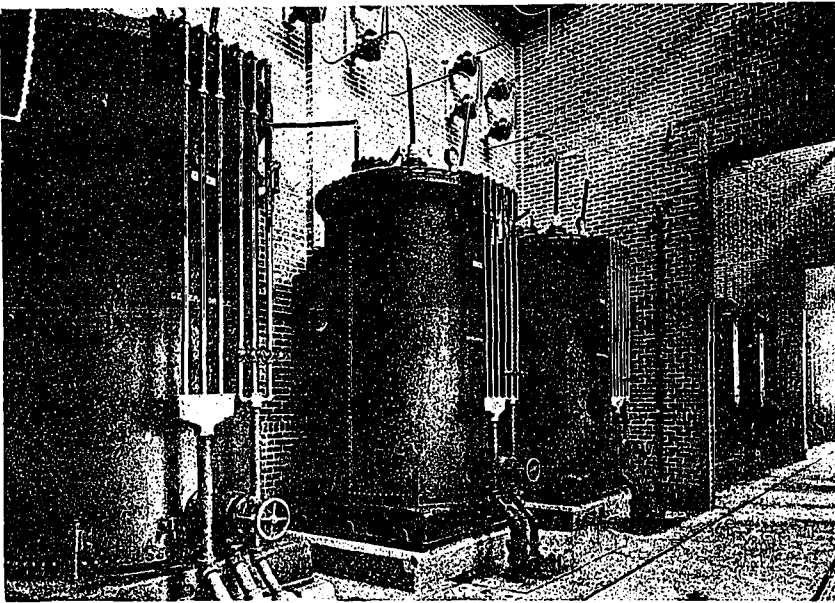
have an ultimate capacity of 75,000 K.V.A., of which 25,000 has been installed up to the present time. The output is delivered at a voltage of 42,000 to the high tension lines of the company, whose main source of supply is their hydraulic plant De Crew Falls, 34 miles distant from Hamilton.

In order to provide for additional machinery equipment necessary for the contemplated increase in capacity mentioned, the plant is so arranged to admit of a duplication of the present building which will be carried out as the need for expansion arises. In addition to its generating capacity, the steam plant is designed to act as a step down transformer station of 25,000 K.V.A. capacity to transform the high tension current to 13,200 volts for distribution to neighboring manufacturing plants. One half, or 12,500 K.V.A., of this step down capacity is included in the present installation.

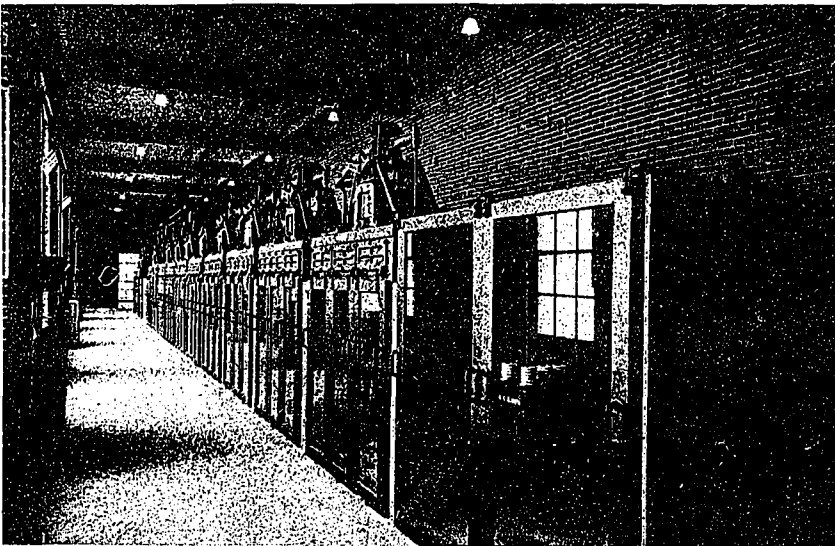
The intention here, however, is not to touch upon the technical side of the service installation except in a general way, but rather to indicate by the use of photographic illustrations the character of the plant and to show how its various departments have been successfully coordinated to obtain the greatest operating efficiency. This is explained in the accompanying cross section which gives a very complete idea of the general working arrangement. Examin-



GENERATOR ROOM.



TRANSFORMERS EQUIPMENT.



ENCLOSED SWITCHES.

ing it from right to left it shows the position of the coal handling plant, boiler house, engine room, control station, switching and transformer rooms, and delivery outlet for distributing current, all of which are arranged in the order named.

The coal handling plant at the right has a storage capacity of 1,250 tons. The coal is dumped directly from the cars either into the hopper of the coal crusher below the car tracks, or placed in a reserved supply. After being crushed the coal is delivered by an enclosed bucket elevator to a bunker situated between the stacks, and from thence to an overhead larry in the boiler room which weighs the coal and delivers it via chutes to stoker hoppers. The two chimneys or stacks which take off the fuel gases are of radial brick construction, and each 240 ft. high above foundation, ranging in diameter from 22 ft. 2 inches at base to 12 ft. internal top dimension. The four boilers, which are arranged in single settings, are of the inclined tube type and have an individual capacity of 1,050 H.P. These are equipped with mechanical stokers each having eleven retorts with a total length and depth of 19 ft. 6 in. and 8 ft. 3½ in. respectively. Beneath the boiler room floor is a space on each side for the removal of cinders which are dumped into cars running on tracks to the outside.

The generator department comprises three floors, the main or operating floor on which the generating units are placed being on a level with the boiler room floor. On the ground floor below are the condensers and auxiliary equipment together with the foundations on which the turbo-generator above rests. The basement or floor level forms the pump well for the condensed circulating pumps.

The present generator installation consists of two turbo-generators of 10,000 equivalent K.W. capacity, delivering 3-phase current at 6,600 volts; 1,100 amps. per terminal; 66 2-3 cycles. The generators are of the four pole

type and run at 2,000 revolutions per minute. This equipment will ultimately be increased so as to include in all six turbo-alternator units, each of a maximum rated capacity of 12,500 K.V.A. giving a total station capacity of 75,000 K.V.A. or an equivalent at 60,000 K.W. at a power factor of 80 per cent.

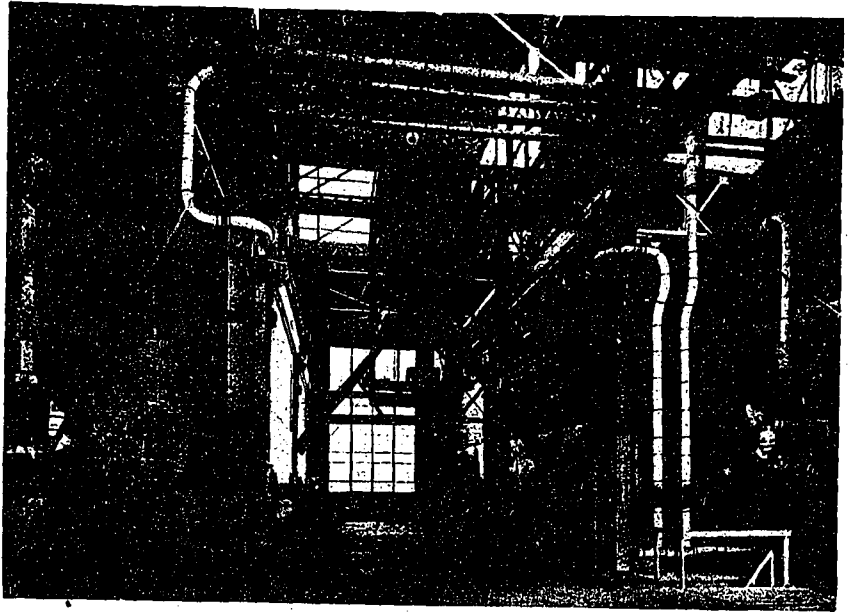
Connected to each generator is a bank of three, single phase transformers which step up the voltage from 6,600 to 42,000 volts. These are installed in a room adjoining the high tension switch room and separated from the latter by a brick wall. The machine together with the transformer constitutes a unit and these units are electrically connected only on the 42,000 volt bus, thus introducing two banks of transformers between machines to serve as buffers to the short circuit current, in the event of trouble in one.

Step down transformers for distributing current to near-by factories are located at the north end of the system and are connected on the high tension side to disconnecting switches and G. A. type circuit breaker to the 42,000 volt bus.

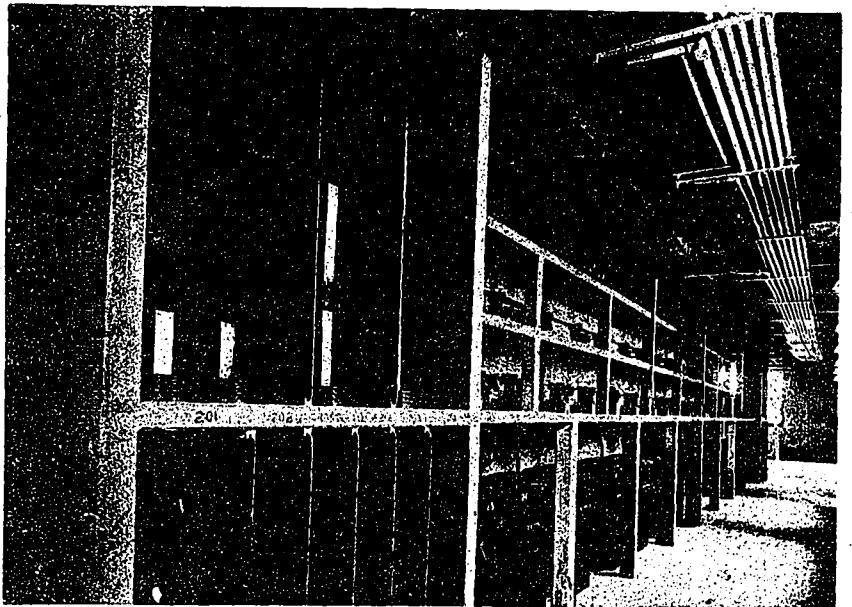
The low tension 13,000 volt bus is at the north end of the 6,600 volt bus, as are also the switching apparatus, choke coils and lighting arrestors for the feeders.

A special feature of the plan is the control room on the second floor, which derives outside light from three sides and has a supervising bay directly overlooking the turbine room.

The building is of steel frame construction with concrete foundation, floors and roof and red pressed brick exterior walls, the latter being finished with light cream terra cotta trimmings. The inside engine room walls from the second floor line to the terra cornice are faced with enamel brick, coved bricks being used at the floor line and rounded corners for pilasters, window jams and sills. The floor here is of red Welsh quarry tile, while in the entrance vestibule and halls the floor is of marble tile with border and inlaid



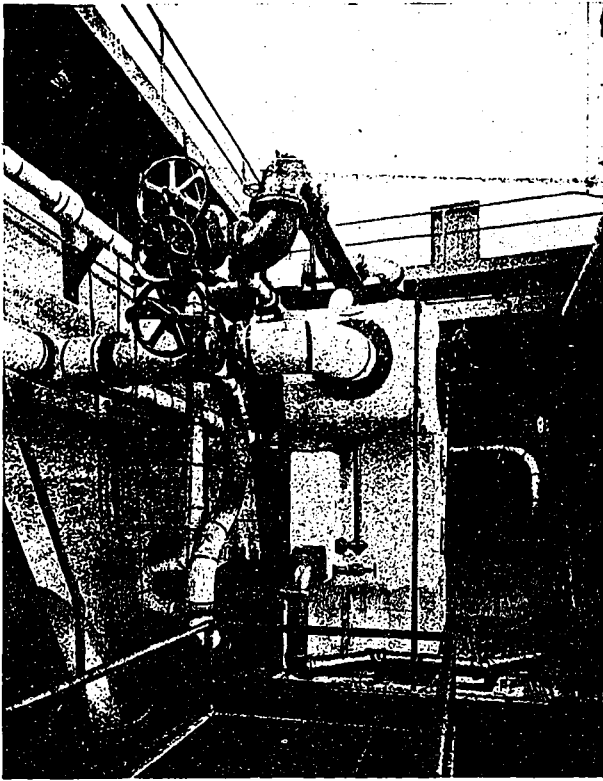
BOILER ROOM.



PARTIAL VIEW OF 6,600 VOLT BUS STRUCTURE.



CONTROL STATION.



AUXILIARY HOT WELL AND PUMP EQUIPMENT.



OIL SWITCHES AND BUSES FOR 42,000 VOLT CURRENT.

centre ornament. All the main partitions throughout are of brick or hollow tile and the others of plaster on metal lath and steel stud-dings.

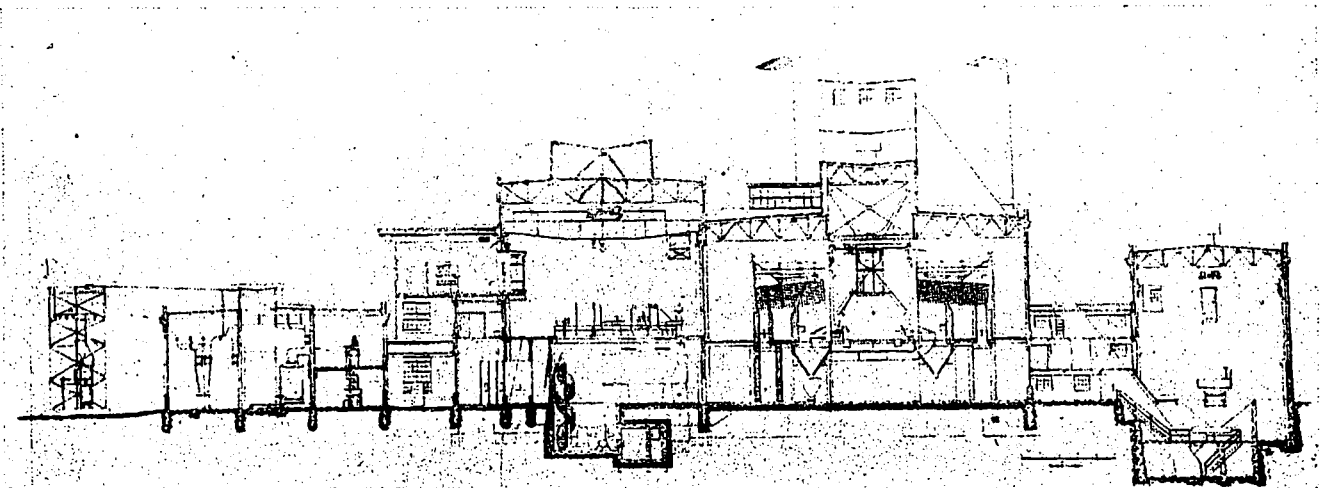
A unique feature in connection with the installation of the boilers was their complete insulation against loss from radiation. In the walls between the fire brick and the outer course of common brick, was inserted a layer on nonpareil insulating brick, while the top surfaces of the boiler drums were insulated with these brick also. It is said that one layer of this brick will retain as much heat as ten layers of common brick. This naturally results in a considerable saving in fuel and better working conditions for the men. These brick are made of diatomaceous earth or kieselguhr, and are very light weighing

only $1\frac{1}{2}$ lbs., although they have a crushing strength of 140 lbs. to a square inch.

All of the steam piping and heaters were insulated with nonpareil high pressure covering. On high pressure lines 2 in. thickness covering was used, and on low pressure lines 1 in. covering. Provision was also made for repairs to flanges by the application of insulated flange casings so constructed that they can be readily taken off and replaced.

British Housing Plans After The War

The matter of devising ways and means to overcome the present great shortage of houses in the United Kingdom is an after-the-war problem to which serious attention is being given by the authorities. While it is held that



SECTIONAL ELEVATION, DOMINION POWER AND TRANSMISSION COMPANY PLANT, HAMILTON, ONT.

existing conditions must be borne until the close of hostilities, there is plenty to indicate that the Government is fully alive to the fact that immediately at the end of the war a comprehensive programme must be undertaken to solve this important problem. Circumstances bearing on the present situation are indicated in a recent report of the United States Consul at London, which states that the Technical Committee set up by the National Housing and Town Planning Council has now submitted its interim report to the Local Government Board. The committee took as the basis of its inquiries the statement by the president of the Local Government Board that 300,000 houses for the working classes should be built by the State in England and Wales alone. This estimate does not cover the pressing needs of Scotland. It is said that in order to carry out this programme the organizing ability of at least one-half of the employers in the building trades and the labor of 400,000 men will be required. The committee points out that if 200,000 urban and 100,000 rural houses are erected, this will do no more than to make up for the shortage of new houses directly due to stoppage of building during the war, and will leave untouched the general housing problem, with overcrowded dwellings in town and country.

The report says it will be necessary at the close of the war to ask the tenants of the new houses to pay higher rents than those current before the war. For this reason the houses must be made attractive to be well worth the extra rent charged. The following points to be observed in all plans adopted by local authorities for cottage building are presented:

The houses should be broad rather than deep, to secure ample light.

Back extensions are better avoided; all the rooms should be brought under the main roof.

Three bedrooms should be provided in all the new houses.

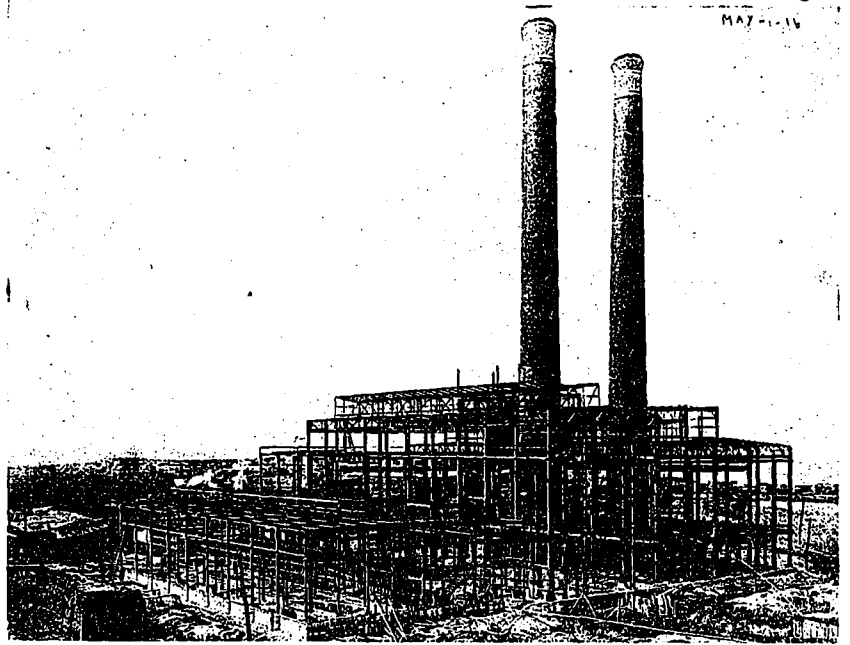
The houses should, as a rule, be provided with parlors.

Each house should have a bath, with hot water.

Ample window space should be given and windows carried as near to the ceiling as possible.

A layer of concrete or other approved impervious material should be laid under all floors to prevent damp rising, and a proper damp-proof course should be provided in all walls.

The level of the ground floor should be above the level of ground immediately surrounding.



DOMINION POWER AND TRANSMISSION COMPANY PLANT, SHOWING STEEL FRAME AT TIME OF ERECTION.

The assistance of women with close knowledge of household economy should be sought in regard to details of interior construction, such as the design of the stairs and the provision of cupboards, larders, and storage accommodation.

It is recommended that the Government should furnish money for these projects only when the general plan of the housing estate or area meets with the Local Government Board's approval. The areas should be laid out on modern town-planning lines, and the number of houses per acre in urban districts should not exceed twelve.

Function of An Architectural Society

(Continued from page 88.)

be available in sufficient quantity, and of sufficient quality, for the benefit of every person in the community, and not merely as a luxury for a rich class. That is a very big claim to make for a professional association. I am asking that the professional association should not only have this work of elevating the profession, looking after the profession, regulating the profession, as much as it is allowed to do, but I have said it should claim a large participation in the government of the profession, but not the sole government of the profession; that it ought to make it its business to conduct a regular, authoritative, public, responsible criticism of everything that the Government does, that any public authority does, in the sphere of its profession. And, above all and supremely, it ought to regard it as its duty to claim, in season and out of season, that the services which the profession can render the community should be available in quantity sufficient to enable every person in the community to get the benefit of the service.

Housing For The New Industrial Town

By A. V. HALL, Landscape Architect

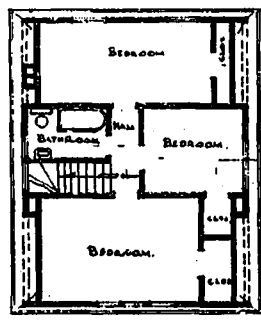
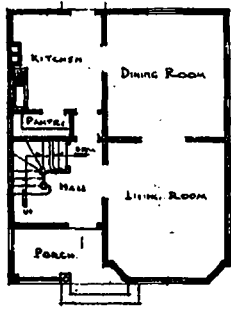
THE subject of housing may, for our purpose, be divided into three divisions, namely, municipal housing, which may cover the work of municipalities, and private enterprise for the betterment of conditions in congested areas in the city or large town. Next suburban housing, which may include the activities of private or industrial enterprise that aim to deal with the problem in the small towns or in the immediate surroundings of the large city; and last, housing as applied to new settlements about the plants of the new power developments, mining companies, and the pulp and paper industries.

The considerations involved in recommendations for the above divisions differ in direct proportion to the class of tenant for which it is planned, and to the land values of the district under consideration. It is the purpose of this article to deal only with the last division, now that so many new industries are facing a problem of inducing labor to forego suburban advantages for the new settlement. These industries have the opportunity to benefit by the examples of the older concerns which have only to-day emerged from expensive experimentation.

In the new town site successful provision for housing, and the plan for the town itself, are

interdependent to such an extent that neither can be economically considered apart from the other. The plans for the town layout and housing should be prepared at the time of planning the plant. A new industry should organize a department, or a separate company, which would handle the construction of streets, service, etc.; the erection of houses, and all that pertains to the development of the new town. This department can call for expert advice on the varied problems of planning, construction and maintenance, and so have houses for employees before the plant is in operation. At the close of this first period of construction it will have the results of this expert advice represented in figures of actual cost on which to base plans for extensions and future maintenance.

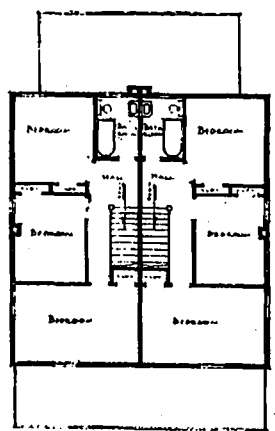
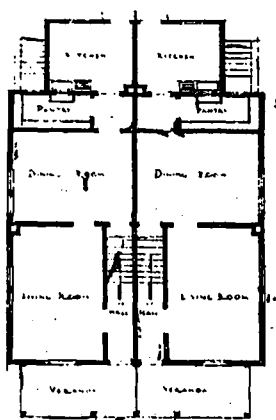
After the planning expert has laid down the street lines, lot lines, and the park and playground areas on his preliminary plan, the original cost of the land should be charged against the number of lots, or saleable area. Estimates should be carefully prepared for the cost of constructing streets and service, with pavements, sidewalks, planting, etc., and sewer, water and light, for the total area, as well as for maintenance, interest and the overhead charges of the department. This total for development



FIRST FLOOR.

SECOND FLOOR.

Fig. 1—Type of House Erected by the American Wool'n Mills Company, Lawrence, Mass.



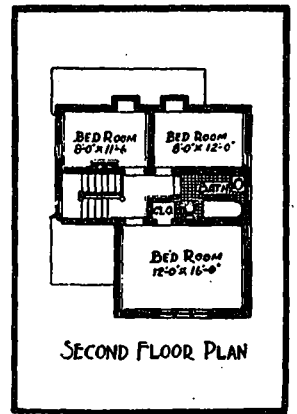
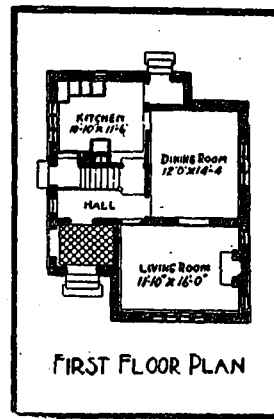
FIRST FLOOR

SECOND FLOOR

Fig. 2—Two-family Semi-detached Houses Erected by the Cleveland Cliffs Iron Company, at Gwinn, Mich.



Fig. 3—One of the Houses Erected by the Goodyear Tire & Rubber Company at Akron, Ohio.



should also be charged to the lot, which will give the average *improved cost* per lot. The difference between the *original cost* and the *improved cost* should not run over six or eight cents per square foot. The architect should at this time estimate the total cost of the various types of houses, and include in his estimate the cost of walks, finished grading, seeding, etc.

With the above figures, the rates of rental or sale necessary to retire the capital invested in a given term of years may be ascertained. If the town and the houses have been economically planned, and no profit is figured for the company, the rental or sale prices will be low; if not, a new preliminary plan should be made at once. To illustrate this we are quoting the figures that the Goodyear Rubber Co., of Akron, Ohio, placed before their employees who purchased:

| | | |
|---|-----------|--------------|
| Instruments | 445.00 | |
| Sidewalk, 265,531 sq. ft. (est.) | 23,153.00 | |
| Grading about houses, top soil seeding (est.) | 13,000.00 | |
| Miscellaneous, ditches monuments, etc. | 1,832.00 | \$180,675.00 |
| | | 210,675.00 |

| | |
|---|---------------|
| Number of Lots 430, average area 6250 sq. ft. | |
| Original Cost per lot | \$ 70.00 |
| Cost of improvement per lot | 420.00 |
| Total improved cost | 490.00 |

Successful industrial housing can only be obtained where the project is self-supporting after it is provided. This method of estimating the financial aspect will tend toward the elimination of theory and false ideals, and will place the whole project on a practical basis. If the rental seems unduly low the standard of the development indicated by the size of the lots, the design and materials used for the houses, may be raised accordingly. After this preliminary plan has been made and adjusted to the financial requirements the houses themselves may be considered in detail.

ORIGINAL COST OF PROPERTY:—

| | |
|---|-------------|
| 100 acres at \$300.00 | \$30,000.00 |
| Cost of Improvement: | |
| Excavating 100,000 yds. (est.) | \$27,175.00 |
| Curb for brick pavement, 11,796 lin. ft. . . | 3,538.00 |
| Gravel roads, 36,078 sq. yds. (est.) | 16,235.00 |
| Curbs and gutters for gravel roads, 35,953 ft. | 21,574.00 |
| Sanitary sewer system, (est.) | 21,000.00 |
| Storm sewer system, (est.) | 8,000.00 |
| Main drain | 8,510.00 |
| Bridge, (concrete) | 9,729.00 |
| Planting trees and shrubs (est.) | 2,500.00 |
| Office and Engineering expense, Arch. fees | 21,000.00 |
| Blue Pond drain | 2,932.00 |

TYPES OF HOUSES.

There are usually three types of houses to be provided for. The first will be the house for the laborer, who receives the smallest wage; the second the house for the mechanic, who is accustomed to expect the average city living conditions, and the third, and the least considered in

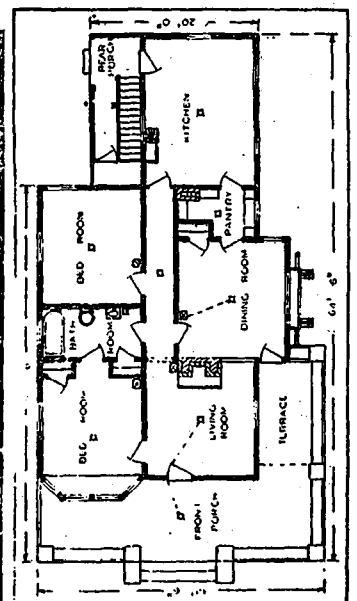


Fig. 4—Two Bungalows Erected by the United States Steel Company. In one of their permanent new towns.

this article, are the houses for the officials, who may have to spend all or part of the year near the plant.

Class "A"—Laborers' houses usually provide for five to seven rooms per house. This type of house is usually subject to rental, and may be built in the detached or semi-detached style. In the new town, where the land is cheap, each house should have sufficient area for a small garden, and for plenty of light, so that the above types seemed to be the only ones to meet the requirements. The semi-detached type is often placed with the dividing partition on the property line, which gives the maximum amount of open area to the lot (See Fig. 6).

Plans should be prepared for several different elevations, which could be alternated to avoid the too frequent recurrence of the same elevation upon a given street. Where a com-

pany expects to erect a considerable number of houses the first year it should let contracts for several houses, each of three or four different designs, and by "wholesale building" secure a better price per house. The cost of this type of house should range from 12 to 15 cents per cubic foot, or from \$250.00 to \$350.00 per room.

Figures 1-2 illustrate by photograph and a typical plan two houses of this type.

Class "B"—The size of this class house should be from six to eight rooms. The general plan should, as in the case of Class "A," be very simple, but the architect is able here to have a slightly wider range in materials, finish, etc., as this type of house will stand an increased expenditure as against that of Class "A." The lots on which classes "A" and "B" may be erected should be of practically the same size. Slight variances in the outline of the lots tend to add rather than to decrease their attractiveness. The cost of this house might be between 12 and 15 cents per cubic foot, or \$300.00 to \$500.00 per room.

Figures 3-5 show photographs and plans of three houses which have been erected by separate companies. These illustrate fairly well the house that can be erected under the conditions outlined above.

Class "C"—Houses of this type will be situated on lots of larger area, which will have been especially provided in the plan of the town, and will, wherever possible, have the advantage of the finest outlook. The plan of the houses themselves

will be governed largely by the desires of the purchasers, and the company will consider

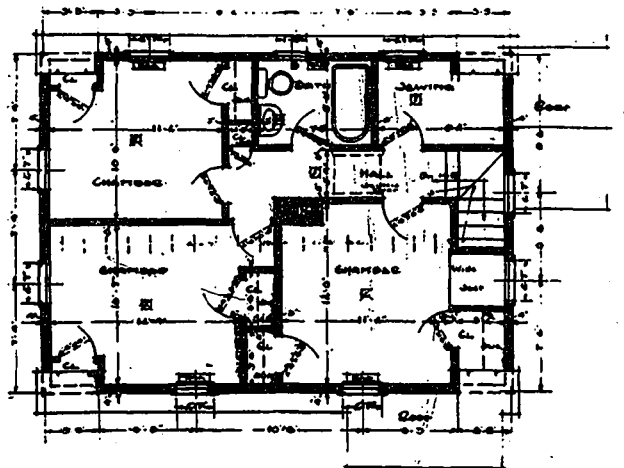
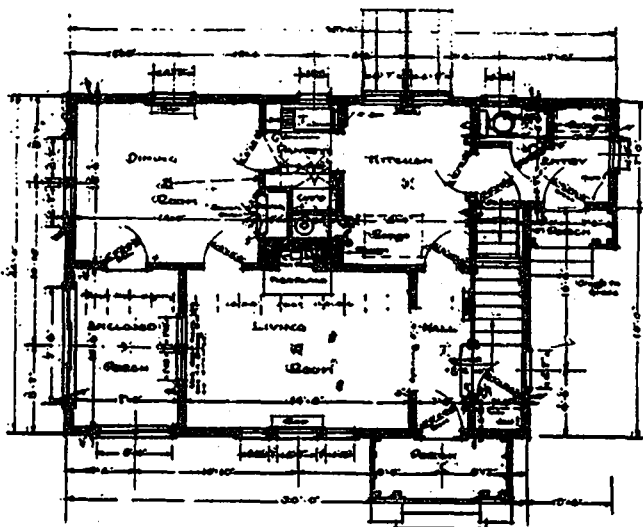
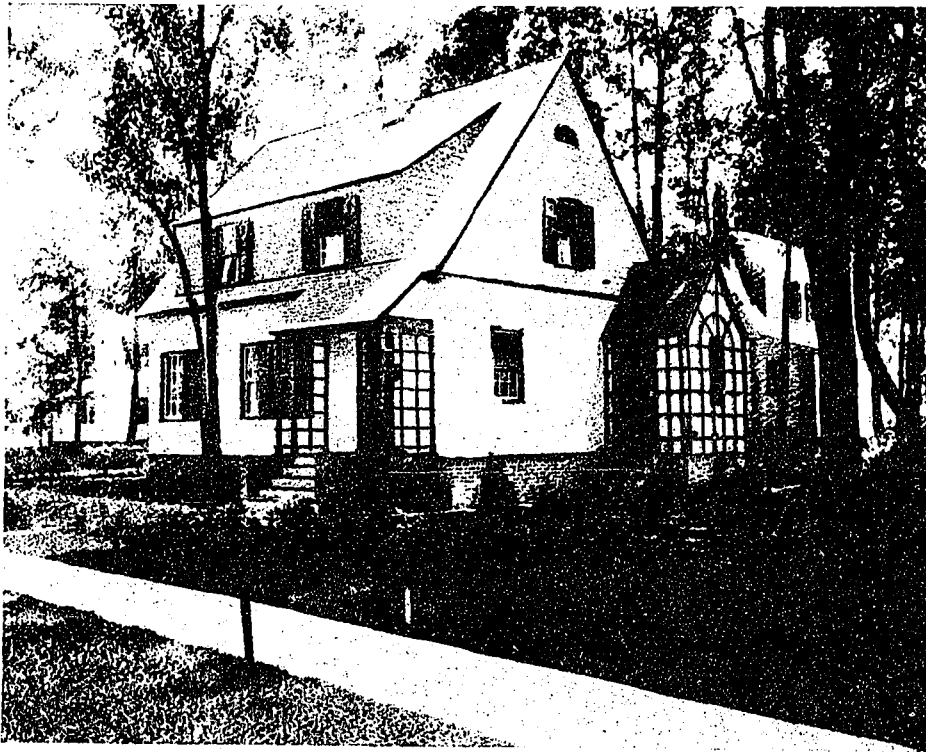


Fig. 5—One of the Houses Erected by the Norton Company, Worcester, Mass.

each house separately as occasion arises, which is usually after the first period of development.

Construction—In a housing development of this nature a fatal mistake has often been made in letting the work to unreliable contractors under insufficient supervision. No matter how simply the houses are planned, or what materials are used, the erection itself must be done

TOWNSHIP OF GWINN, MICH.
 SEC. 21 T43N. R31W.
 CLEVELAND CLIFFS IRON CO.
 L L L L

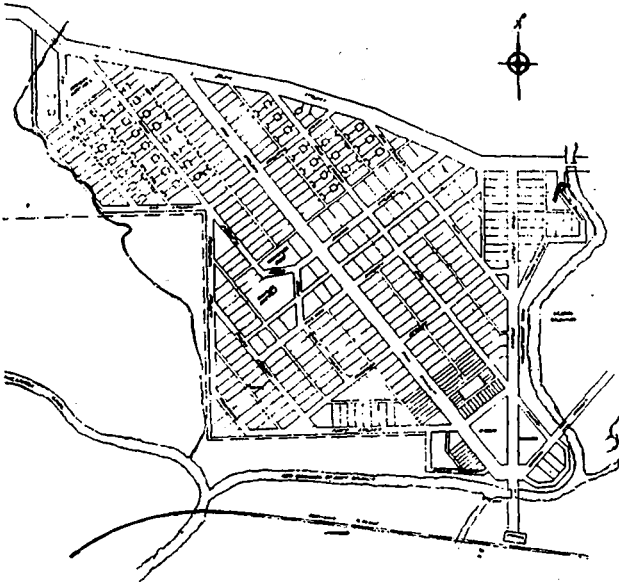


Fig. 6—Plan of a Portion of the Town Site of Gwinn, showing the Arrangement of the Semi-detached Houses Upon the Lots. Longer Views are Obtained Between Houses by Altering or Staggering the Houses on Either Side of the Street.

under responsible supervision, whether by the architect or by some representative of the company who is a practical builder.

Where the houses are rented the return for good workmanship is immediate through a reduction in maintenance, and in the case of sale the company are free from the prejudice arising from selling a poorly constructed house to an employee.

In the case of the Canadian town, for the paper industries especially, the most economical construction is likely to be that of wood, such as is shown in the accompanying photographs.

Sale or Rental—There are two methods of handling the houses after they are built. One is for the company to adopt the fixed policy owning them and renting them to their employees, and the second is, to encourage every man to own his own home. In the first instance many companies, especially those located near cities, have adopted this method to prevent outsiders from gaining ownership in their community and benefiting by their efforts. The objection is, that first there is always the spirit of landlord and tenant; second, we usually find additional effort necessary on the part of the company to furnish incentive in matters of maintenance, beautification of grounds, and civic interest; and third, the company has to

plan to carry this feature as a permanent part of its organization.

The provision for the ultimate sale of the property after the plan of a real estate development encourages the employee to own his home. This feeling of ownership tends to make his interest in the welfare of the town more permanent, and it also allows the company to withdraw from its housing activities at such a time as the town itself has sufficient numbers to obtain a charter. This feeling of permanency makes an additional inducement for tradesmen to buy and erect their own stores and business buildings. It has been found that the buyers do not object to the necessary restrictions, which in the case of the new town, cover a wider field than where municipal ordinances exist. Rentals are, of course, necessary under this plan also, but the company while still controlling the property for a considerable period after the sale, encourage civic pride, and the responsibility which differentiates the permanent employee from the drifter.

After the construction work is completed in a growing section, and the houses are ready for occupancy, a certain amount of attention should be given to each lot on which a house is built. Several concerns have at the beginning of construction established a nursery, which has in two years' time developed plants and trees of sufficient size to make the necessary plantations of shrubs and fruit trees on each lot, as well as shade trees along the streets. This method saves nearly 50 per cent. in the cost of the plants, and saves the necessity of the semi-



Fig. 7—Reprehensible Housing Methods at the Lackawana Steel Plant. One (?) House for 2000 Employees. Note the Unightly Condition of the Grounds.

annual planting orders, losses from shipping, etc.

Purchase—The method arranged for the purchase by the employee has taken several forms. The Norton Co., of Massachusetts, make, in brief, the following arrangement:

The purchaser pays 10 per cent. down, and the conveyance of the property is made at once. For the balance, the purchaser gives two notes,

the first of \$1,000.00, is payable in twelve years at 5 per cent. The second is payable on demand at 5 per cent., and both notes are secured by money mortgage.

The purchaser makes supplementary agreement to purchase five shares in a co-operative bank, and to continue payments thereon until his deposits have matured a sum of \$1,000.00, which takes nearly twelve years. In consideration of the agreement the company agrees not to make demand on the demand note as long as the purchaser continues his payments at the co-operative bank. The company itself insures the life of each purchaser, and in this way is able to agree that if he shall die or be incapacitated within twelve years it will accept the value of his co-operative bank share at that time in full payment of the time note.

By this arrangement the purchaser is assured of ownership of the property in twelve years, or at the time of his prior death, with the exception of a first mortgage covering a demand note which is less than 60 per cent. of the value of his house.

To carry the payments on a house costing \$3,800.00 the total monthly payment, covering interest, taxes, insurance, bank shares, etc., is \$20.00, the house in this case is sold at cost to the company, the lot on which it stands contains 6,850 square feet. The cost figured from purchase of the land and its share of the town development added is 10 cents per square foot, or \$585.00.

The Goodyear Company purchased land at \$300.00 per acre. This land subdivides into four house lots per acre after the deductions for streets, parks, etc., have been made. The improved cost per lot was \$490.00 on an average. Their arrangement for the purchase required no initial payment down. The first mortgage is in this case carried by a large life insurance company, and the second by the company themselves, with interest at 6 per cent. in both cases.

Semi-monthly payments are arranged which pay the second mortgage in twelve years, and the first mortgage in three years more.

To prevent speculation 25 per cent. is added for the cost price of each lot at the time of sale, and is credited the purchaser after he has carried his payments for five years' time. The *semi-monthly* payments required to purchase a house valued at *cost* at \$2,860.00 if no initial payment is made, \$16.54 for the first five years, \$10.26 for the next seven years, and \$5.22 for the last three years, when the house is entirely clear. The company allows the employees, if they desire, to arrange for a larger payment at specified time. The company has also arranged that if the purchaser wishes he may by adding an average of 50 cents per thousand to his semi-monthly payments to carry a life insurance which will free his home in case of death.

The nature of each industry and each town site require a special adaptation of the general principle stated above. No industry can undertake housing with the expectation of having its capital earn what it might elsewhere, but it has been proven that provision can be made to give attractive conditions to permanent labor at no cost other than the difference in interest rates. The fact that such houses as those shown in the accompanying cuts have been built in this way should encourage Canadian industries to attempt a similar solution for their labor problem.

Dry Rot

Dry rot is a misnomer. According to an article on this subject by C. Waterton in the "Architect and Contract Reporter," this disease in timber ought to be designated a decomposition of wood by its own internal juices, which have become vitiated for want of a free circulation of air. If you rear a piece of timber, newly cut down in an upright position in the open air, it will last for ages. Put another piece of the same tree into a ship or into a house, where there is no access to the fresh air, and ere long it will be decomposed. But should you have painted the piece of wood which you placed in an upright position, it will not last long, because, the paint having stopped up its pores, the incarcerated juices have become vitiated, and have caused the wood to rot. Nine times in ten wood is painted too soon. The upright unpainted posts in the houses of our ancestors, though exposed to the heats of summer and the blasts of winter, have lasted for centuries, because the pores of the wood were not closed by any external application of tar or paint, and thus the juices had an opportunity of drying up gradually. On making some alterations in a passage, I put down and painted a new plinth made of the best and apparently well-seasoned foreign deal. The stone wall was faced with wood and laths, and the plaster was so well worked to the plinth that it might be said to have been air-tight. In about four months a yellow fungus was perceived to ooze out betwixt the bottom of the plinth and the flags, and on taking up the plinth, both it and the laths and the ends of the upright pieces of wood to which the laths had been nailed were found in as complete a state of decomposition as though they had been buried in a hot-bed. Part of these materials exhibited the appearance of what is usually called dry rot, and part was still moist, with fungus on it sending forth a very disagreeable odor. A new plinth was immediately put down, and holes one and a half inch in diameter at every yard were bored through it. This admitted a free circulation of air, and to this day the wood is as sound and good as the day on which it was first put down.

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

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Honor Roll

Paucity of numbers alone as regards the membership of the profession in a young country such as Canada makes the enlistment of architects and draughtsmen noted in the honor roll published elsewhere in this issue both an enviable and conspicuous achievement. It reveals both principals and juniors actively aligned in support of the ideals and objects for which the Allies are contending, in whatever capacity their services can be used. Many in the list have attained military positions of rank and distinction, practically all have seen active field service, and some, as the casualties indicate, have made the supreme sacrifice, including several members of high professional standing.

Yet, as representative as the list would seem, it does not constitute an entirely complete record of the active participation of Canadian architects in the present war. There are still a number of names unobtainable at the moment which it will be necessary to add at a future time, as well as perhaps certain inaccuracies as to units and branches of service which will require adjustment before the list appears in its finally revised form. It is also incomplete in the sense that it does not take into account members

of the profession who, while not actively engaged in military life, are nevertheless doing important and necessary war work. This refers to the establishing of hospitals, training camps, and aviation buildings, for which the services of a number of architects and draughtsmen are constantly required.

Superficial facts, such as these, while related are however unnecessary. The Honor Roll speaks eloquently for itself, denoting a splendid response to the call and a spirit of courageous and self-sacrificing loyalty. In compiling this list CONSTRUCTION is indebted to Mr. Alcide Chausse, Honorary Secretary of the Royal Architectural Institute of Canada, as well as to the secretaries of the certain provincial bodies, for much of the information published. It is to say the least an illuminating and inspiring record, one which Canada can proudly regard and which, through the magnificent spirit shown, does marked honor to the profession it represents.

Manitoba Association of Architects

The Monday luncheons of the Manitoba Association of Architects are now being held each week at the headquarters of the architectural department of the Manitoba University, Winnipeg, where accommodations have been provided by Prof. Stoughton, who has also invited the members to freely avail themselves of the books, plates and periodicals in the University Architectural Library, especially since the library of the association was lost in the recent burning of the Enderton Building, where the Association's rooms had been located for some years.

On the suggestion of Mr. W. P. Over, the association has decided to take up the question of memorials which will be promoted by public and private endeavor to commemorate incidents of local or national interest in the present war. In this connection the council has been directed to report on proposals of this kind as they arise, with a view to offering the co-operation of the association to existing and newly formed organizations having as their object the establishing of war memorials or the creation or stimulation of public sentiment regarding same.

Officers of the association for 1918 are: President, D. W. Bellhouse; vice-president, A. H. Wills; secretary-treasurer, E. Fitz Munn. Members of executive council: C. S. Bridgman, W. Fingland, L. H. Jordan, H. E. Mathews, W. P. Over, R. B. Pratt, and J. H. G. Russell.

The association will continue to send parcels to its members serving with the expeditionary forces in France as heretofore. There is also a probability of steps being taken toward establishing a foundation for a scholarship in connection with the University architectural course.

New York Store as Aerial Station

Aside from being responsible for the general introduction of hangars and other necessary types of field buildings, the war has so hastened the progress of aviation that the adoption of the aeroplane for practical utility and service other than that of a military character, gives rise to speculation as to what will be its ultimate effect on architecture, particularly as regards the congested areas of towns and cities.

More than ordinary interest, in fact, is attached to the official announcement that the United States Government will inaugurate its aerial mail delivery on April 1st, and this in turn has been promptly followed by the announcement of Gimbel Bros., New York, of their readiness to make the roof of their large departmental store at 33rd street and Sixth avenue available as a landing place for aeroplane conveyances. According to the management, the Gimbel roof is easily convertible for an aeroplane station as soon as an overhead route is established, and that the architect in planning the building had this idea stored for future application.

While plans have not as yet been drawn for the proposed station, it is nevertheless stated by the firm that the station is soon to be a reality. With the promises of certain revolutionary changes in delivery systems following the war, present conjectures are fast being shaped into tangible working schedules. The company's store is located in the heart of the shopping district, and its roof affords a large flat area adaptable for gliding and landing purposes.

Although a certain amount of enthusiasm on the part of the management which is displayed in the original news text of the announcement mentioned might be discounted on the grounds of advertising, there is plenty to indicate that the influence of the aeroplane on architectural possibilities has at least arrived. It indeed takes but little stretch of the imagination to mentally picture the aerial station and delivery system as an accomplished reality; and designers of more than ordinary vision have already given the subject a greater amount of thought and study than might at first seem apparent. At any rate the new Government aerial mail delivery venture will be well worth following, and may prove highly interesting in the changes it may lead to in the plan of future buildings.

Becomes Managing Director

Walter Baker Champ, who has for many years been secretary-treasurer of the Hamilton Bridge Works Co., Ltd., and who was last week elected managing director and secretary of the company, was born in Hamilton, March 23rd, 1874. His entire business career has been with the Hamilton Bridge Works Company, having



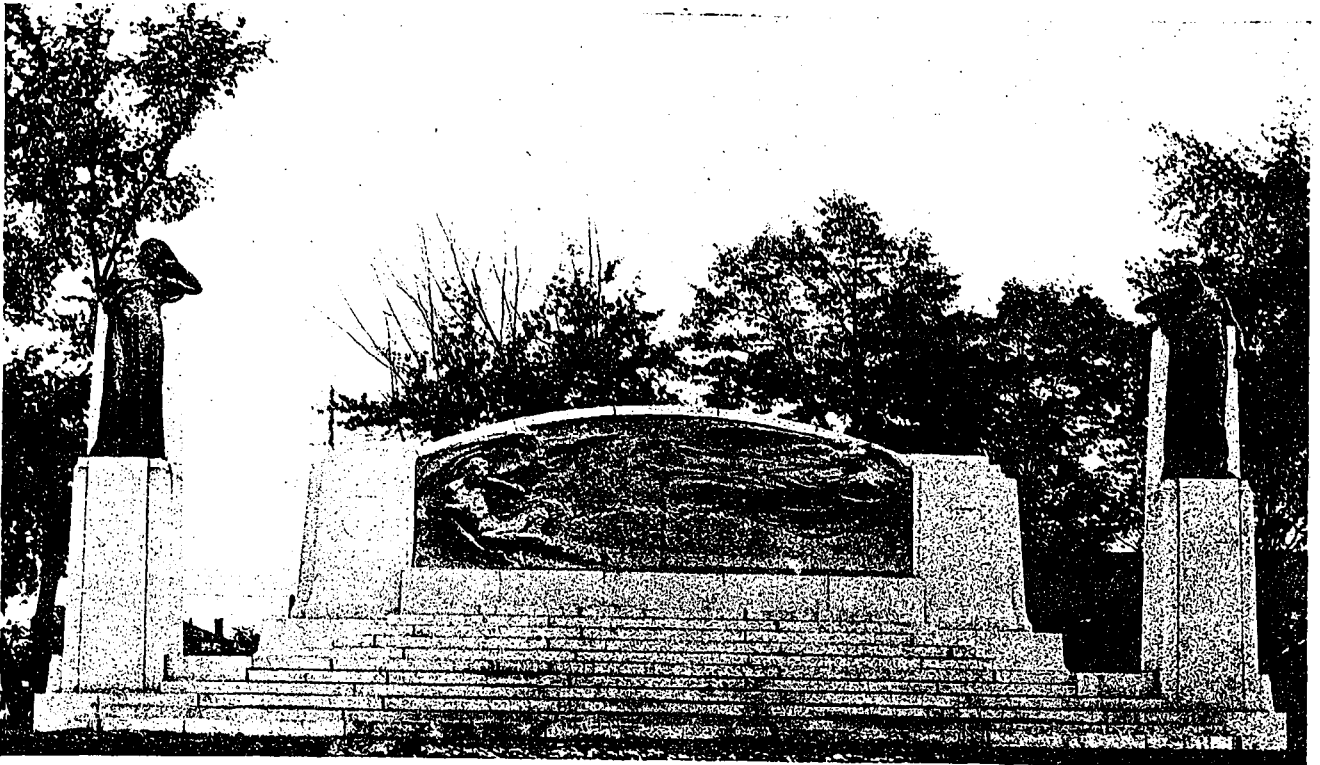
WALTER BAKER CHAMP, NEW MANAGING DIRECTOR HAMILTON BRIDGE WORKS CO.

joined that firm when he was only 17 years old. He was appointed treasurer of the company when only 24 years of age, and seven years later he was made secretary-treasurer. Mr. Champ has been a director of the company since 1910. He is a member of the Hamilton Board of Trade, and was president of that organization for the year 1909. He is a member of the Canadian Manufacturers' Association, and served on the executive council of that association from 1909 to 1912. As managing director of the Hamilton Bridge Works Co., Mr. Champ succeeds the late R. Maitland Roy, Men. Can. Soc. C. E. Mr. Champ has been acting manager of the company since Mr. Roy's death, in July, 1916.

Obituary

The death of Howard C. Stone, architect, which occurred at Montreal from pneumonia on February 14th, is a matter of deep regret to the architectural profession and his many personal friends. Mr. Stone was a native of Northampton, Mass., and came to Canada twenty years ago after first practicing in New York City. He enjoyed the confidence of a large clientele, and was responsible for a large number of commercial structures of diversified character. Among other buildings, he designed the head office of the Royal Bank of Canada, the Coristine and the Commercial Union buildings in Montreal, and the Maisonneuve factory of the United Shoe Machinery Company of Boston, Mass., and had charge of the remodelling of the head office of the Molsons Bank, and the Canada Steamship Company's office on Victoria Square, Montreal.





BELL MEMORIAL, BRANTFORD, ONT.

WALTER S. ALLWARD, SCULPTOR.

The Bell Memorial, Brantford. Ont.

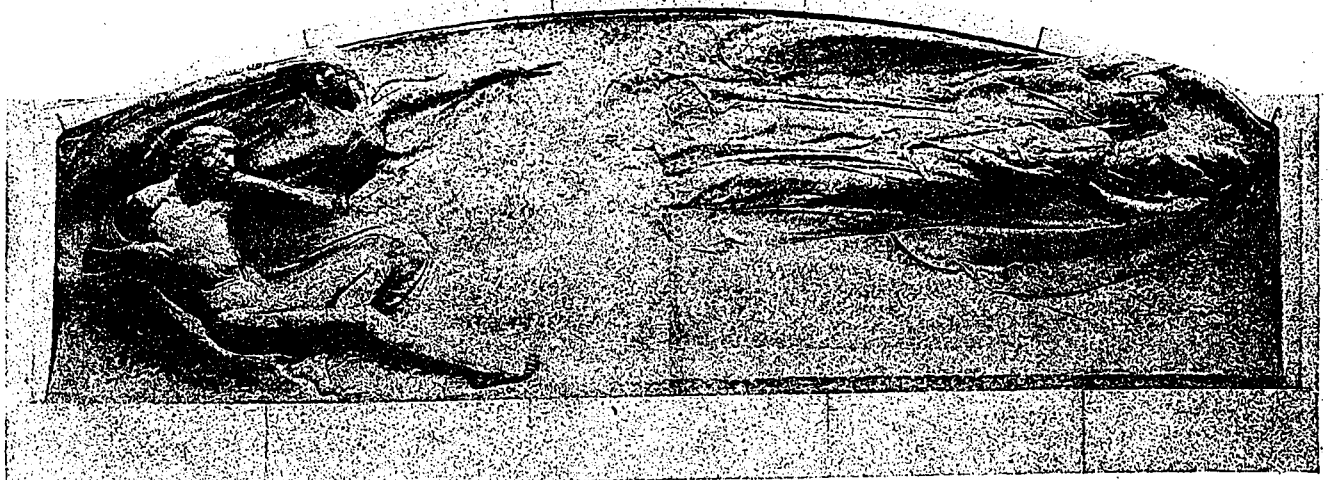
As an example of public monument design it would be difficult to find anything which shows a more interesting grasp of theme or a more artistic development of the subject than the work of Mr. Walter S. Allward, the eminent Canadian sculptor, as seen in the Bell Memorial recently unveiled at Brantford, Ontario.

One has been quite prepared through the previous efforts of Mr. Allward, such as his South African Memorial at Toronto, with its vigorous heroic figures, to expect something of unusual merit in anything he does; and this is strikingly manifest in this allegorical representation commemorating the great service which has been rendered to mankind through the invention of the telephone.

As a work of imaginative art it stands as an

exceptionally noteworthy production. The two figures in bronze, at either side, represent "Humanity" sending and receiving messages, while the bronze panel depicts "Man discovering his power to transmit vocal sounds through space." "Man" is surmounted by a figure symbolic of "Intelligence" with three floating messengers, "Knowledge," "Joy" and "Sorrow," completing the idea.

The unveiling of the monument at which His Excellency, the Duke of Devonshire, Governor-General of Canada, officiated, was the occasion of a notable gathering, including Dr. Alex. Graham Bell, of Washington, D.C., the inventor of the telephone. It not only establishes the claim of Brantford as being the birth-place of the telephone, according to Dr. Bell's own testimony, but gives to the place a public monument of which its citizens can be justly proud.



DETAIL OF BRONZE PANEL DEPICTING "MAN DISCOVERING HIS POWER TO TRANSMIT VOCAL SOUND THROUGH SPACE."

Canadian Building and Construction News

BUSINESS BUILDINGS.

London, Ont.—Smallman & Ingram, Dundas Street, will install an ornamental steel and iron balcony around the ground floor of their store. Cost \$5,000.

London, Ont.—Hyatt Bros., 238 Egerton Street, have the general contract for rebuilding business block recently damaged by fire at 1447 Dundas Street. Mrs. M. Barnes is the owner.

Montreal, Que.—Work is in progress on alterations to La Banque National, Montreal, to cost \$12,000. Alfred Meure, Montreal, is doing the plaster work, joinery and decorations, and Jobin & Genois, Quebec, Que., have the contract for the marble work. P. Levesque, 115 St. John Street, Quebec, Que., is the architect.

Moose Jaw, Sask.—Architects Storey and Van Egmond, Regina and Saskatoon, will invite tenders about April 1st, for the erection of a modern store building at this place to cost \$20,000.

Ottawa, Ont.—General alterations including the installation of a new shop front are at present being carried out for F. W. Carling, 126 Sparks Street. Richards & Abra, 126 Sparks Street, are the architects, and A. Christie & Sons, 353 Elgin Street, the general contractors. Cost \$3,000.

Pembroke, Ont.—A site has been purchased by the Merchants Bank of Canada for the erection of a building to cost \$20,000. It is understood that work on the structure will start this spring.

Toronto, Ont.—Work has started on a store and residence of brick construction to be built on Queen Street near Bellefair Avenue, for G. E. Young, 2010½ Queen Street East. Cost \$5,000.

CHURCHES AND SCHOOLS.

Almonte, Ont.—Tenders have been received by B. Williams, Chairman of the Property Committee of the School Board for the installation of a steam or hot water system to heat eight rooms and two halls at the Martin Street School.

Brantford, Ont.—The Public School Trustees and the City and County Councils are considering the establishing of a number of continuation schools through the county.

Highland Creek, Ont.—James, Loudon & Hertzberg, Excelsior Life Building, Toronto, have completed plans for a two-roomed school of brick construction, 64 x 40, to be erected by the local School Board. The building will cost \$12,000, and the brick has already been purchased.

Mimburn, Alta.—Tenders have just closed for the erection of a brick veneer church for the Mimburn Union Congregation.

Mount Dennis, Ont.—Tenders will be received until March 27th, for the erection of a six-roomed brick school addition for School Section, No. 28, York. Ellis & Ellis, Manning Chambers, Toronto, are the architects. Secretary S. McCormack, Silverthorn Avenue, Sub. Station 72, Toronto, can be addressed.

Pabos, Que.—Architect Pierre Levesque, 115 St. John Street, Quebec, Que., has completed plans for a presbytery to be erected for the Rev. Victor Case. The building will be of brick construction, modernly equipped and cost \$8,000.

St. Pamphile, Que.—Architect Pierre Levesque, 115 St. John Street, Quebec, Que., has completed plans for a frame addition to the Roman Catholic Church at this place, to cost \$12,000.

St. Catharines, Ont.—Plans are being revised and new tenders will be called shortly for the proposed brick church and Sunday School to be erected by the Niagara Street Methodist Congregation. T. W. Wiley, is the architect.

Thornhill, Ont.—The Board of School Trustees are contemplating the erection of a three-roomed brick school to cost \$15,000. Plans for the structure have been completed by architects James, Loudon & Hertzberg, Excelsior Life Building, Toronto. The work will likely start this spring.

CLUBS AND HOSPITALS.

Brantford, Ont.—The erection of an addition to the nurses home of the General Hospital, is contemplated.

Fort Qu' Appelle, Sask.—Tenders are to be called this month for several new buildings to be erected in connection with the Saskatchewan Tuberculosis Sanitarium. These will include an infirmary, three cottages, pavilions, together with the installation of new steam boiler, engine and generator. Estimated cost of improvements, \$250,000. Storey & Van Egmond, Regina and Saskatoon, are the architects.

Hamilton, Ont.—Supplementary estimates submitted to the Ontario Legislature include the following items for improvements to the hospital for Insane: \$40,000 for erecting new addition; \$10,000 for new boiler house; \$3,000 for fire alarm system.

Petrolia, Ont.—The Petrolia Hospital Trust, has just closed tenders for the erection of a brick hospital addition to cost \$15,000. J. M. Moore, 418 Richmond Street, London, Ontario, is the architect.

Woodstock, Ont.—Estimates submitted to the Ontario Legislature include two items providing for the erection of the following buildings in connection with the Woodstock Epileptic Hospital: \$41,000 for the work-shop and store-room; \$10,660 for laundry.

FACTORIES AND WAREHOUSES.

Brockville, Ont.—Tenders have closed for a printing plant to be erected on King Street West, for the Recorder Printing Company. B. Dillon, Brockville, is the architect.

Campbellford, Ont.—The Northumberland Paper & Electric Company, will remodel and enlarge building recently damaged by fire.

Guelph, Ont.—Work is in progress on a brick factory addition for the White Sewing Machine Company of Canada, Suffolk St., to cost \$12,000. Geo. A. Scroggie, 400 Woolwich Street, has the contract.

Listowel, Ont.—Plans have been completed for a one-story, 50 x 100, dye house to be erected for the Perfect Knit Mills Company. Cost \$50,000.

London, Ont.—The London Soap Company, Ottawa Avenue, will erect a brick factory addition to cost \$3,000.

London, Ont.—Architect A. E. Nutter, Dominion Savings Bldg., has completed plans for a factory addition of brick construction for the Peerless Hosiery Company. Cost \$20,000.

Omamee, Ont.—Plans have been completed for remodelling tannery at this place for Chas. Parson & Son, 79 Front St. E., Toronto. The alterations to building and new machinery equipment will cost in the neighborhood of \$100,000.

Tillsonburg, Ont.—The Huntley Mfg. Company will immediately rebuild their plant recently destroyed by fire. The loss on building and machinery is estimated at \$100,000.

Toronto, Ont.—Work has started on the erection of a four-storey warehouse of mill construction on Orillia Street for Bowes & Company, Limited, 74 Front Street East. Thos. Essery, Confederation Life Building, has the general contract. Cost \$25,000.

Toronto, Ont.—Architects Hynes, Feldman & Watson, 105 Bond Street, have awarded the following contracts for a four-storey, 56 x 135, reinforced concrete warehouse to be erected at Wellington and Portland Streets: Mason, H. N. Dancy & Sons, C.P.R. Building; carpenter work, Fred Wilson; sheet metal, A. Mathews Company, 256 Adelaide Street West; steel sash, Trussed Concrete Steel Company, 34 King Street West; painting and glazing, R. A. Dale, 98 Castle Frank Road; elevators, Turnbull Elevator Company, 126 John Street.

MISCELLANEOUS.

Fort William, Ont.—Supplementary estimates submitted to the Ontario Legislature, provide for improvements and additions at Industrial Farm, \$3,000; improvements to camp buildings, \$15,000; improvements to water supply and sewerage disposal system, \$2,500; improvements in heating to Court House and Jail (Re-vote) \$2,500.

Hamilton, Ont.—The City Council has voted to rebuild the Market Hall recently destroyed by fire. The walls of the old building will be utilized and refrigerating machinery will be installed.

Ingersoll, Ont.—M. J. Clear, will erect a two-storey brick and cement garage at King and Oxford Streets, to cost \$10,000.

Kenora, Ont.—Supplementary estimates submitted to the Ontario Legislature includes the following items for improvements at this place: repairs to court house, jail and registry office, \$1,450; painting exterior and interior of court house, \$1,000.

London, Ont.—Tenders are to be invited immediately for the erection of a modern bank and office building for the Huron & Erie Corporation Company. Watt & Blackwell, are the architects.

Ojibway, Ont.—The Canadian Steel Corporation, will construct an independent water works system having a daily capacity of seven million gallons.

Ottawa, Ont.—Tenders will be received until March 26th, by the Board of Control, for safety gates in connection with the Pretoria Avenue Bridge.

Ottawa, Ont.—Plans have been completed for a two-storey brick dwelling to be erected on Broadway, for W. H. Lee, 36 Barton Street. Cost \$4,500.

Ottawa, Ont.—Tenders will be received until March 25th, for supplying switch boards, panel board and transformers, required in the reconstruction of the Parliament Buildings.

Ottawa, Ont.—A. Proul, has the contract for general alterations including a new roof to stores and apartments on St. Andrews Str. E. for W. J. Baskerville, 53 George Street. Cost \$9,000.

Ottawa, Ont.—N. Hollister, 512 Bay Street, has the contract for altering dwelling into apartments at the corner of Slater and Bay Street. Cost \$10,000. Dr. Jurvet, Canada Life Building, is the owner.

Ottawa, Ont.—Alex. Garvock, 136 Lewis Street, has the general contract for the erection of a reinforced concrete warehouse to cost \$50,000 for A. L. Florence & Son. Millson & Burgess, Union Bank Building, are the architects.

Ottawa, Ont.—The Department of Public Works, will receive tenders until April 11th, for the electric wire and cable required in the reconstruction of the Parliament Buildings. Specifications may be obtained at the office of P. Lyall & Sons, Construction Company, Ottawa.

Toronto, Ont.—Tenders will be received until March 30th, for the following water works materials required by the Township of York, 420, twelve-inch cast iron pipes; 1000 six-inch cast iron pipes; 200 cast iron specials; 112 hydrants; 15 twelve-inch gate valves; 1000 six-inch gate valves. Further information may be obtained from Frank Barber, Engineer, 40 Jarvis Street.

PUBLIC BUILDINGS.

Ottawa, Ont.—The Department of Public Works will receive tenders until April 2nd, for the construction of the proposed Government Office Building, to be built on O'Connor Street, at a cost of \$1,000,000. Plans, etc., may be obtained at the office of the Chief Architect of the above department; Overseer of Dominion Buildings, Central Post Office, Montreal; and at Postal Station "F," Toronto.

Farnham, Que.—Tenders closed March 14th, for an addition and alterations to the post office building at this place.

RESIDENCES.

London, Ont.—Plans have been completed for a \$3,000 frame residence to be erected for J. Hancock, Briscoe Street.

Ottawa, Ont.—Roger Lean, 357 Arlington Avenue, has had plans prepared for a two-storey, 16 x 34/brick veneer residence to be built on Bronson Avenue.

Renfrew, Ont.—Henry David, 465 Raglan Street, will erect a dwelling on Lochiel Street, to cost \$5,000. A residence is also to be built by Chas. McD. Logan, of the Renfrew Knitting Company, at the corner of Hinch and Victoria Streets, to cost \$3,000.



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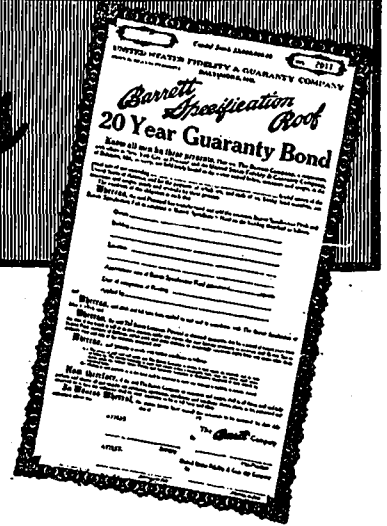
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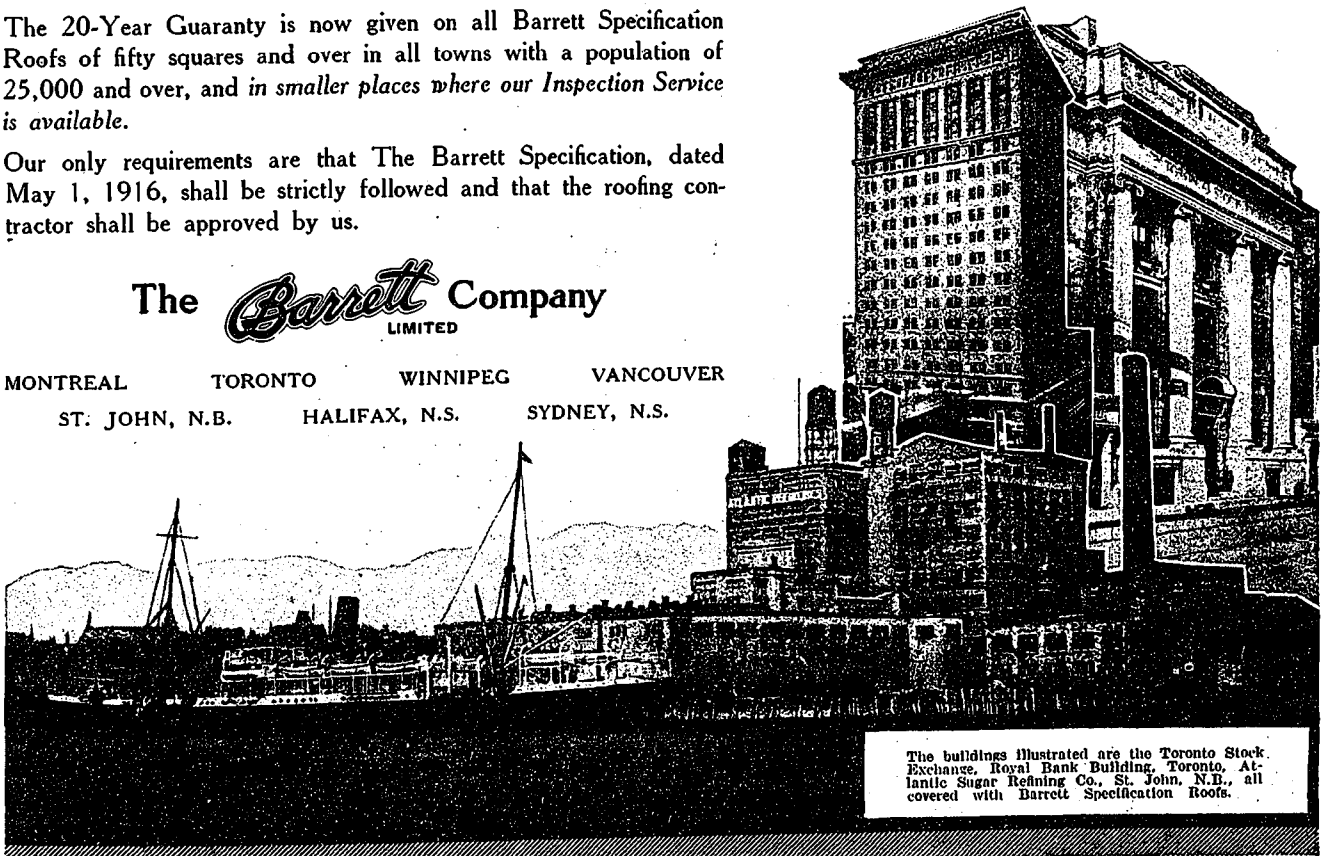
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The buildings illustrated are the Toronto Stock Exchange, Royal Bank Building, Toronto, Atlantic Sugar Refining Co., St. John, N.B., all covered with Barrett Specification Roofs.

Toronto, Ont.—J. Cooper, 51 Fulton Avenue, will erect a duplex house and garage of brick construction on Jackman Avenue, to cost 5,000. P. H. Finney, 79 Adelaide Street, is the architect.

Toronto, Ont.—Architect P. H. Finney, 79 Adelaide Street East, has completed plans for a four-storey brick apartment house to be erected on Tennis Avenue, for the City Homes Limited, 58 Hogarth Avenue.

THEATRES AND HOTELS.

Moose Jaw, Sask.—Architects, Storey & Van Egmond, Regina and Saskatoon, have received tenders for removing stage and making general alterations at the Allen Theatre. The work will cost \$5,000.

Regina, Sask.—Architects Storey & Van Egmond, have just closed tenders for a \$40,000 addition to be built to the Kitchener Hotel. New steam boiler, elevator, pneumatic pressure tank, steam heating, plumbing, laundry and kitchen equipment will be installed.

LATE BUILDING ITEMS.

Guelph, Ont.—A. B. Clark, 40 Omar street, has the contract for erecting a brick residence on Paisley street, for J. A. Johnson, temporary place. Cost \$5,000.

Guelph, Ont.—A. B. Clark, 40 Omar street, has the contract for the erection of a brick residence on Heain avenue, for John Henry, Lambourgh road. Cost \$3,000. The contractor will also erect a brick house for himself on Paisley road.

Horton Township, Ont.—Oliver McQuitty, Renfrew, R.M.D., will erect a brick veneer residence to cost \$3,500.

Kingston, Ont.—The Central School on Sydenham street, has been damaged by fire to the extent of \$7,000.

London, Ont.—The Western Fair Board, Dominion Savings Building, will invite tenders about April 1st, for the erection of a concrete viaduct to cost \$10,000. A. M. Hunt, Secretary.

London, Ont.—The Bank of British North America will shortly erect an addition to their premises at Market Square to cost \$25,000. J. N. Moore, Richmond street, is the architect.

London, Ont.—John Hayman & Sons, 432 Wellington street, will shortly erect a four-storey apartment house of brick construction to cost \$50,000. The owners are the general contractors.

London, Ont.—Architects Watt & Blackwell, Dominion Savings Building, have plans ready and expect to call for tenders shortly for the erection of a building for the Huron and Erie Mortgage Company.

Ottawa, Ont.—J. C. Lowe, 353 Lisgar street, has the contract for constructing a new roof and making general repairs to store building on Sparks street, owned by the H. B. Brennan Estate. Cost \$3,000.

Renfrew, Ont.—Alex. W. Eastman is contemplating the erection of a bungalow of brick construction on Lyn street, to cost \$3,500.

Renfrew, Ont.—Harry Totten is contemplating the erection of a brick veneer residence at Jermain and Arnprior streets to cost \$4,500.

Toronto, Ont.—Plans have been prepared for a modern ge-storey building to be erected on Yonge street, near King, for Fairweather's, Ltd., 84 Yonge street. Charles S. Cobb, 71 Bay street, is the architect.

Toronto, Ont.—The Toronto and Hamilton Highway Commission, 49 Wellington street east, will receive tenders until April 2nd, for the erection of bridge over Mimico Creek, Etobicoke Creek, Credit River and Bronte Creek. Tenders will be received on both concrete and steel structures. Plans are on file with Chief Engineer at the above address, and at the office the City Engineer, Hamilton.

OPEN MONTREAL SALES OFFICE.

MacKinnon, Holmes & Co., Limited, of Sherbrooke, Que., have opened a sales office at 404 New Birke Building, Montreal, Que., Mr. W. J. Lochhead being in charge.

CATALOGUES and BOOKLETS

CATALOGUES WANTED.

The Vocational Training Branch of the Military Hospitals Commission, Toronto, is desirous of obtaining catalogues covering the various lines of building materials, equipment, and appliances. Address, C. M. Canniff, for Vocational Officer for Ontario, Military Hospitals Commission, Toronto.

VOKES HARDWARE COMPANY EXPANDS.

The Vokes Hardware Company, Toronto, have purchased the entire stock of mantels, tiles and grates carried by the T. Eaton Company, Toronto, who have been important contractors in this field for several years. This addition to the Vokes Hardware Company's already well established fireplace business will give them front rank among Canadian firms in this branch of building work.

"PUMPS FOR ANY SERVICE"

This is the title of an 84 page catalogue just issued by Darling Brothers, Limited, Engineers and Steam Specialists, 120 Prince Street, Montreal. It describes in detail, both in illustrations and text, the many and varied lines of pumps and compressors manufactured by this firm. It also contains several pages dealing with important information for the benefit of intending purchasers of pumps. The book is excellently printed and is a credit in every way to the above firm.

THE DIGEST.

This is the title of a most complete little house organ which has just been received from Darling Bros., Limited, Montreal. It is a carefully edited, attractively printed, fourteen-page magazine containing much useful information and is to be published hereafter by the company monthly. The present issue has a

department of live editorial comment and instructive articles on "Relative Merits of Hot Water and Steam Heating," "Pushing Production," and other subjects. Judging from the appearance of No. 1, volume No. 1, "The Digest" will prove of constant value to architects and others interested in steam appliances and future numbers will likely be in considerable demand.

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The extent to which sanitary features enter into the construction of modern hospitals, factories, hotels, restaurants and other types of buildings naturally creates a demand for any material which can be successfully used for this purpose. Because of this "Vitrolite" lays claim to special attention and this seems justified by the many evidences of its advantages and wide-spread application. It is produced with a natural fire polished surface that is non-porous and will not craze, and its depth of rich, white color gives it an appearance of wholesome cleanliness that completes its sanitary qualities. In modern hospitals where there is an insistent demand for asepsis in the wall surfaces and equipment of operating, diet, and utility rooms it admirably fulfills every requirement. "Vitrolite" is also largely used for toilet and shower partitions, wainscoting in offices, public buildings and residences, and for sanitary factory purposes.

One advantage is that it can be installed in large slabs so that seams and joints are reduced to a minimum. It can also be supplied in decorative and color effects for friezes and borders in restaurants and lunch rooms, and produces an artistic and pleasing appearance. A large number of illustrations showing the practical application in buildings of various types together with valuable information relative to its many excellent qualities, is contained in a twenty-four page booklet issued by the Vitrolite Company, Chamber of Commerce Building, Chicago, and will gladly be sent to any interested party.

CONTRACTORS and SUB-CONTRACTORS

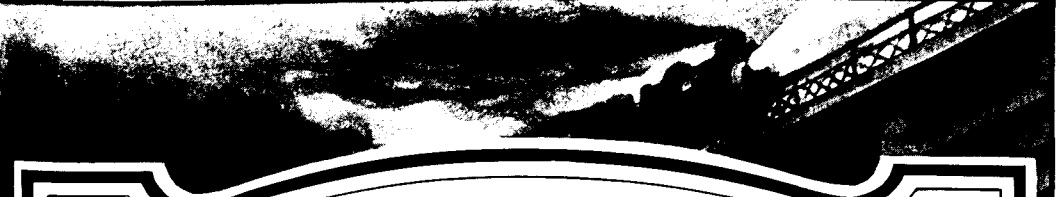
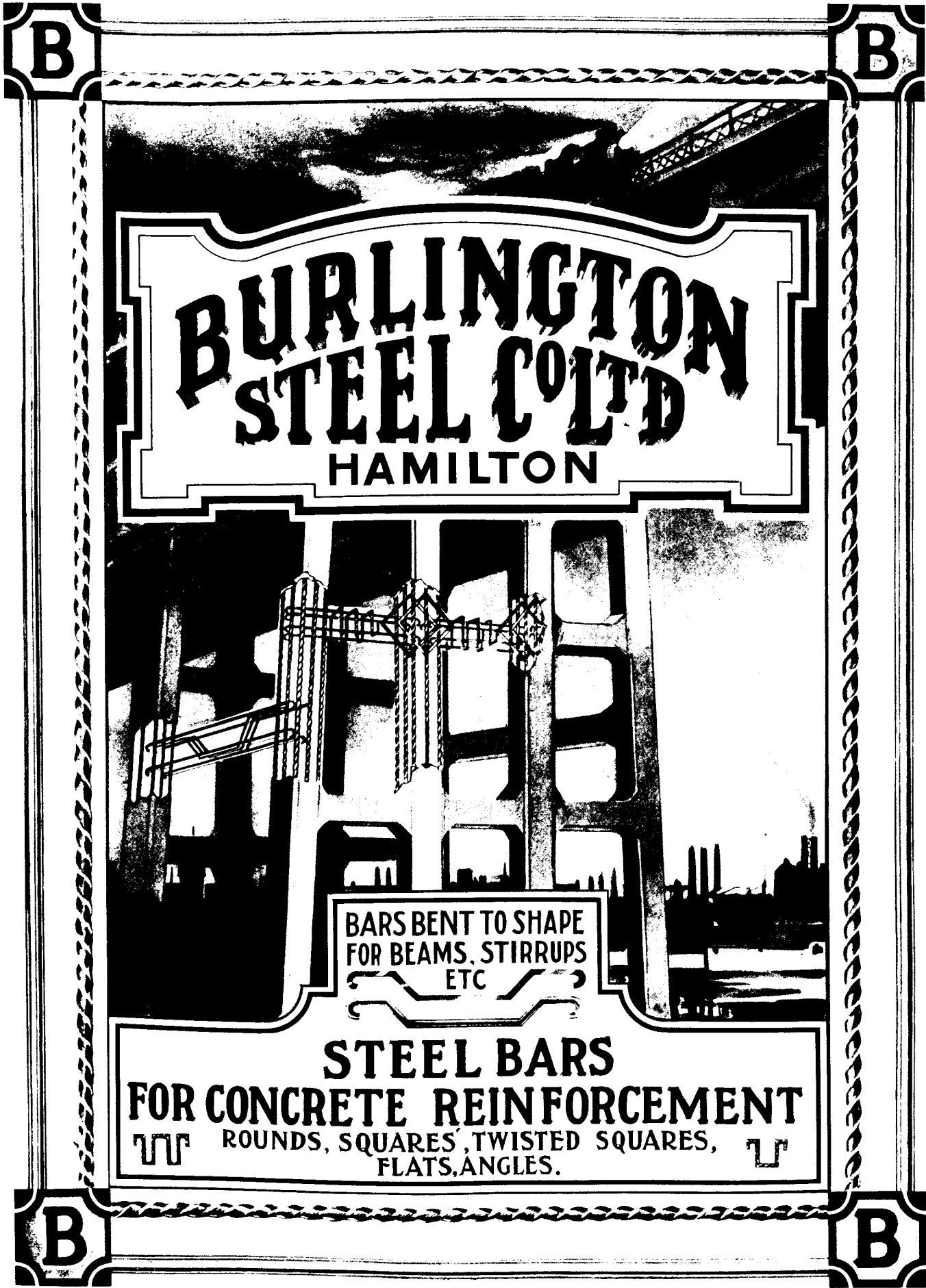
As Supplied by The Architects of Buildings
Featured in This Issue

Dominion Power and Transmission Company's Power Station,
Hamilton.

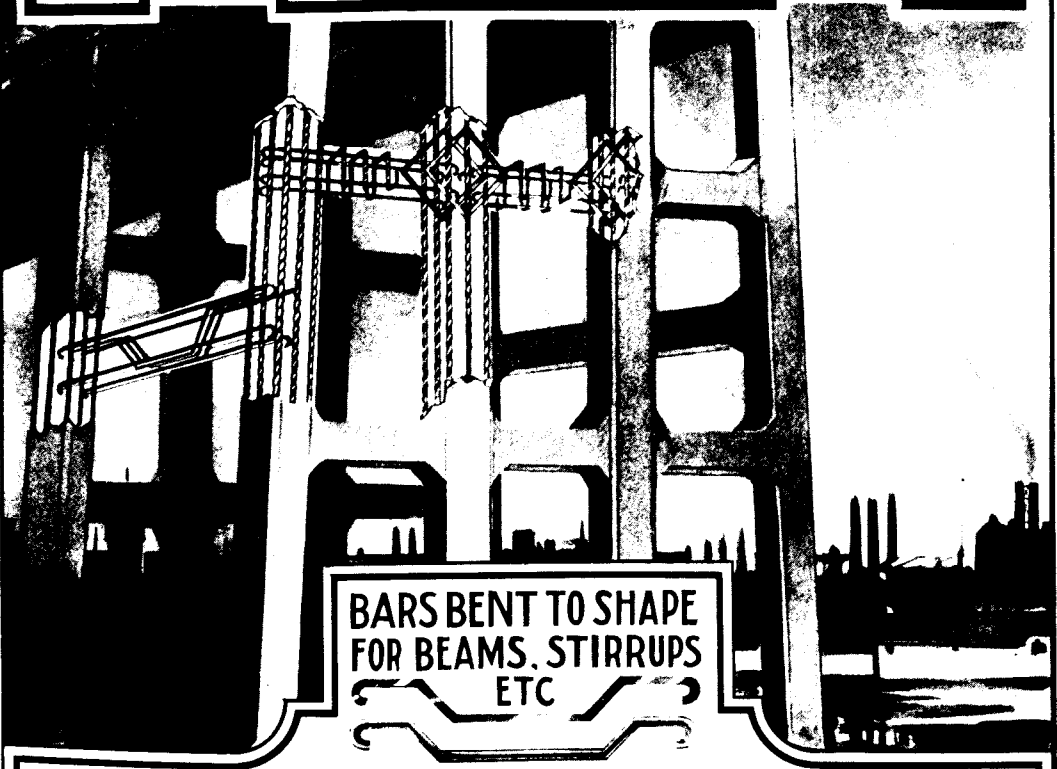
Air Blast Piping, Thos. Irwin & Sons.
Air washers, Carrier Air Conditioning Co.
Asbestos Barriers, Canadian H. W. Johns-Manville Co.
Boilers, Hoge Moor Boiler Co.
Brick, American Enamelled Brick Co.
Brick, Canadian Pressed Brick Co.
Brick, Kittinging Brick & Fire Clay Co.
Cement, Alfred Rogers.
Cement, Canada Cement Co.
Cole Elevators, C. U. Bartlett & Snow Co.
Conduits, Crouse-Hinds Co.
Electrical Equipment, Canadian Westinghouse Co.
Expanded Metal, Trussed Concrete Steel Co.
Feed Water Heaters, Canadian Aldis Chalmers Co.
Fire Brick, Elk Hire Brick Co.
Fire Doors, Jos. Riddell & Sons.
Floor Tiling, Kent-Garvin Co.
General Contractors, Dominion Power & Transmission Co.
Glass, Hamilton Mirror and Plate Co.
High Pressure Piping, Canadian Kellogg Co.
Hollow Tile, National Fire Roofing Co.
Insulating Brick, Armstrong Cork and Insulating Co.
Insulators, Canadian Porcelain Co.
Locomotive Crane, Brown Hoisting Co.
Metropolitan Roofing, Keystone Fire Roofing Co.
Oil Treating Outfit, S. F. Bowser Co.
Paints, Jas. Langmuir Co.
Pipe Covering, Armstrong Cork & Insulating Co.
Radiators, Dominion Radiator Co.
Roofing, F. W. Bird & Son.
Roof Insulator, Ohio Brass Company.
Small Pumps, Smart Turner Machine Co.
Smoke Stacks, Canadian Kellogg Co.
Steel Sash, A. B. Ormsby Co.
Stoker, American Engineering Co.
Structural Steel, Hamilton Bridge Co.
Terra Cotta, North Western Terra Cotta Co.
Travelling Crane, Cleveland Engineering Co.
Valves, Chapman Valve Co.
Valves, Jenkins Bros.
Water Treating Equipment, W. B. Scaife & Sons.

The T. Eaton Company's Factory.

Brick contractors, Thompson Bros.
Brick, exterior, Price Bros.
Brick, interior, Don Valley Brick Works.
Cement, Canada Cement Co.
Concrete Stairway, Mason Safety Tread.
Concrete Work, Raymond Construction Co.
Conduits, Crouse-Hinds Company.
Door Checks, Yale & Towne Ltd.
Elevators, Otis-Fensom Elevator Co.
Elevator Equipment, Canadian Elevator Equipment Company.
Fire Doors, A. B. Ormsby Co.
Fire Extinguisher, Victor Fire Extinguisher Co.
Floor Hardener, Master Builders Co.
Flooring, Seaman-Kent Co.
Floors, terrazzo, Italian Mosaic & Tile Co.,
Fuses, Detroit Fuse Mfg. Company.
Glass, Imperial Glass Co.
Iron Railings, etc., Architectural Bronze & Iron Works.
Kalamined Doors, A. B. Ormsby Co.
Marble, Vermont Marble Co.
Motors, Canadian Westinghouse Co.
Plastering, A. D. Grant.
Plumbing, Kelth's Limited.
Radiators, Dominion Radiator Co.
Refrigerating equipment and sterilizing water plant, Canadian Ice Machine Co.
Reinforcing Steel—Eaines & Peckover.
Roofing, A. B. Ormsby Co.
Steel Sash, A. B. Ormsby Co.
Stone contractors, Nicholson & Curtiss.
Stone, Indiana Limestone Co.
Stone, Queenston Quarry Company.
Sprinkler equipment, Canadian General Fire Extinguisher Co.
Structural steel, McGregor & McIntyre.
Terra Cotta, Atlantic Terra Cotta Company.
Time clocks, International Business Machines.



BURLINGTON STEEL CO LTD HAMILTON



BARS BENT TO SHAPE
FOR BEAMS, STIRRUPS
ETC

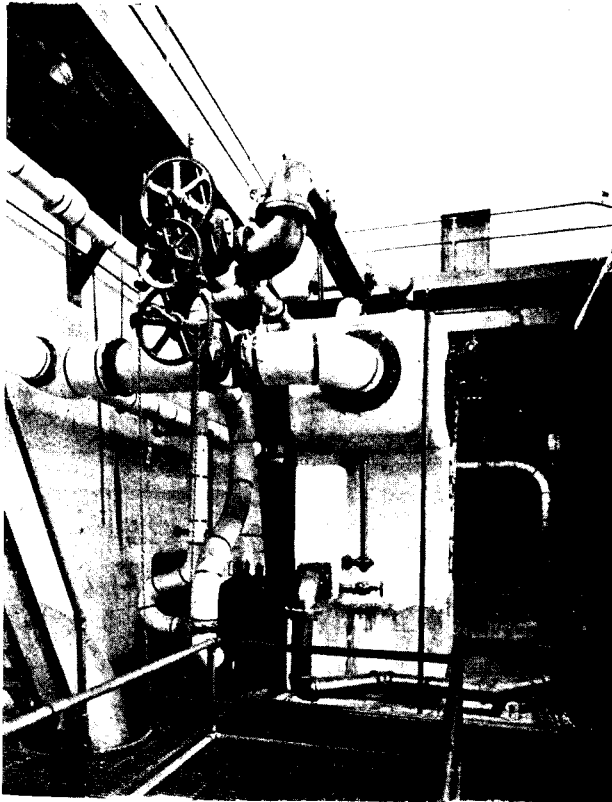
STEEL BARS FOR CONCRETE REINFORCEMENT

U ROUNDS, SQUARES, TWISTED SQUARES, U
FLATS, ANGLES.

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