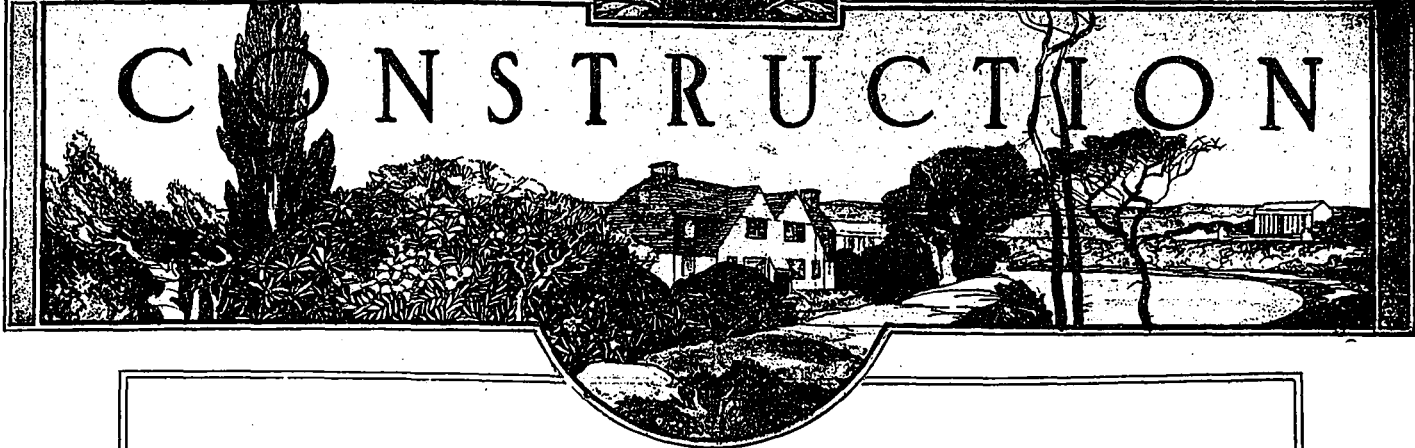


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CONSTRUCTION



April, 1919

Volume XII, No. 4

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H. GAGNIER, Limited, Publishers

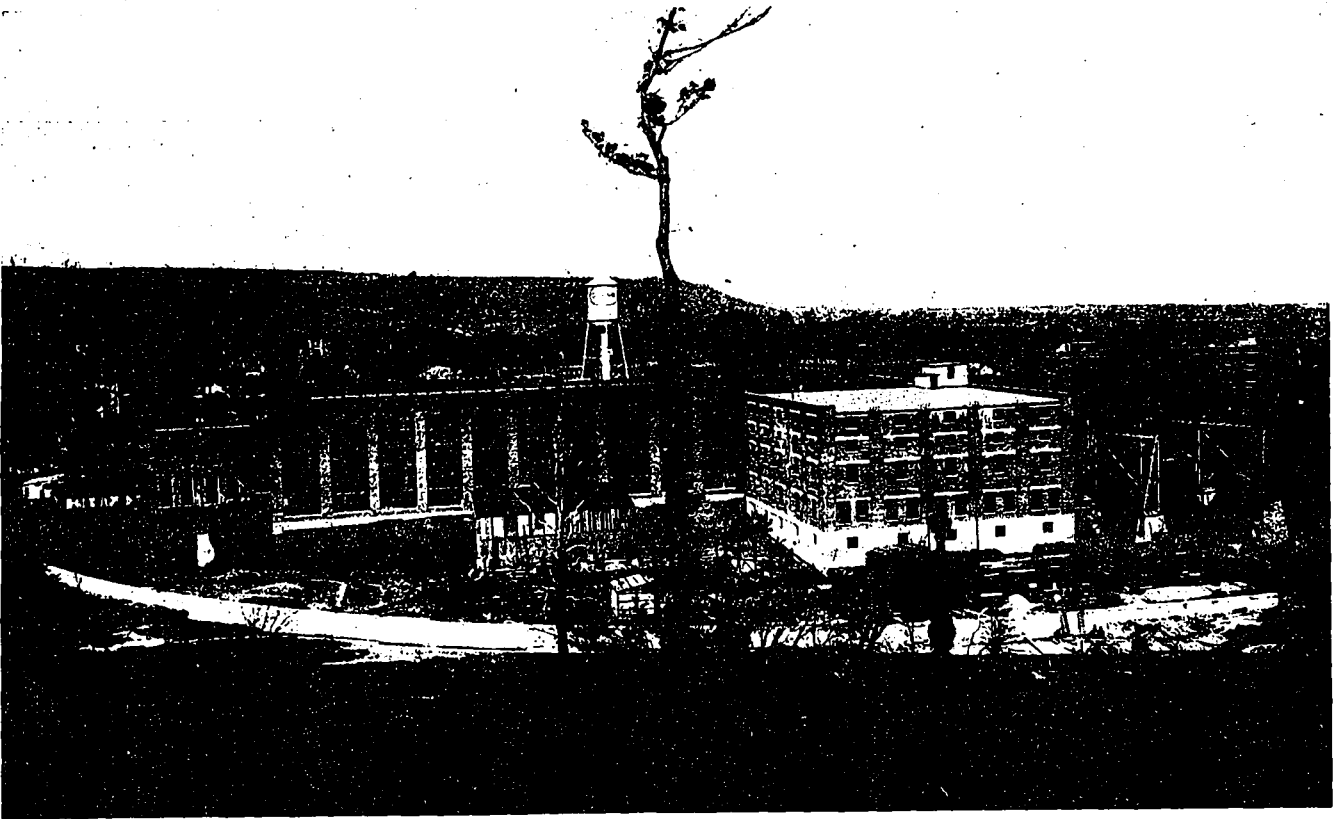
GRAPHIC ARTS BLDG., TORONTO, CANADA

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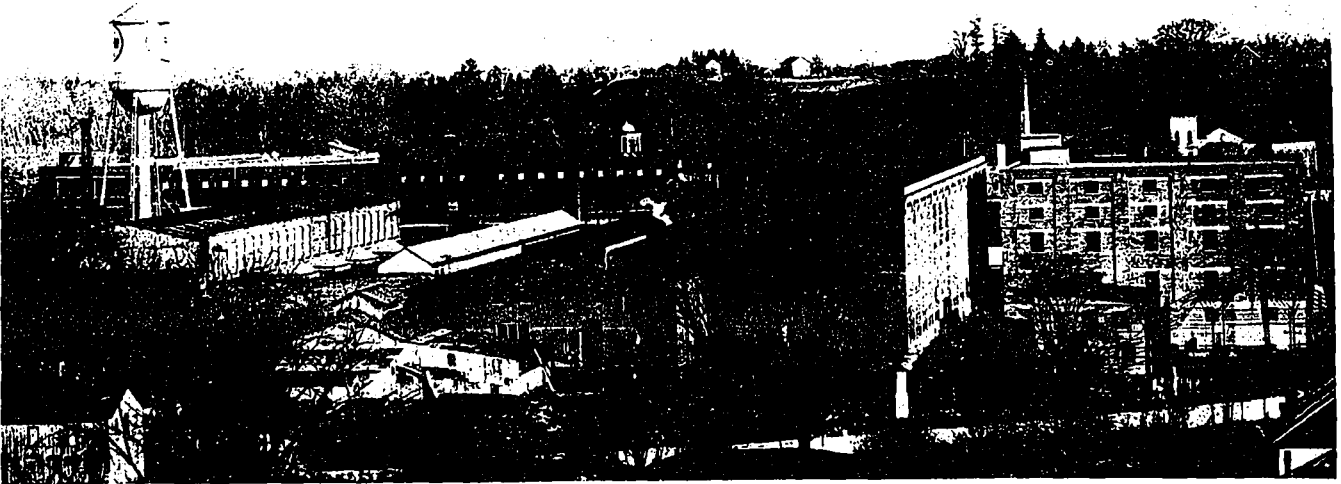
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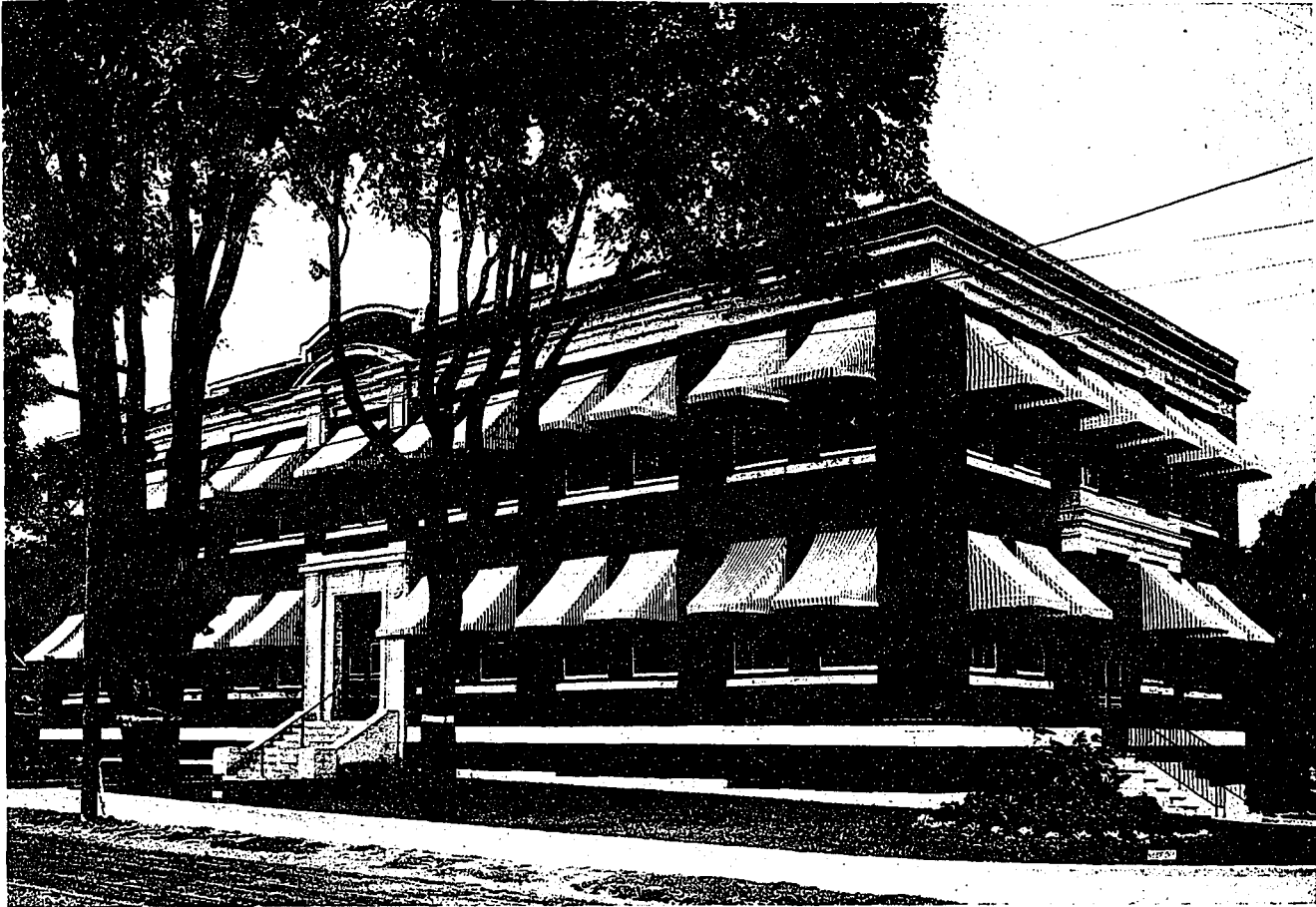


GENERAL VIEW FROM THE SOUTH-WEST.



LOOKING TOWARD THE EAST.

PLANT OF BERTRAM & SONS COMPANY, DUNDAS, ONT.



OFFICE BUILDING OF JOHN BERTRAM & SONS COMPANY, DUNDAS, ONT. HARRIS & RICHARDS, ARCHITECTS.

The Bertram and Pratt & Whitney Plants

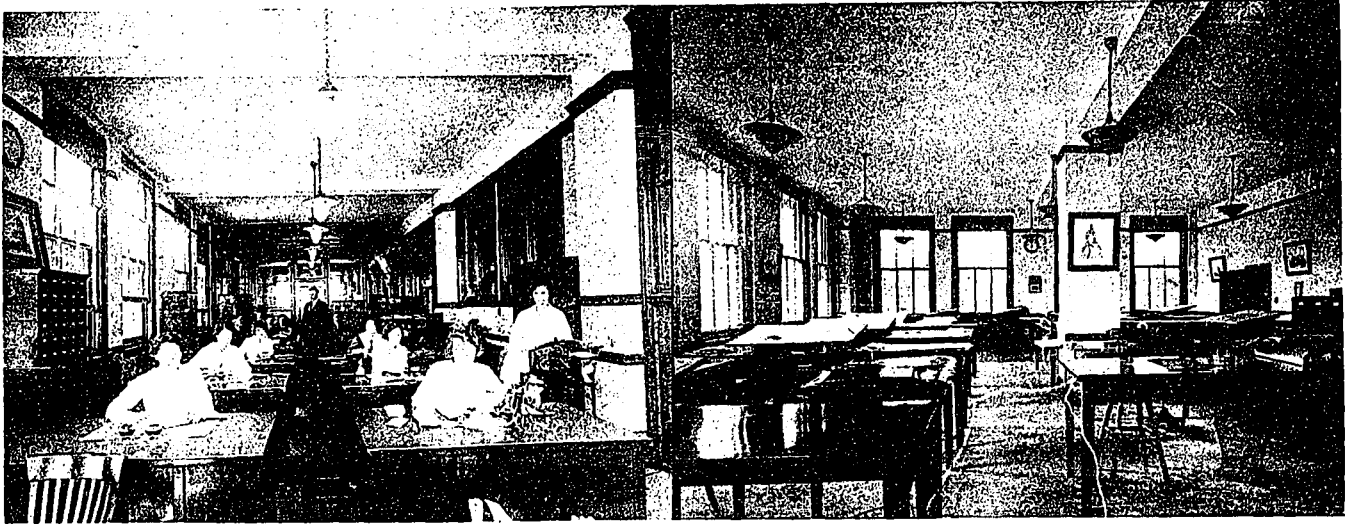
DUNDAS, Ontario, has the appearance of a quiet and peaceful valley town, which at casual glance somewhat obscures its industrial prestige. Yet very little investigation reveals plenty of evidence of manufacturing activity. Its two most important firms—John Bertram & Sons, Limited, and the Pratt & Whitney Company—have achieved a prominence as producers of heavy machinery and small precision tools, respectively, which makes them nationally known. The plants of both of these concerns, which are two separate companies under one management, have within the past two years been enlarged to about three times their original size. War orders and the growth of normal trade have made necessary this additional capacity, which in the case of the Bertram plant takes the form of a new lathe shop and storage building, each 320 x 60 feet; a pattern storage building, 102 x 102 feet, and a modern office building, 113 x 55 feet.

These additions have necessitated very careful planning so as to bring the several departments in proper relation to one another, and to provide for a direct routing of the work through the plant. The key of the plan is really an industrial track connecting with the foundry

and running through transversely at the centre of the main buildings. This track is served by travelling cranes which do all the heavy lifting and operate the full length in each bay of the various shops. Each casting or part is thus quickly and conveniently handled through the entire process until the finished work finds itself either in the storage building or is placed on the cars ready for shipment.

In addition to this, there is an outside or yard crane of twenty ton capacity travelling on "A" frames, 32 feet high with 60 ft. spans, and having a total length of 400 feet, which serves each of the several structures.

While the Bertram Company has up to recently been engaged in filling important war contracts, it has for fifty years specialized in the manufacture of locomotive and car shop equipment, structural and bridge shop machinery, and repair and general machine shop equipment. It is for the purpose of enlarging the output in these permanent lines that the facilities of the plant have been increased. Besides the several new buildings, the original plant itself has been enlarged, and further additions will shortly be required in view of the present inadequacy of the existing foundry and power



TIME OFFICE. DRAUGHTING ROOM.
OFFICE BUILDING OF JOHN BERTRAM & SON COMPANY, DUNDAS, ONT.

house, which are heavily taxed by present operations.

The recently constructed buildings are all south of the old portion of the plant. The new lathe shop and the permanent storage building each cover a ground area of 320 x 60 feet, and are built of steel and brick, with concrete floors having three-inch wood blocks laid in pitch. These blocks were laid with no filler between them owing to the trouble which swelling pitch often gives in warm weather. The spaces, or interstices, have been simply allowed to fill up with fine shop turnings and oil, and make a floor with a firm, smooth surface.

The roof of the lathe shop is of the saw-tooth type, while that of the storage building is of

three-inch hollow tile, carried on a steel truss and flushed with 2-1 concrete, having a mesh reinforcement which was supplied in 6 ft. rolls. On the south side of the storage building are two galleries 24 ft. wide, running practically the full length of the structure. The floors of these galleries are of one-inch maple, laid on 2 x 4's, nailed together on edge and supported by a 20-inch steel I-beam framework. This storage is used for the storing of finished machines and machine parts, and also as a general stock and shipping-room. It has a 30-ton weighing scale and a 25-ton crane. The upper gallery is recessed at the centre to allow space for crane operations, so that any article of machinery can be laid on the first gallery floor and run either way. In addition to this, the wood railing of the upper gallery is removable for its entire length, which allows the crane to serve this floor at any point.

This storage building has excellent facilities for lighting and natural ventilation, which is, indeed, a noticeable feature of the plant throughout. In this structure, however, the entire south wall, as well as the space rising above the lathe shop, consists of a continuous system of metal sash and wired glass. One can perhaps best realize the expanse of this glass area by taking into account the fact that, in addition to its extreme



AUTOMATIC TELEPHONE SYSTEM.



PROGRESS VIEW SHOWING GYPSUM BLOCK PARTITIONS AND HOLLOW TILE FLOORS WITH CINDER FILL AND NAILING STRIPS FOR HARDWOOD FINISH. OFFICE BUILDING OF JOHN BERTRAM & SONS COMPANY, DUNDAS, ONT.

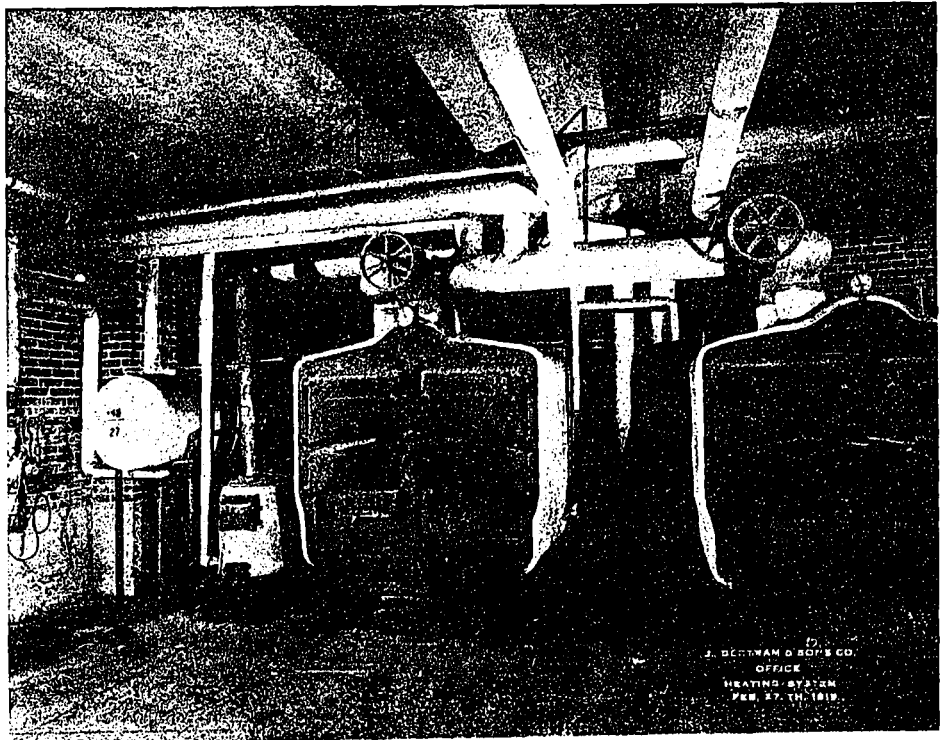
length, the building is 60 ft. high. The lower sash is of the counterbalanced type, while above this are alternating rows of fixed and operating frames, the latter being controlled by chains at the floor level.

The new pattern storage building is located at the south end of the property, and is 102x102 ft. and four storeys high. It is constructed of concrete, reinforced with twisted bars according to the two-way system, and is designed to carry two additional floors. Gypsum blocks are used where partitions are required. On the ground floor is a shop 102 x 40 ft. for making patterns, and a brick-paved driveway, which enables the yard teams to load and unload inside the building. The upper floors, which are served by an electric elevator, are used entirely for the storage of stock and special patterns.

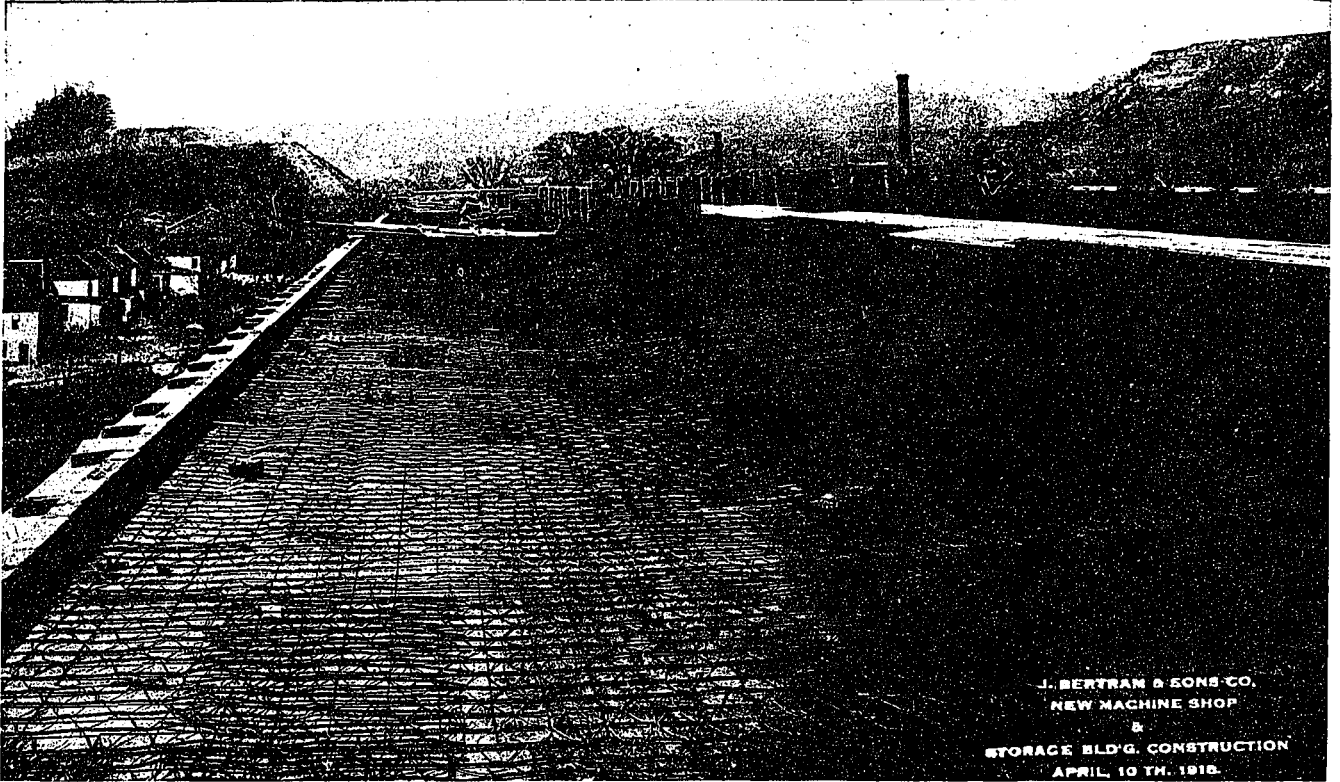
A vacuum heating system heats the various buildings. Drinking fountains, stationary basins and lavatories are provided throughout the plant in connection with each department. All buildings are equipped with an automatic sprinkler system, having an average pressure of 75 lbs., and fed by a water tower of 75,000 gallons capacity. This tower is connected by a 10-inch main to the town's water supply. Hydrants and hose reels are also distributed about the premises so as to meet every re-

quirement for adequate fire protection.

In enlarging its plant facilities, the company has also been placed under the necessity of providing additional accommodation for its office staff. For this purpose a separate building has been erected to the north of the plant on Hatt street. This office building is a two-storey structure, 113 x 55 ft., and is designed to carry an additional storey. Tapestry brick of a soft red color flecked with darker tones and trimmed with granite and Indiana limestone is used for the exterior, and well-kept lawns surround the building. Eighteen large offices are provided, in addition to a board-room, photographing-room and a draughting-room. The partitions are of gypsum block, and the floors are of hollow

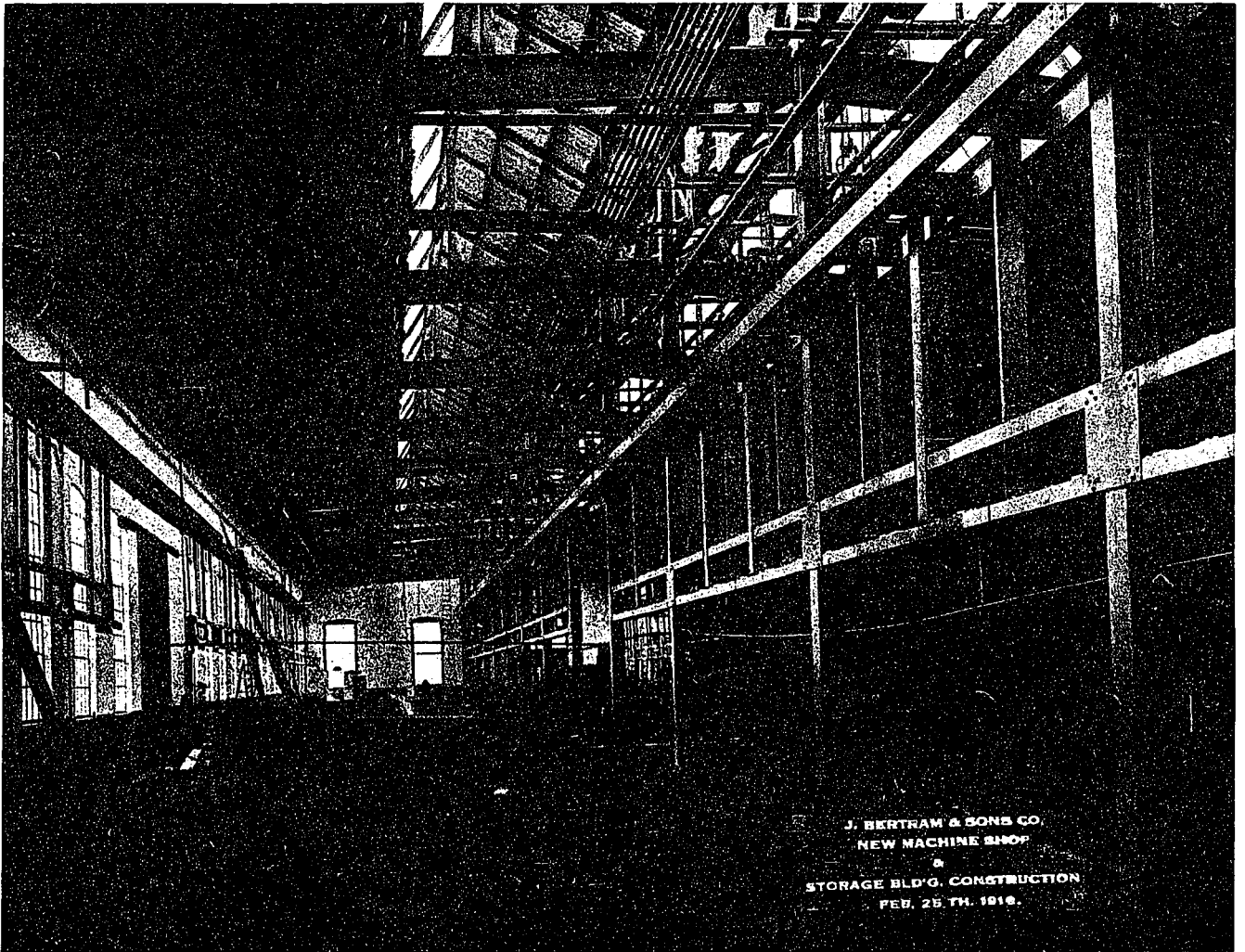


BOILERS.



J. BERTRAM & SONS CO.
NEW MACHINE SHOP
&
STORAGE BLD'G. CONSTRUCTION
APRIL 10 TH. 1916.

ROOF OF PERMANENT STORAGE BUILDING.



J. BERTRAM & SONS CO.
NEW MACHINE SHOP
&
STORAGE BLD'G. CONSTRUCTION
FEB. 25 TH. 1916.

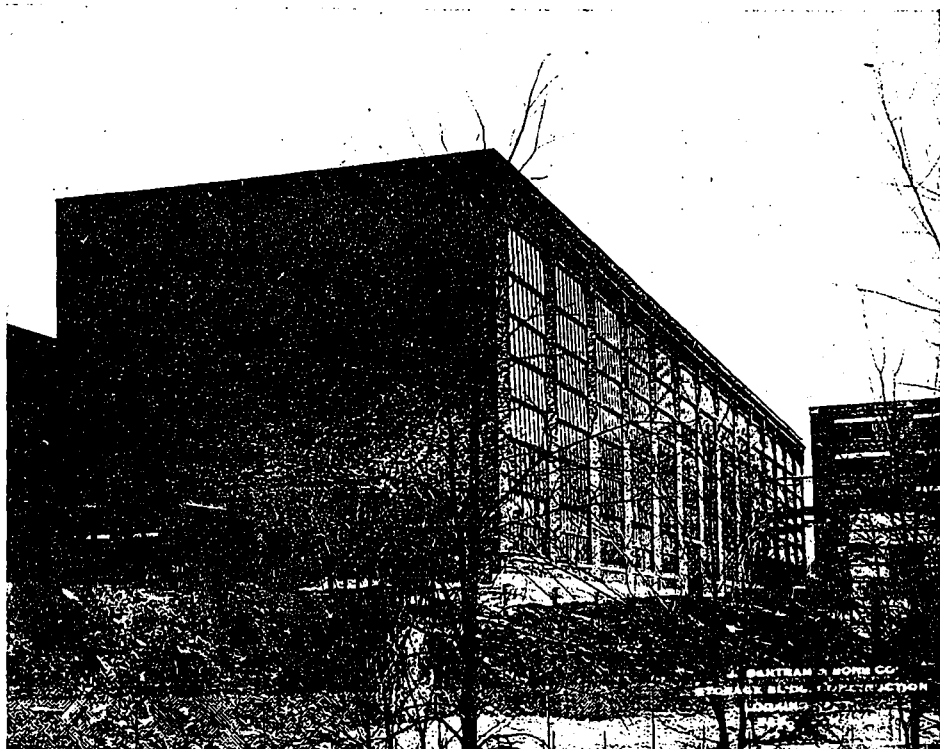
INTERIOR NEW LATHE SHOP.

JOHN BERTRAM & SONS COMPANY'S PLANT, DUNDAS, ONT.

tile with maple flooring above on a 4-inch cinder fill with 3 x 4 inch nailing strips. Terrazzo is used for the floors of the halls, blue print room and lavatories, the latter having Italian marble walls to the height of six feet. The tables and desks in the offices consist entirely of steel equipment, the windows are of the metal sash type, and oak trim and doors are used throughout. The building is equipped with two book vaults, a special vault for the protection of plans and specifications, an automatic telephone system, and time and office clocks having a master clock control. An additional feature is a pneumatic tube system which connects the head office to the Pratt & Whitney building and the main Bertram plant, which is used for the delivering of messages between the several departments.

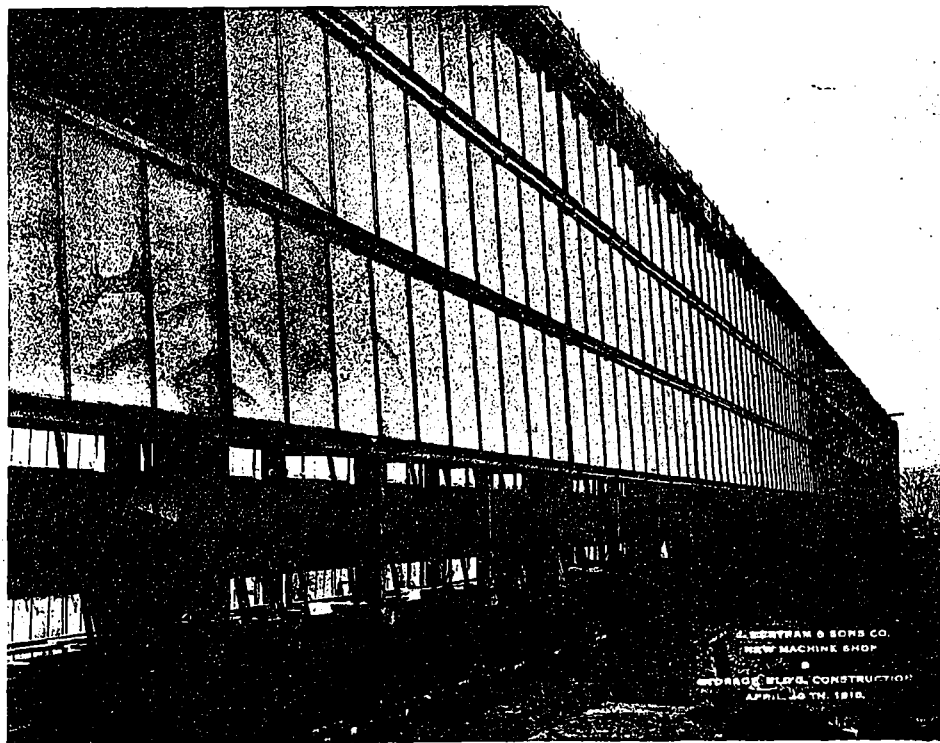
The Pratt & Whitney building is of flat slab concrete construction, having a two-way reinforcement of corrugated bars, and is devoted to the manufacture of precision machine tools, standard and gauge reamers, cutters, taps, dies and small tools. This work, to a large extent, is done by finely adjusted automatic machines which turns, lathes and tools special high grade steels, and turns out a completely finished product. The structure is 178 ft. long, 90 ft. wide at one end, and 75 ft. at the other, and has three stories and full basement. The concrete floors have a thickness of 8 inches, on which 3-inch plank is laid in pitch and brought to a true level, and finished over this with hardwood flooring. The columns are octagonal in shape and vary from 30 to 24 inches in size. They have 10 ft. square caps reinforced

with 5-8 inch rods spaced 12 inches at the floor, with a mat of eight additional 1-2 inch straight rods running each way. The ceiling of all floors have cast iron inserts spaced 30 inches apart for carrying small steel channels to which the hangers supporting the line shaft and counter shaft operating the machinery, is hung. Two electric elevators of 6,000 and 4,000 lbs. capacity at either end of the building serve the various floors. There is also an electrically driven dumb

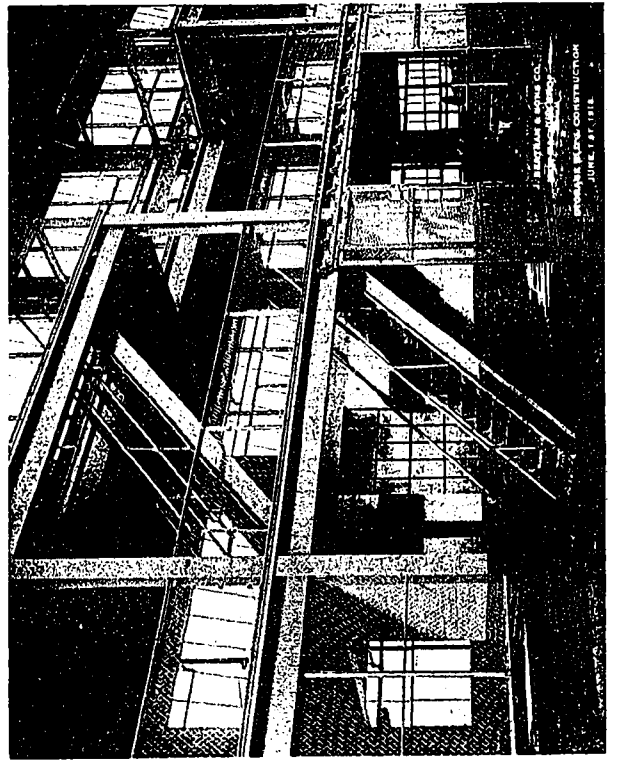
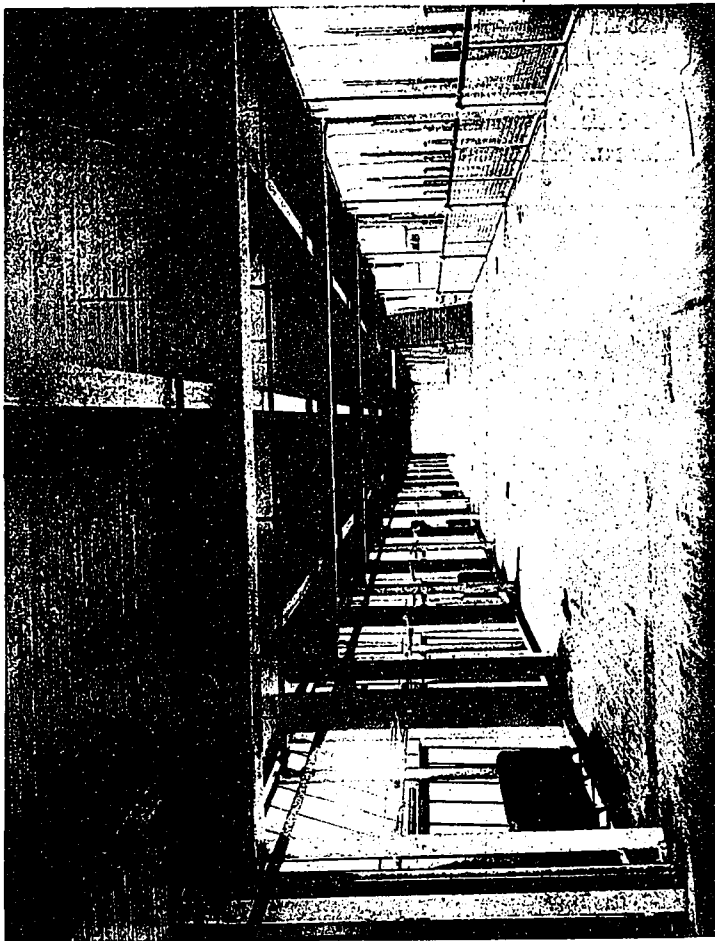
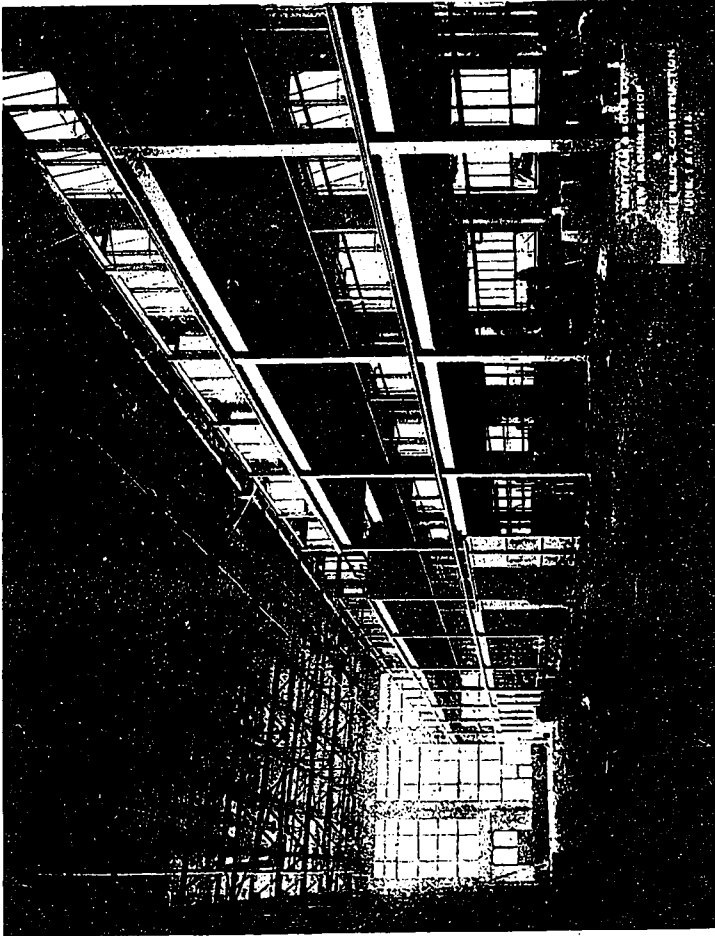


PERMANENT STORAGE, JOHN BERTRAM & SONS COMPANY PLANT, DUNDAS, ONT.,

with 5-8 inch rods spaced 12 inches at the floor, with a mat of eight additional 1-2 inch straight rods running each way. The ceiling of all floors have cast iron inserts spaced 30 inches apart for carrying small steel channels to which the hangers supporting the line shaft and counter shaft operating the machinery, is hung. Two electric elevators of 6,000 and 4,000 lbs. capacity at either end of the building serve the various floors. There is also an electrically driven dumb



PERMANENT STORAGE ABOVE ROOF OF NEW LATHE SHOP.



VIEW
SHOWING
BOTH
GALLERIES

FIRST
GALLERY IN
STORAGE
BUILDING

NEW STORAGE BUILDING

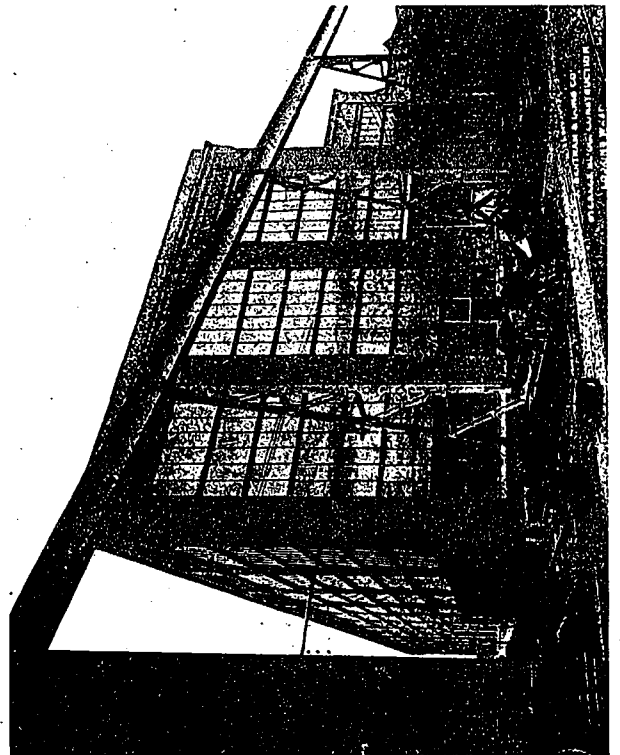
John Bertram & Sons Co.'s
Plant

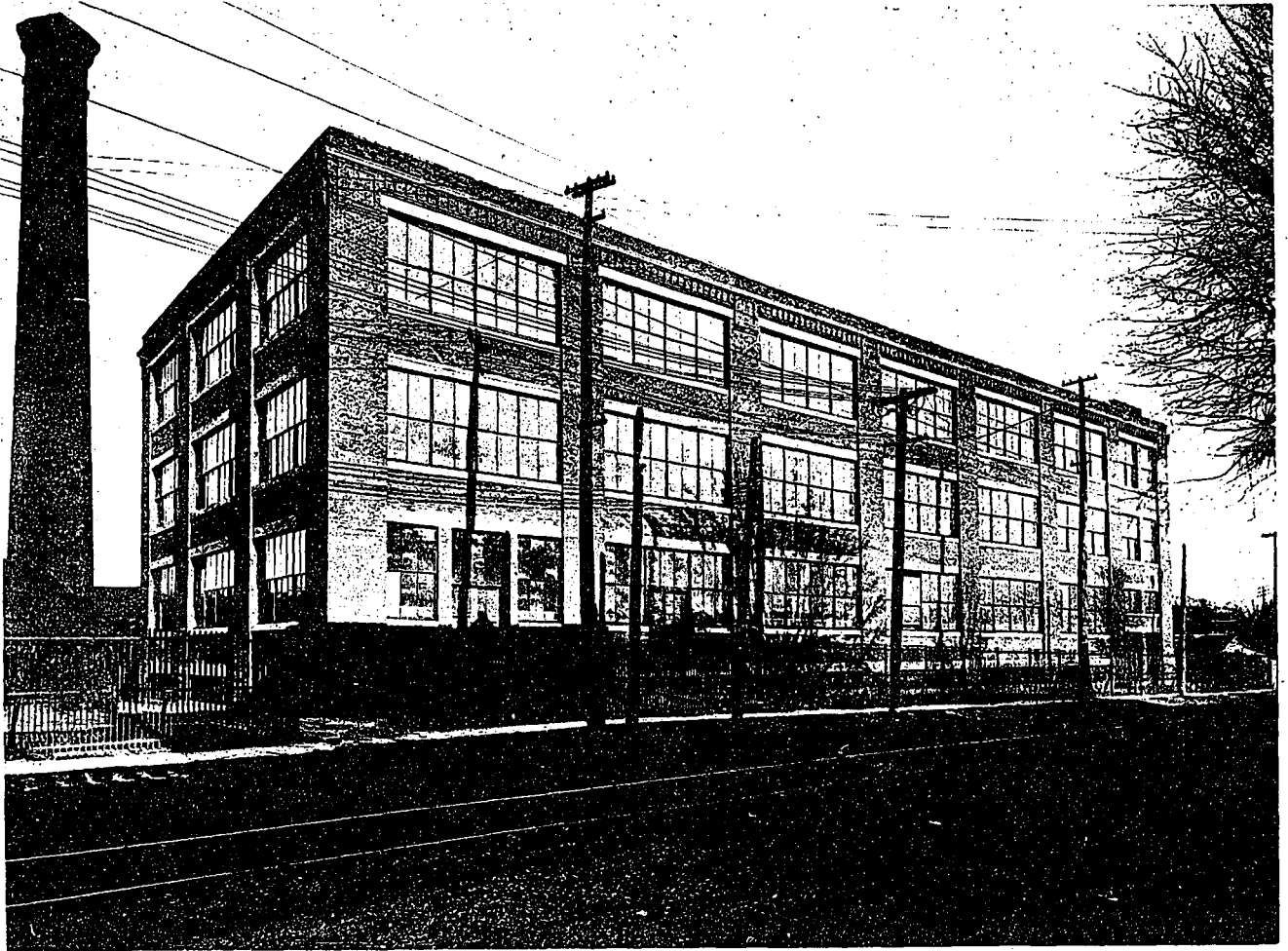
Dundas, Ontario

Harris & Richard, Architects.

GALLERY
ENCLOSURES,
AND
STAIRS

EAST END OF
BUILDING
SHOWING YARD
CRANEWAY.



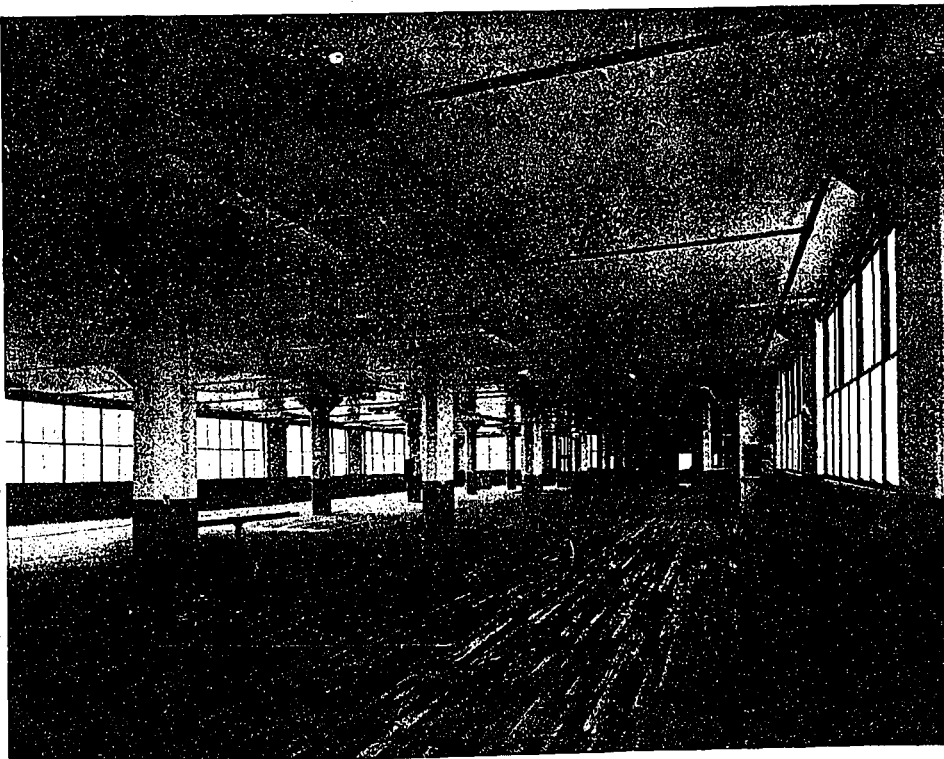


PRATT & WHITNEY COMPANY'S PLANT, DUNDAS, ONT.

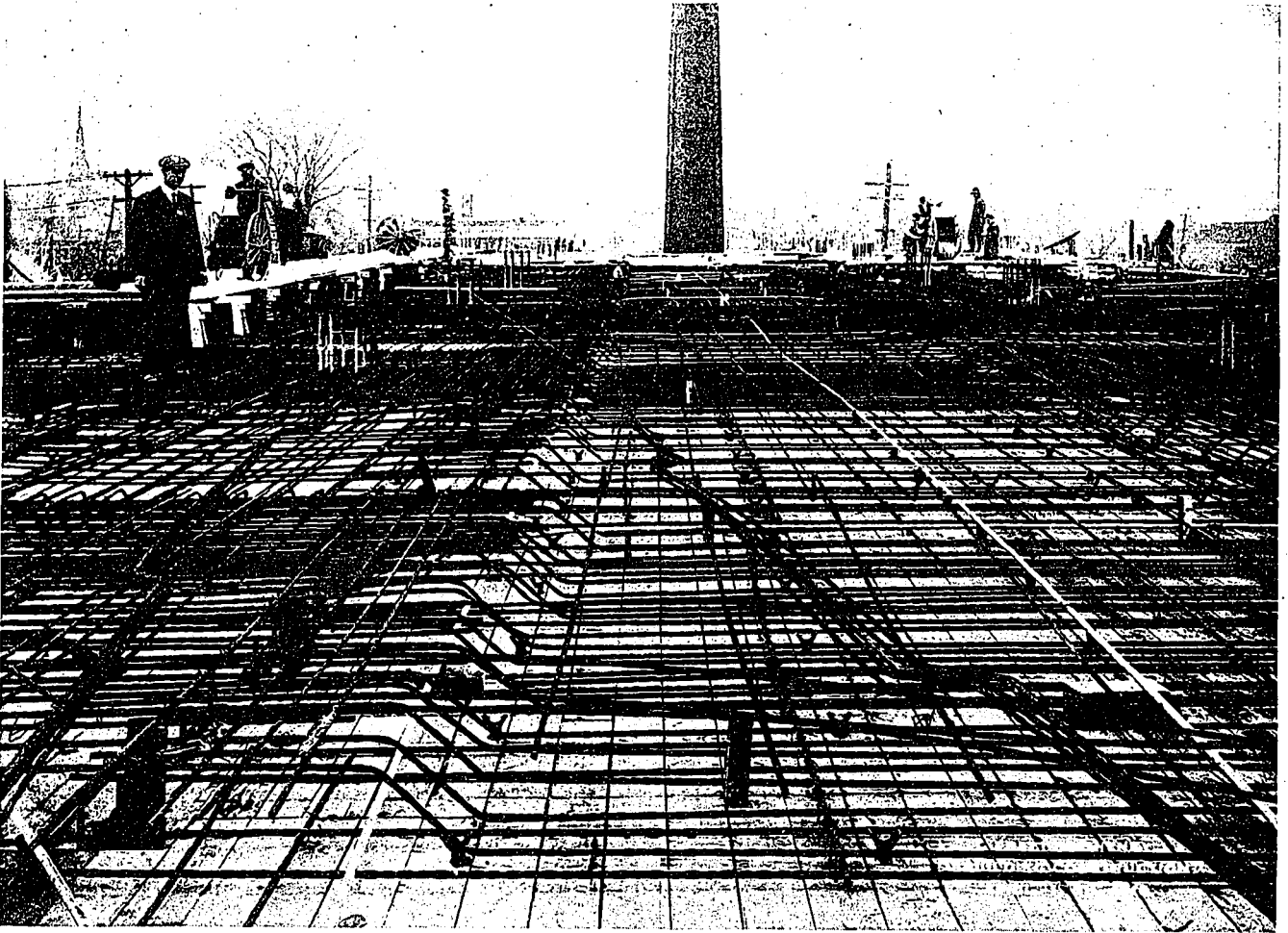
waiter, 3 x 4 ft., for delivering finished parts to the main store and shipping room. The building is enclosed with a 7 ft. steel fence and set well back from the street line, which allows

for a wide driveway and plenty of yard space. The exterior walls are of brick with cut stone trimmings and counterbalanced steel sash; and other features of the equipment, such as the sprinkler system, drinking fountains, individual metal lockers, and the lavatories are all of a modern type.

Both plants have a sewerage system of their own, comprising a disposal tank and main and secondary branches. From the main plant and offices of the Bertram Company the sewerage flows by gravity, and from the Pratt & Whitney premises it is pumped to the main trunk sewer on Ogilvie Street by two sewerage ejectors of 100 gallons' capacity per minute each. Besides this, a complete system of storm sewers has been built to take



INTERIOR VIEW, PRATT & WHITNEY COMPANY'S BUILDING.



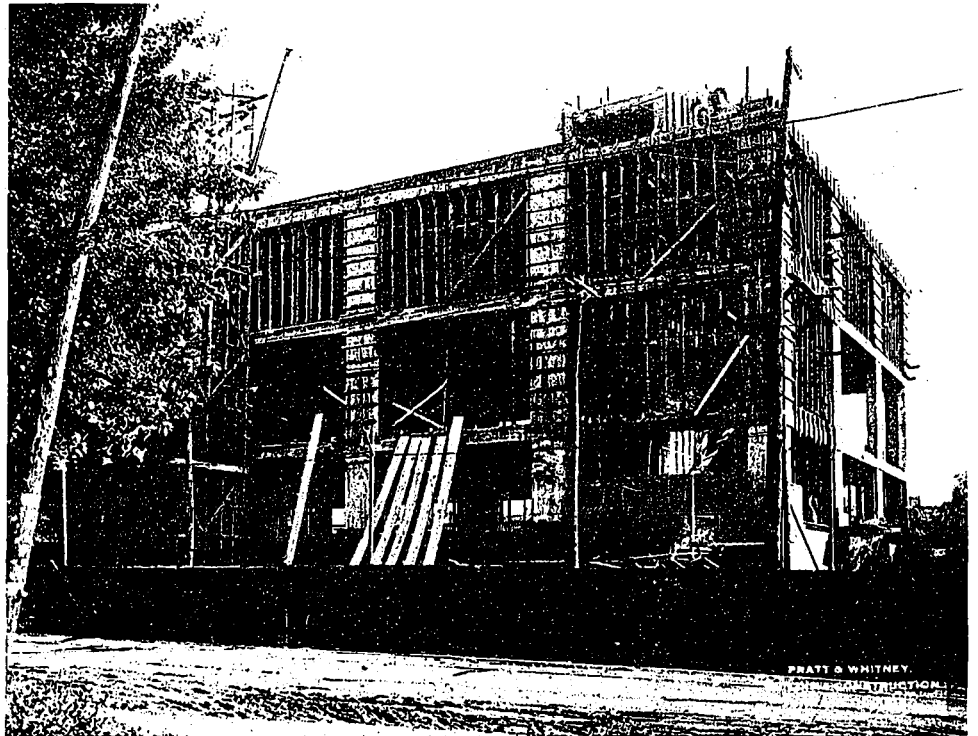
VIEW SHOWING POSITION OF STEEL REINFORCEMENT, PRATT & WHITNEY COMPANY'S BUILDING, DUNDAS, ONT.

care of rain water from the main buildings, which is delivered to the creek at the Ogilvie Street bridge.

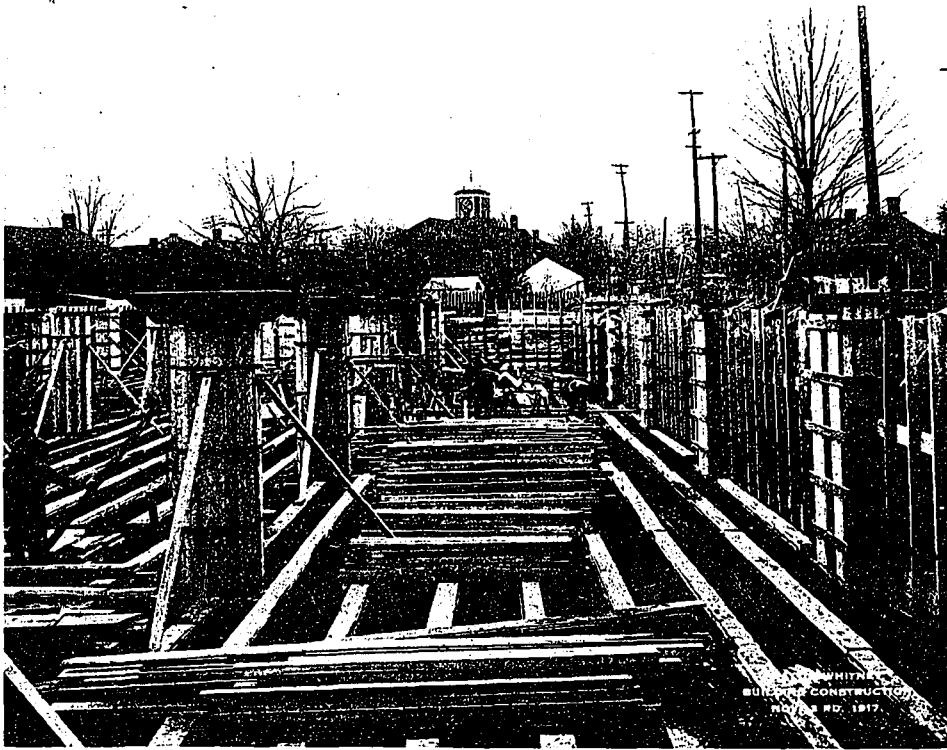
The creek itself passes the south end of the Bertram property where concrete revetments have been built along both banks, the water taking its course over a 14-inch bed between the walls. This improvement alone cost \$45,000, and involved the diversion of the stream from its original position, and has made possible the enlargement of the plant in this direction. It also serves to prevent damage from floods, which are very heavy through this valley during the spring and wet seasons, when the rate of speed at which the stream travels at this point has been as high as fifteen feet per second.

Ancient Built Walls

The statement is frequently made, comments *Buildings and Building Management*, that the



FORM WORK, PRATT & WHITNEY COMPANY'S BUILDING, DURING PROCESS OF CONSTRUCTION.



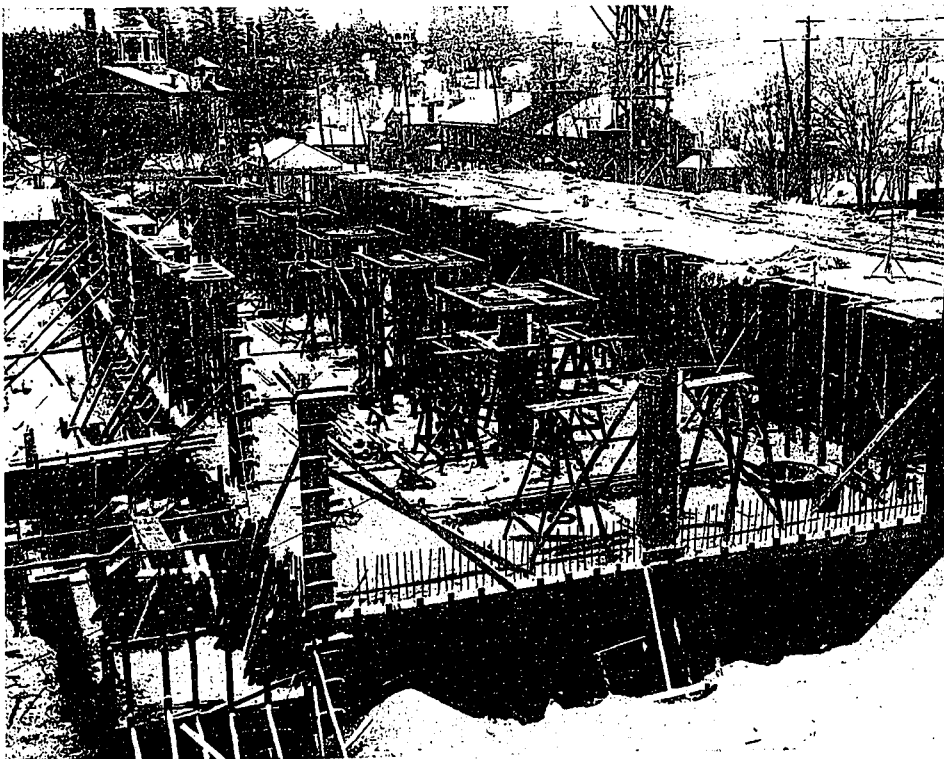
VIEW SHOWING FORM WORK OF BASEMENT, PRATT & WHITNEY BUILDING, DUNDAS, ONT.

ancient Romans used concrete freely, and that their work has lasted perfectly down to the present day. The impression that is sought to be conveyed by all such statements is that the concrete was precisely similar to that we are using now, and consequently is an argument for the durability of some of our cheap construction. Everyone who has looked into the subject with any thoroughness knows, of course, that

ages, and in the course of nature more of the bad buildings have perished than of the good, and in consequence the achievement of the period which has left an appreciable number of works is liable to be judged on too favorable a ground. Even in such Roman buildings as are left there is no uniform standard of merit.

"The Roman tradition of building with two faces and a core was continued in the Middle Ages, but often with none of the care and thoroughness which was necessary for its success. In the eleventh century, at any rate, the core in many instances was little more than earth and building rubbish packed in between wrought stone faces, these latter in small stones with shallow beds. Such walls would stand no great weight and were also particularly sensitive to any foundation movement or lateral stress, having no natural strength.

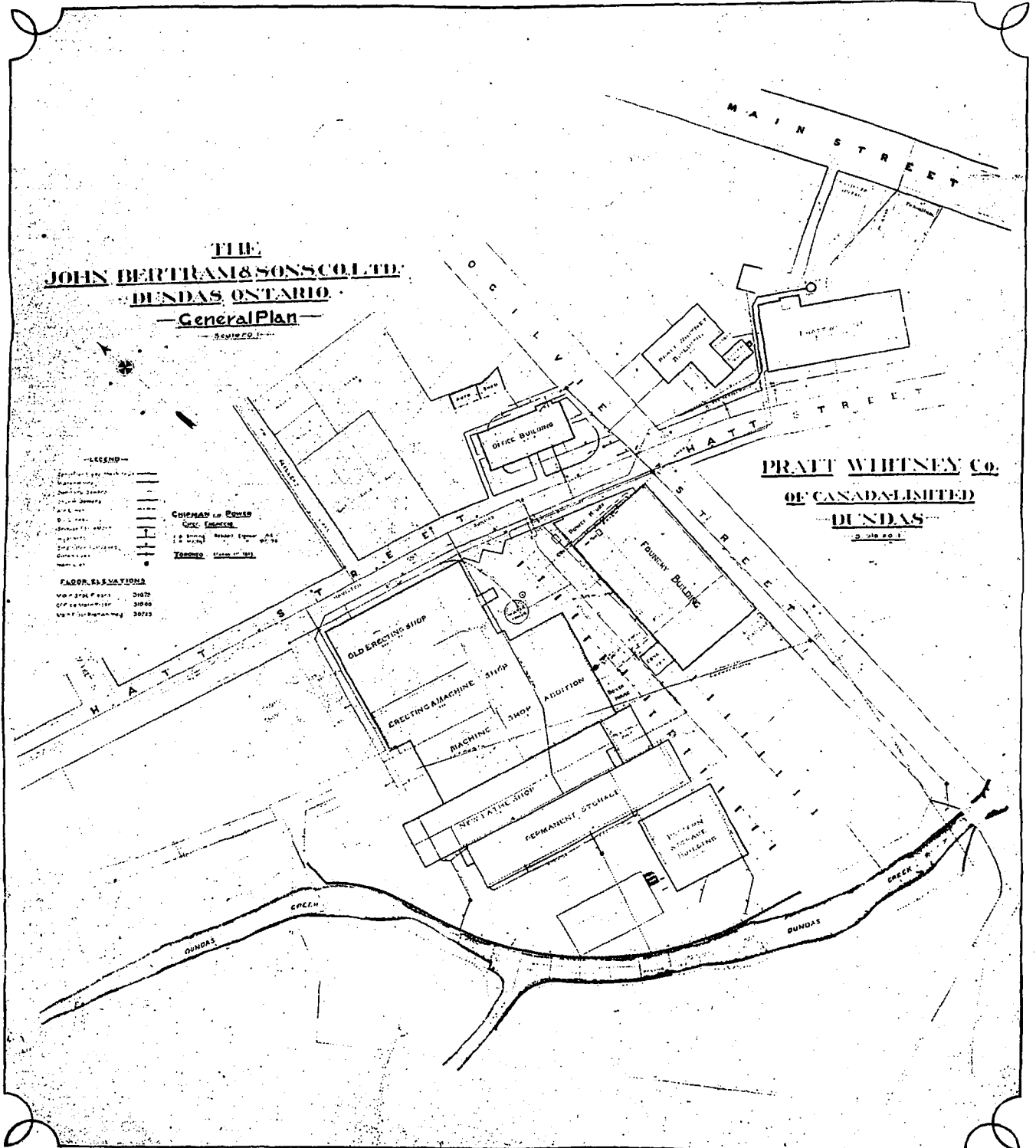
"In a small building, where stresses are neither great nor complex, a weatherproof wall face protecting a weak core will often



LOWER FLOOR COLUMNS, PRATT & WHITNEY COMPANY'S BUILDING, SHOWING FORMS FOR CAPS.

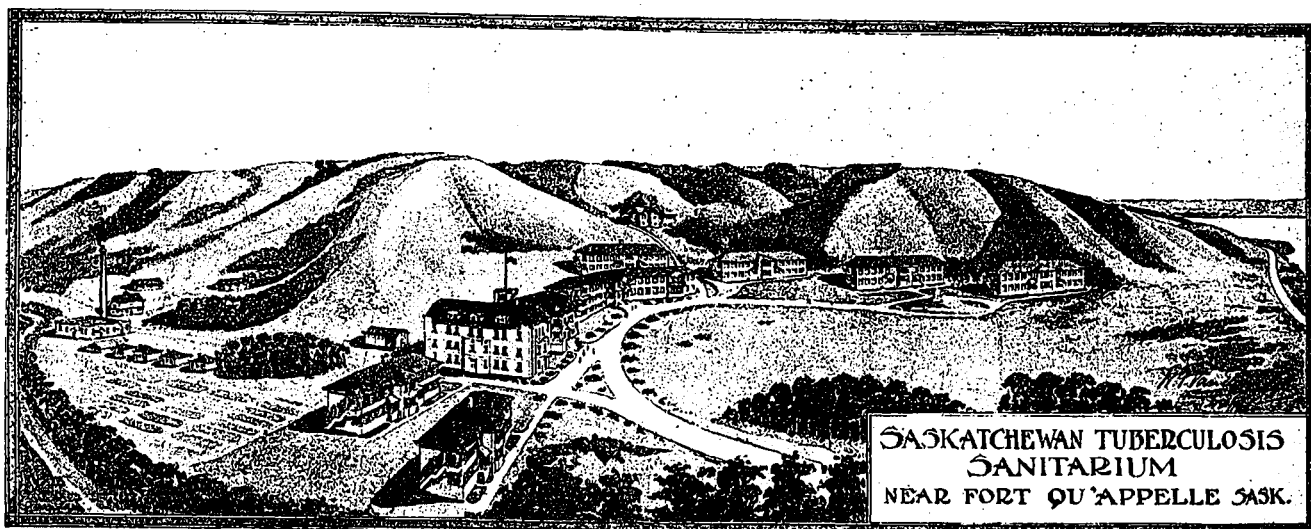
serve well enough for the time, but the ruin or reconstruction of many of our mediaeval buildings has followed the adoption of such a principle. Walls were pointed in tolerable lime mortar, but built in nothing but clay, and as long as the pointing was able to keep the weather out

down, for lack of sound walling to which to bond a repair. It will easily be seen that it is almost impossible to strengthen such a wall so as to prolong its existence appreciably without destroying its character, considering that its character is the very source of its weakness."



they were able to do the work for which they had been designed. But if, through any settlement or stress, a fracture developed, the masonry had no power of resistance, but fell away and became fit for nothing but pulling

GENERAL PLAN
 Bertram and Pratt & Whitney
 Plants, Dundas, Ont.



PERSPECTIVE VIEW SHOWING GENERAL SCHEME OF BUILDINGS.

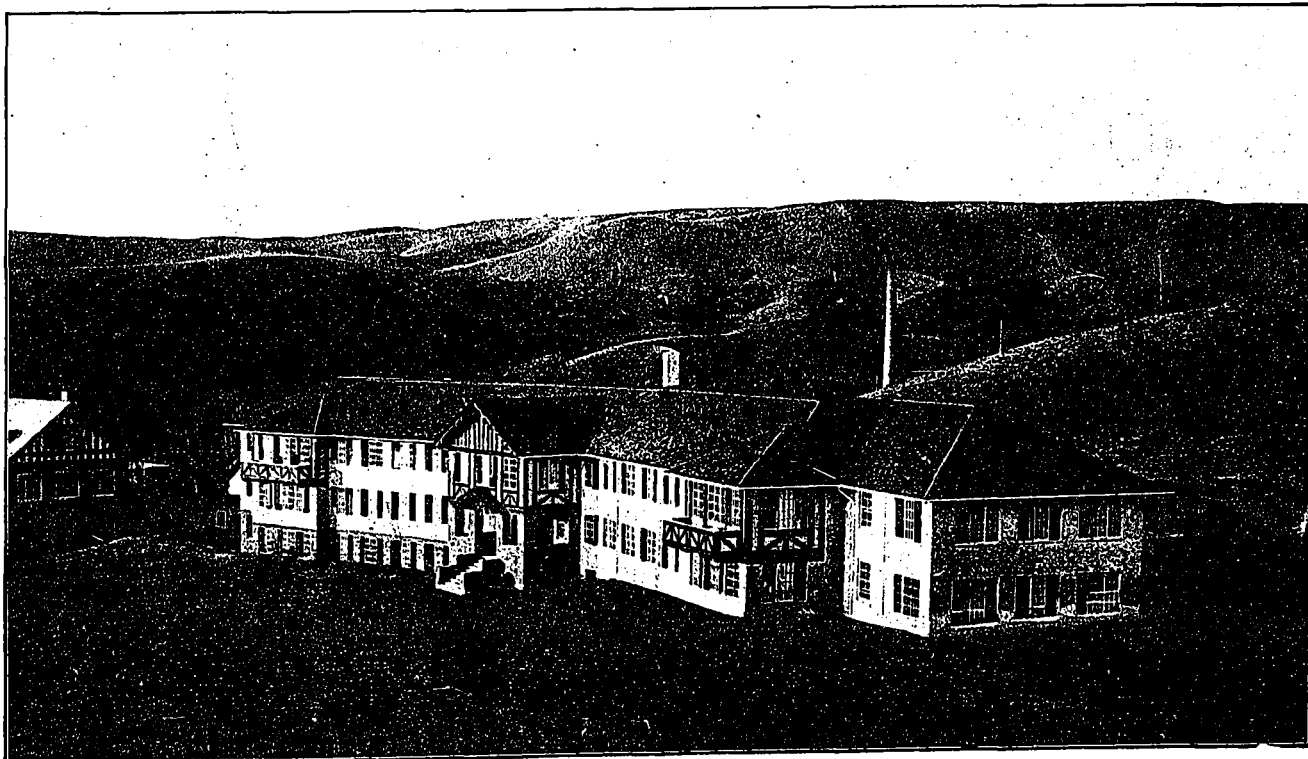
Saskatchewan Tuberculosis Sanitarium

NESTLING cosily in the shelter of a cup of hills on the northern shore of Lake Qu'Appelle, two and a half miles west of the old historic Hudson's Bay Company post of Fort Qu'Appelle, the Saskatchewan Sanitarium occupies a location which is ideal for the treatment of tuberculosis. Conforming to the sweep of the hills, the buildings form a crescent which faces the lake in a southerly direction, giving the patients the benefit of the sun's rays, and the hills, rising to a height of 200 feet, provide protection from all winds except the warm winds from the south.

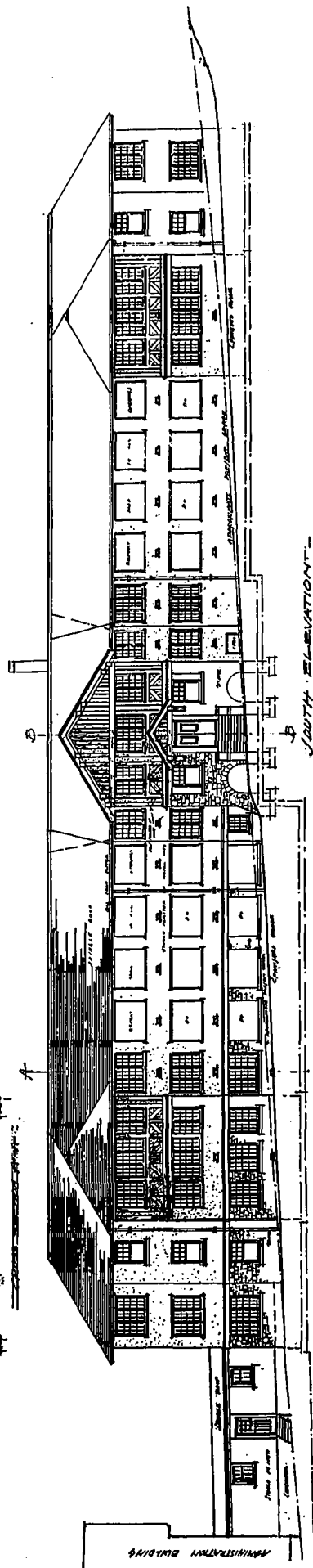
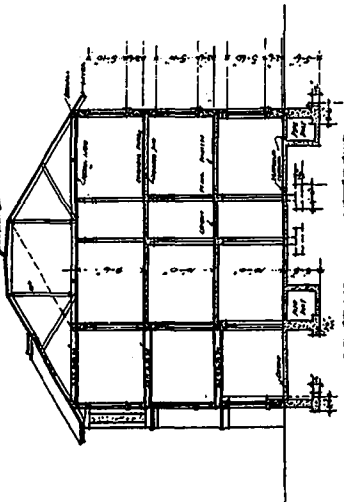
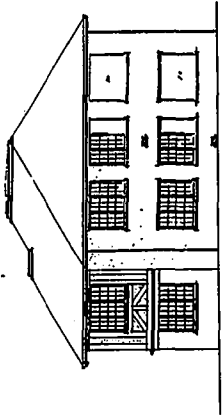
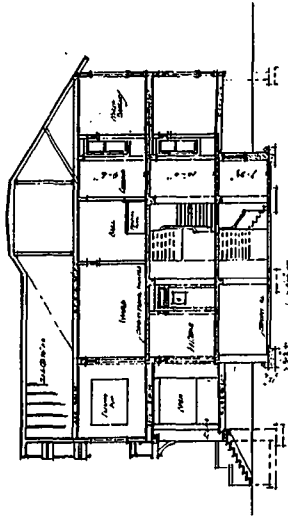
The descriptive appellation, "Sunny Saskatchewan," is more than a poetic alliteration,

for it is a well-known fact that Saskatchewan enjoys comparatively the greatest amount of sunlight in Canada. This advantage, added to the altitude of approximately 1,900 feet above sea level, the dryness of the climate and the shelter of the encircling hills, makes the location an ideal one.

The initial buildings, comprising part of the administration building, two pavilions and power-house, were commenced in 1914, but owing to the outbreak of war, completion was delayed until 1917. These buildings provided accommodation for seventy patients, forty-eight ambulant patients in the two pavilions, and

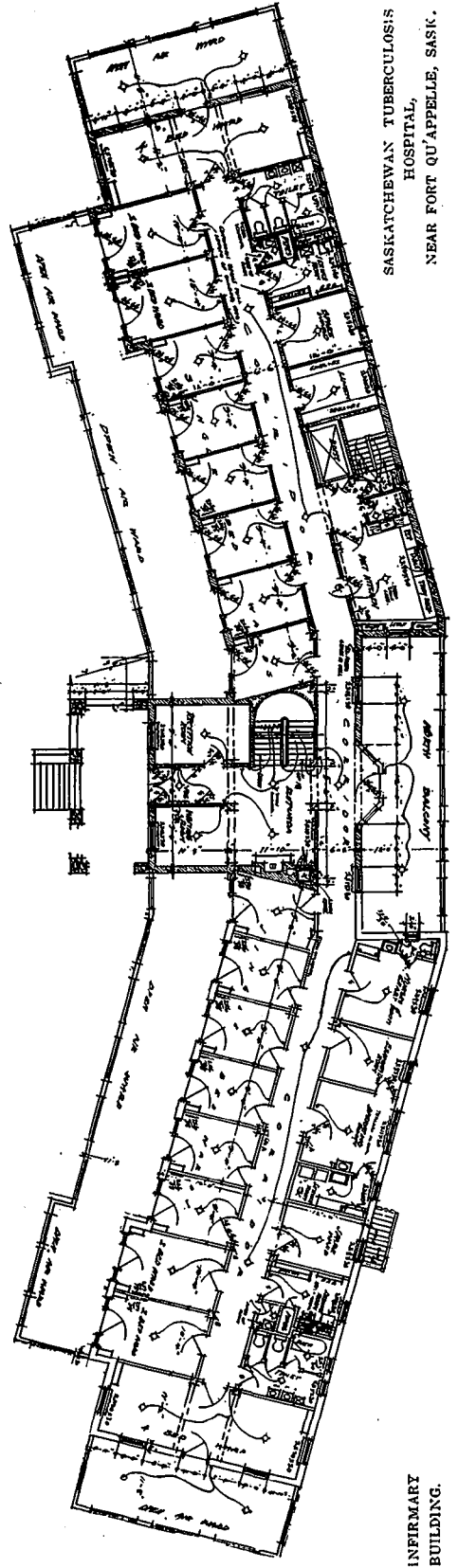


W. G. VAN BOMOND,
ARCHITECT.



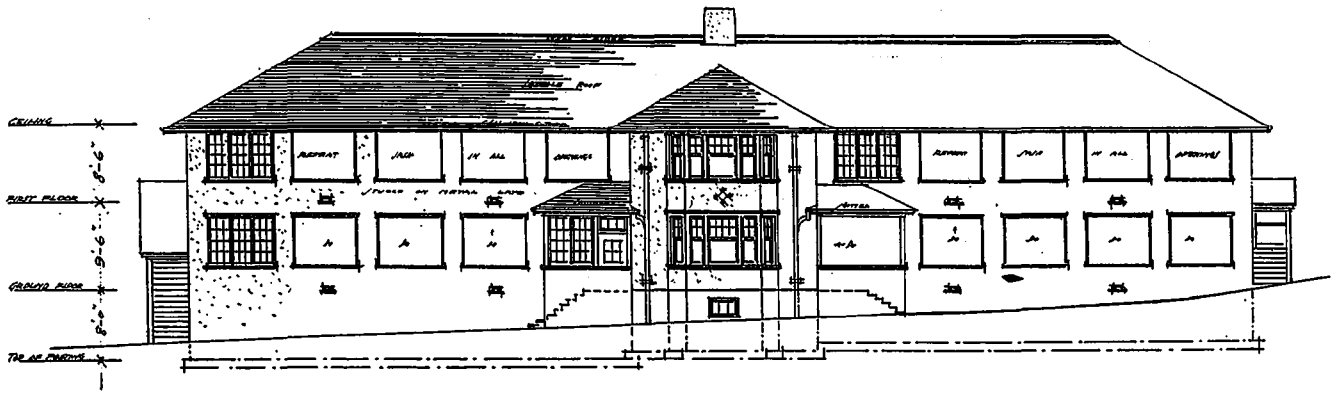
ADMINISTRATIVE BUILDING

PAVING

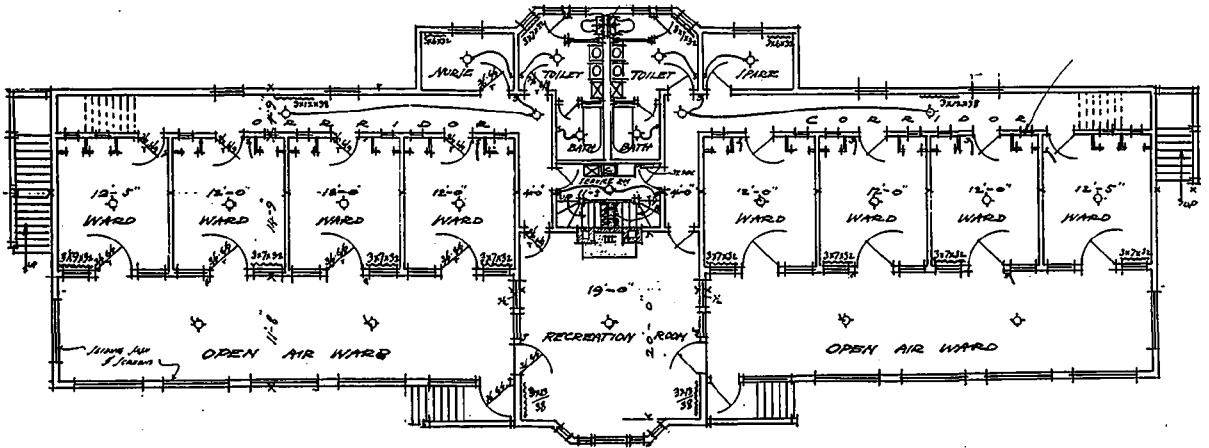


SASKATCHEWAN TUBERCULOSIS
HOSPITAL,
NEAR FORT QU'APPELLE, SASK.

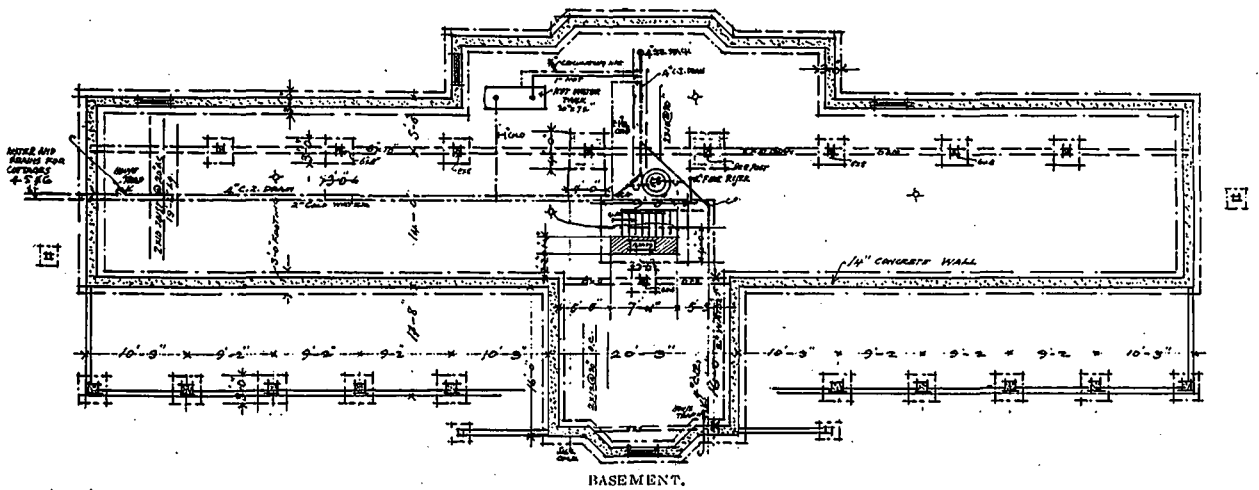
INFIRMARY
BUILDING.



FRONT ELEVATION.



TYPICAL PLAN SHOWING ARRANGEMENT OF MAIN AND UPPER FLOORS



BASEMENT.

COTTAGE PAVILLION, SASKATCHEWAN TUBERCULOSIS HOSPITAL, NEAR FORT QU'APPELLE, SASK.

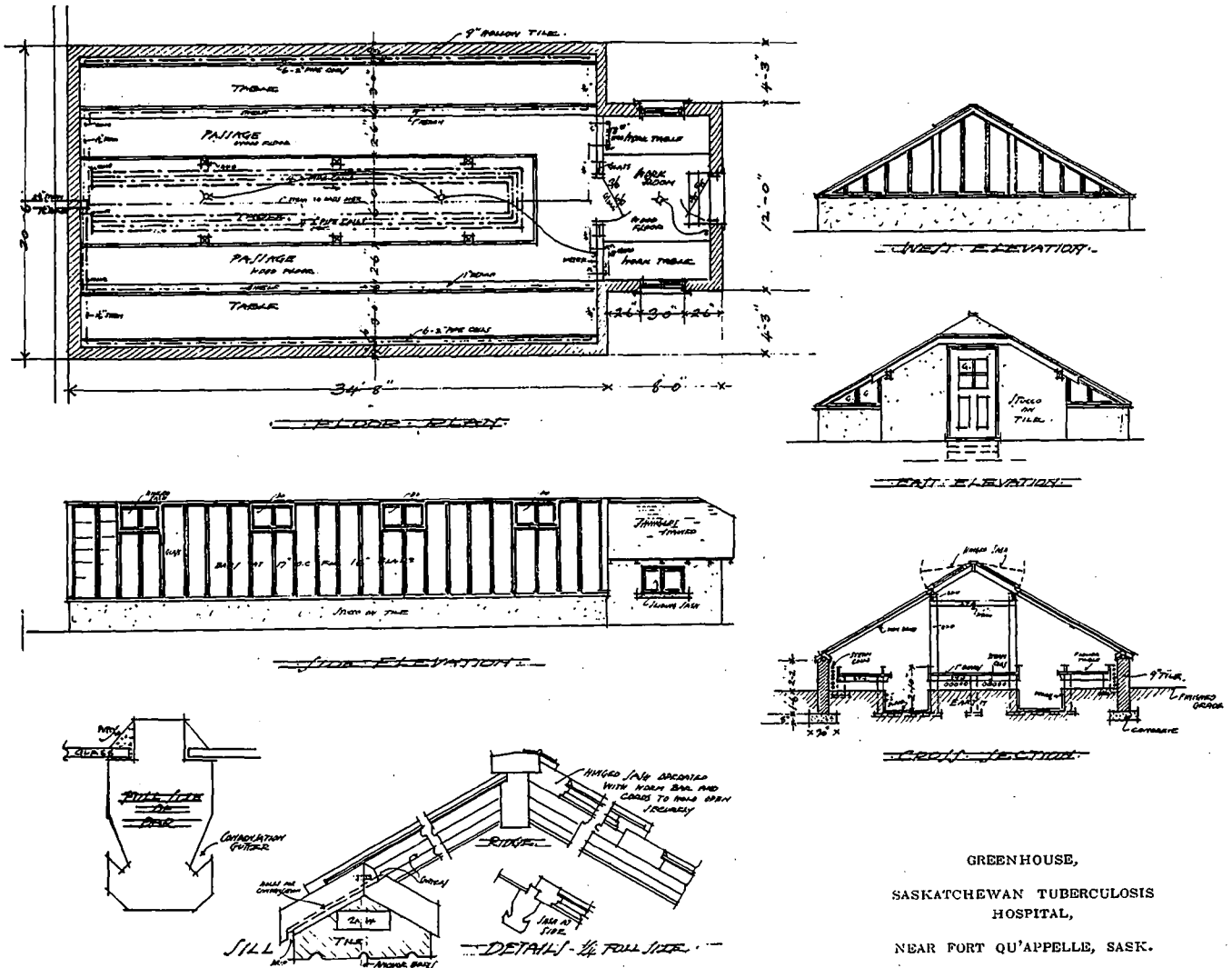
twenty-two infirmatory patients being housed temporarily in the administration building.

Owing to extra accommodation being required for returned soldiers, the institution was extended in 1918 to provide for two hundred and sixty patients by the erection of an eighty bed infirmatory, four thirty-two bed pavilions, extension to administration building, help cottages and farm buildings. It is now proposed to provide an addition to the infirmatory, which will bring the total accommodation to 300. This necessitates quarters for a staff of one hundred, which has already been provided for. A recre-

ation building, Red Cross visitors' lodge, and children's pavilion will also be erected.

Patients are first admitted to the infirmatory, which is equipped throughout for carrying out infectious technique, so that each patient may be treated separately, thus protecting those under treatment from epidemics such as influenza or common colds, which are the usual causes of setbacks to tubercular patients.

The infirmatory is a concrete and tile building, 32 ft. x 216 ft., with sleeping balconies along the south front. Owing to the grade of the site, half of the building is three storeys in height



GREENHOUSE,
SASKATCHEWAN TUBERCULOSIS
HOSPITAL,
NEAR FORT QU'APPELLE, SASK.

and the other half two storeys. There is accommodation for eighty patients, thirty-six single bed wards, fourteen double bed wards, and four four-bed wards. In all cases, open air sleeping balconies are provided in conjunction with the inside wards, and on the north side there are summer porches, to which patients who feel inconvenienced by the heat may retire. There are also porches on the south side designed especially for sun treatment. This building is connected to the main kitchen in the administration building by a heated passageway, through which food is conveyed by means of a steam-heated dinner wagon to the diet kitchens on each floor, a hoist being provided for this purpose. Each diet kitchen is fitted with steam table, tray racks, sink, electric hot plates, refrigerator, cupboards, and on each floor there is a chart room, where a daily record of all patients is kept on file. A service room is provided on each floor, fitted with clinic slop sink, bed pan sterilizer, and racks, etc. Sanitary equipment is concentrated in a central location in each wing, five general toilets being provided, each having a bath, two closets, three lavatories and a dental basin. Centrally located in each wing there is a small wash-up room, with knee-action water

supply and knee-action soap container for the use of doctors and nurses between visits to patients, thus eliminating all danger of infection. All plumbing is grouped to reduce the number of stacks to the minimum, and accessible pipe ducts are provided for all pipes.

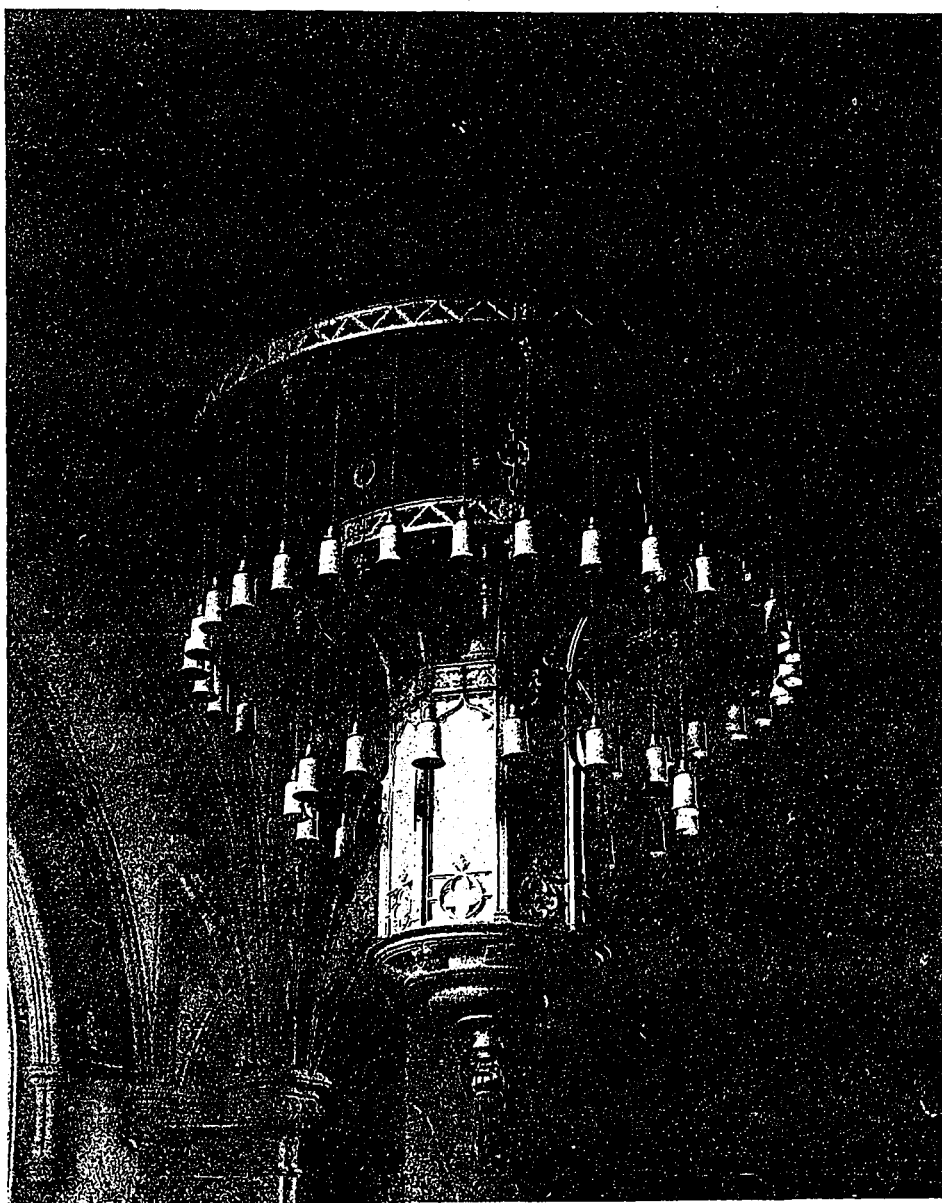
On the ground floor there is an admitting room and operating department. On the first floor, with outside separate entrance, is an isolation department, containing two wards and service room. This building is constructed of reinforced concrete construction, the walls and partitions being of hollow tile. The ground floor walls are of local rubble stone and the superstructure walls are stucco plastered, the stairs and floors being of concrete throughout, finished with a concrete paint. All finish is white enamelled and the doors are of slab pattern, those between the inside and open air wards being Dutch pattern doors and wide enough to allow beds to be rolled in and out. The walls of the open air wards are plastered, and the openings are fitted with sliding sash and screens. All wards and sleeping balconies are connected with the chart room and diet kitchens by an electric light signal system, which, while eliminating the nerve-racking

jangle of bells, insures instant attention. The cost of the infirmary was \$80,000.

Patients who have progressed sufficiently to be allowed exercise are promoted to the pavilions. Each pavilion has accommodation for thirty-two patients, inside wards being provided to accommodate two beds each. In the centre of each floor there is a recreation room dividing the patients in the sleeping balconies into four communities of eight each, thus giving

pavilions is of frame, finished on the outside with stucco plaster, metal lath being used throughout. Each pavilion is 32 ft. x 116 ft. and cost \$27,000.

The administration building is of reinforced concrete construction, with brick walls. In this building are located the administration offices, nurses' and help quarters, examination rooms, kitchen and main dining room for ambulant patients, accommodating 200. A well-equipped



CENTRAL ELECTRIC LIGHT FIXTURE, (REDECORATED INTERIOR), ST. JAMES METHODIST CHURCH, MONTREAL. SEPTIMUS WARWICK, F.R.I.B.A., ARCHITECT.

a combination of cure and companionship that yields good results. A separate stairway is provided to each section, and each section has toilet accommodation consisting of bath room, closet, two lavatories and dental basin. Rooms are provided for supervising nurse, instructors, supplies, etc., and on each floor there is a service room, fitted with slop sink and linen chute, and a service stairs. The construction of the

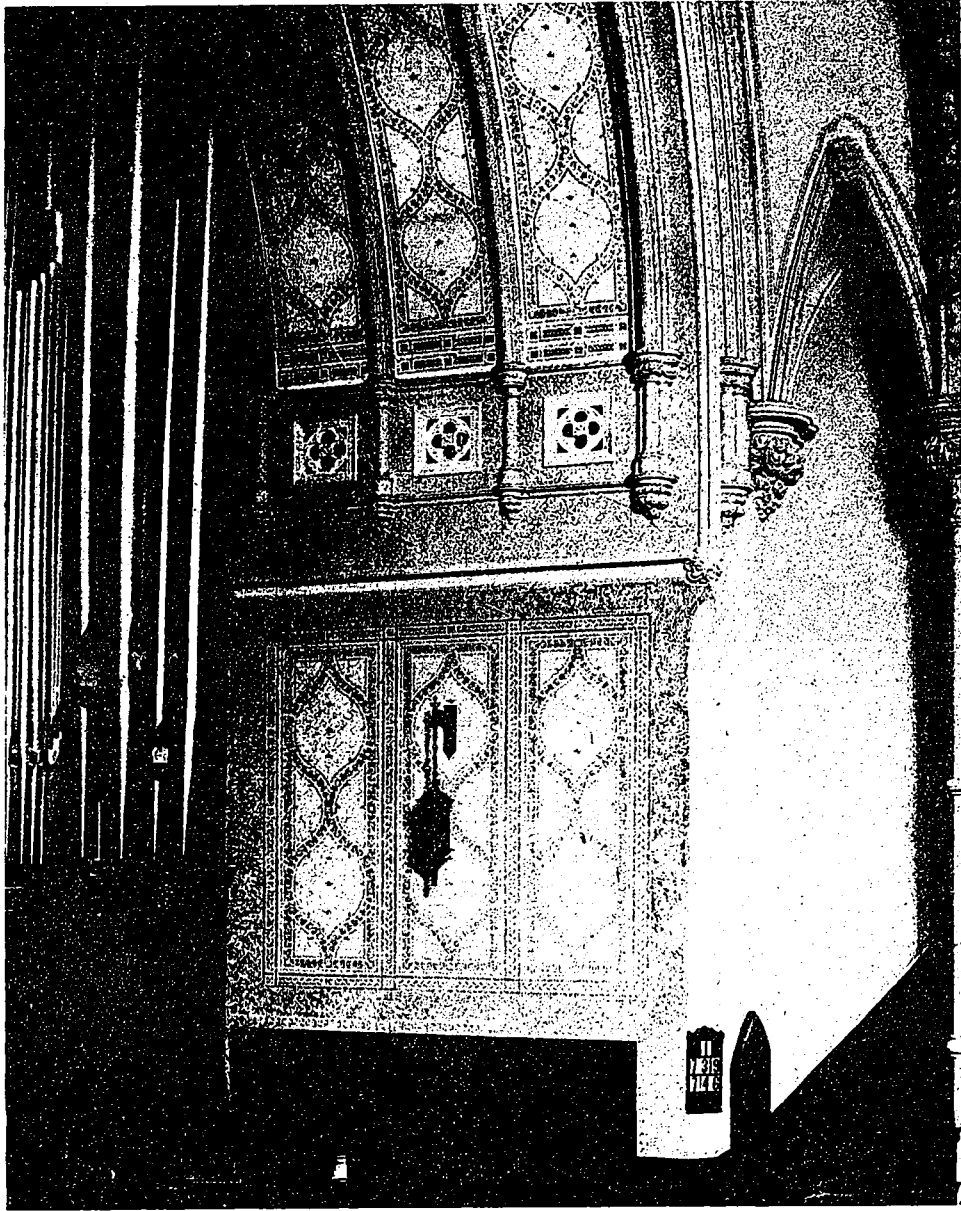
laboratory and a modern X-ray department is provided.

Heating, electric lighting and water are supplied from a central power house, equipped with a high-pressure steam system of three boilers and two steam generators. Electric light is provided to all buildings through a storage battery. Heating is provided by exhaust steam and a vacuum system of distribution, the pipes

being carried between buildings through tunnels, and to the more outlying buildings through split tile. Water is supplied from two wells, from which water is pumped to a reservoir on the top of the hills, giving a gravity supply, with constant high pressure. Separate from the domestic system there is a 6 in. fire service line to hydrants between all of the buildings.

Decorative Scheme of St. James Methodist Church, Montreal

The interior of St. James Methodist Church, Montreal, has recently been redecorated and now presents a much improved appearance. The walls have been treated in a warm buff color, and the ceiling ribs continued in the same color, but two or three shades lighter, the ceil-



CHANCEL ARCH (REDECORATED INTERIOR), ST. JAMES METHODIST CHURCH, MONTREAL.
SEPTIMIUS WARWICK, F.R.I.B.A., ARCHITECT.

In connection with the power house there is a well-appointed steam laundry. A sewage disposal plant is provided, handling all sewage from the institution.

In addition to the above buildings, there are help cottages, stables, ice house, greenhouse, poultry house and piggery, all designed along the most approved lines for convenience and sanitation.

ing panels having a background of old ivory with a small chevron stencil following the lines of the vaulting.

The pews and woodwork generally have been kept in their original coloring, but the woodwork to the pulpit and the choir has been treated in a rich brown color. The ground floor of the church is covered with a dark green cork carpet, and it is proposed at a later date to lay strips

of gray carpet in the aisles and gangways, with a border designed to match the small stencil pattern round the dado of the church.

The principal new feature of the interior is the lighting system, which has nitrogen lamps placed in bronze lanterns around the sides of the church and under the galleries, with a large octagonal lantern in the central crossing of the roof, surmounted by two circular rings of lights, the largest of which being 8 ft. 6 in. in diameter. The total height of this central fitting is 20 ft.

A new silk curtain is placed at the back of the organ divided into panels with a gold galleon, the sides of the organ arch and the ceiling are treated in a flowing stencil decoration in small patterns of purple and green.

The whole effect has been to brighten the interior, and to add to the devotional character of the church, without any lavish display of color or any undue expenditure of money. The decorative scheme has been designed and carried out under the superintendence of Mr. Septimus Warwick, F.R.I.B.A., who was also the architect for the Soldiers' Club in the basement of the church, recently opened by the Governor-General.

Larger Loans for Better Houses

One result of the co-operation of the Commission of Conservation with the Housing Committee is that there has been introduced into the recommendations to be made by the Federal Government something that will help to avert a certain amount of fire-waste which goes on in connection with houses. The Government of Ontario limits the amount which may be spent on a house to \$3,000. The result will inevitably be that cheaper material will be used, and in the Commission's recommendation to the Dominion Government it was suggested that, for a frame house with brick veneer or frame house with stucco and shingle roof, the loan be for \$3,000 if the house contains four or five rooms, and for \$3,500 if there be six or seven rooms; and that if the house be built of brick, stone or concrete, with fireproof roofing material, the loan be \$4,000 for three or four rooms, and \$4,500 for six or seven rooms, the period of repayment being thirty years instead of twenty, at five per cent. The result will be that every man who wants to build a properly-constructed house not only can get a larger sum, but can get it on the same monthly repayment plan as that of which the man who builds the cheaper house has the benefit. In other words, a man can get \$4,000 for thirty years on the same monthly repayment plan as the man who builds the cheaper house can get \$3,000 for twenty years. Of course, the payments in the case of the larger loan extend over a longer

period, but the owner has a house of more durable construction. That principle has now been adopted, and will be a direct recommendation by the Dominion Government. In adopting these recommendations the Government is taking a forward step in recommending the adoption of town planning principles in connection with housing schemes and in furthering these measures to secure the best methods of construction.—“T. A.,” in “Conservation.”

On Trip to Far East

F. R. Still, Vice-President and Secretary of the Canadian Sirocco Company, has left on an extended trip to the Far East, where he will investigate trade conditions in connection with export work. Mr. Still's itinerary includes Japan, China, Australia and most of the European countries, and he expects to cover approximately 36,000 miles before returning home about November 1st.

The Building Ordinance of St. Louis, Mo., divides the city into zones controlling the height, area and use of buildings. There are five “height districts,” varying 45 to 150 feet, and also five “use districts,” namely, first residence district, second residence district, commercial district, industrial district, and unrestricted district. In this manner the authorities are able to regulate and govern all development, with the result that many objectionable features heretofore existing are gradually being overcome.

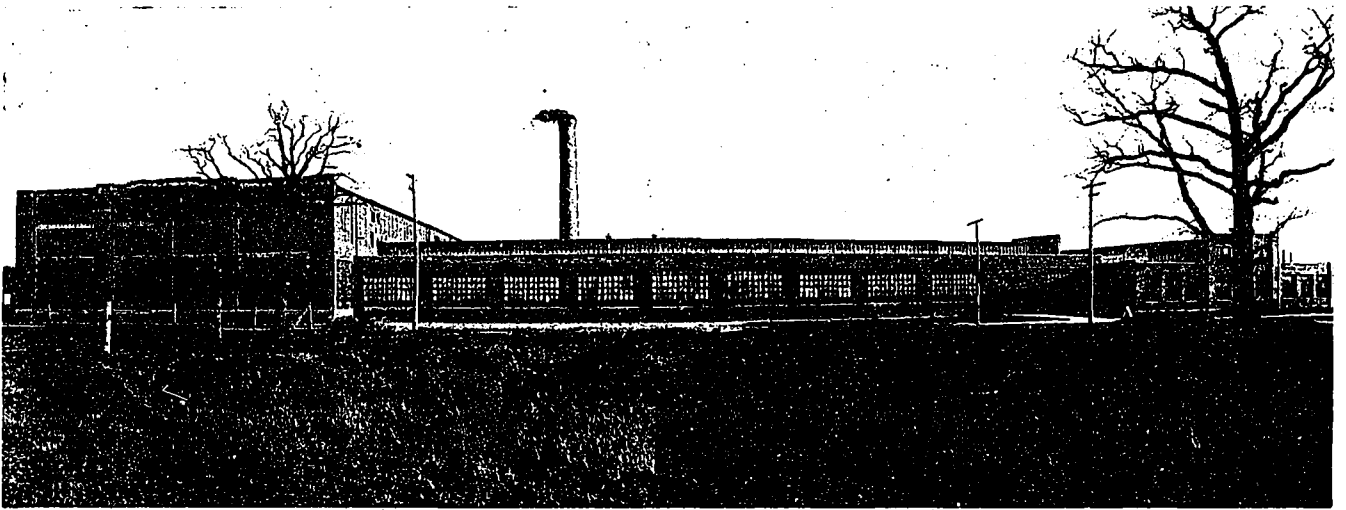
New York City had recently opened both the largest and second largest hotels in the world. These are the New Pennsylvania and Commodore Hotel; the first-named containing 2,200 rooms with baths, and the latter 2,000 rooms with baths.

At a recent meeting of the Toronto Board of Education a motion was introduced embodying five points regarding schools additions. The points were: That no addition be made to a school where the class-rooms at present are more than 23 in number. That no addition exceed two stories in height. That a competent architect be secured to draw plans and specifications. That these be open to inspection by architects. That the work on such additions be proceeded with as expeditiously as possible, and that the Property Committee report progress at every meeting of the board.

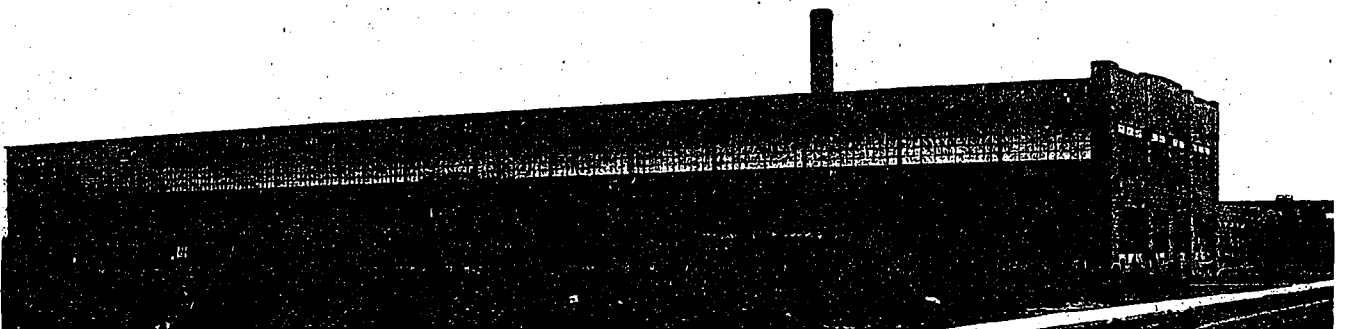
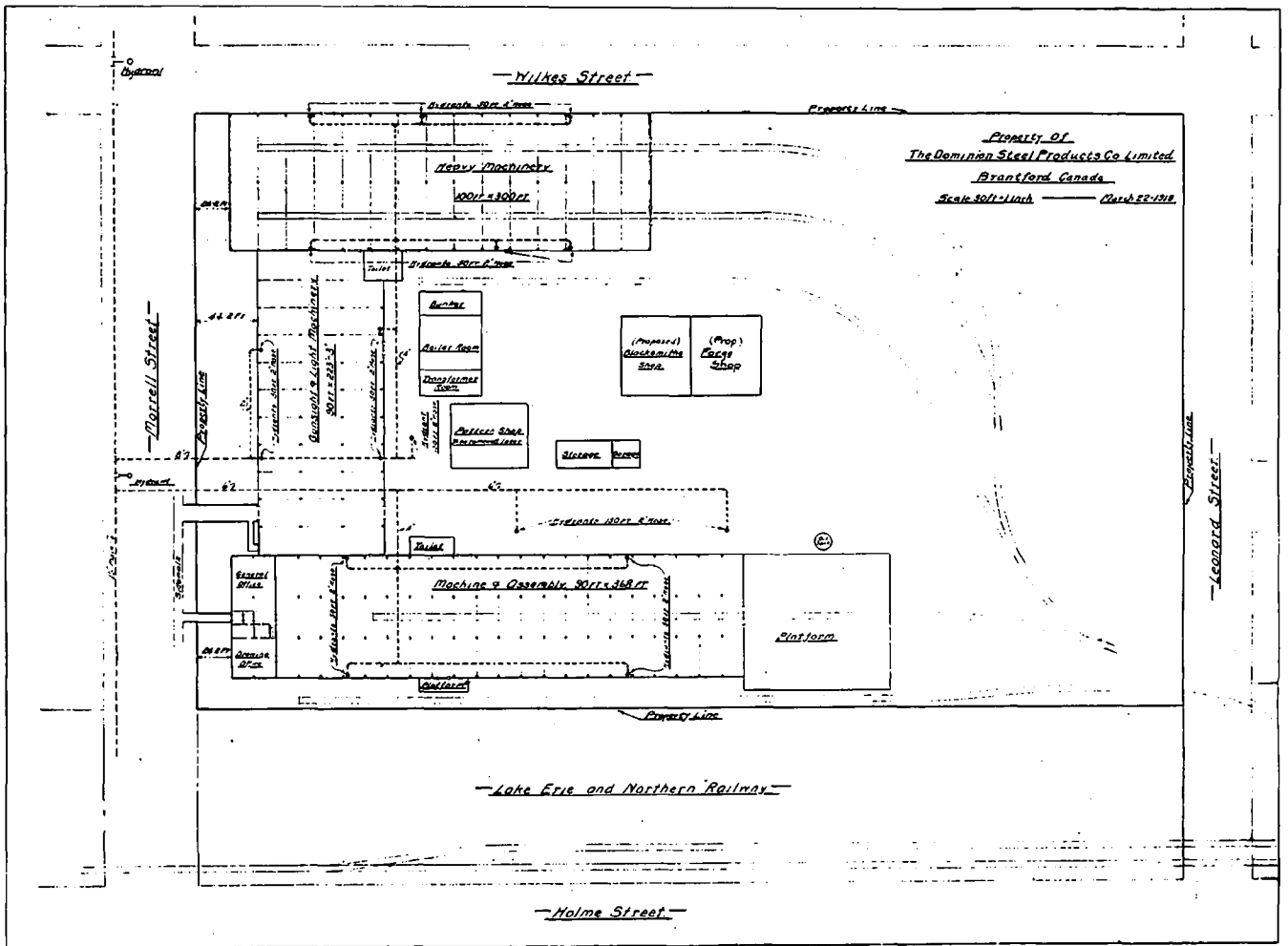
This motion was referred to the Property Committee.

A letter was read from the Board of Trade suggesting that in future the boards of assessors on plans for new schools should be composed of two trustees, one architect and one outside person who was not an architect.

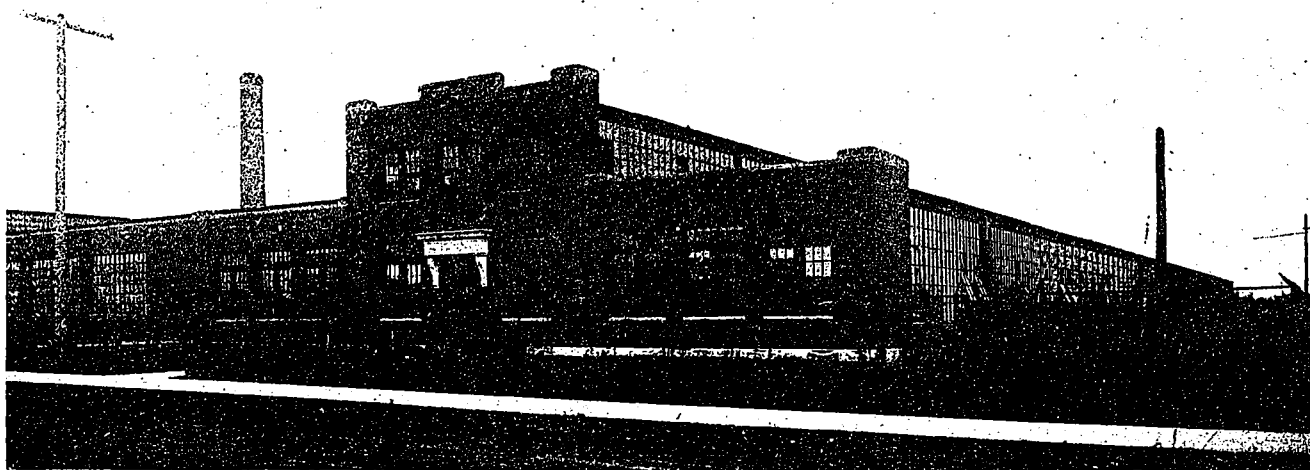
CONSTRUCTION



GENERAL EXTERIOR VIEW.



VIEW SHOWING "DAYLIGHT" CONSTRUCTION OF SIDE WALLS.
PLANT OF THE DOMINION STEEL PRODUCTS COMPANY'S, BRANTFORD, ONT.



OFFICE ENTRANCE INTO MAIN BUILDING.

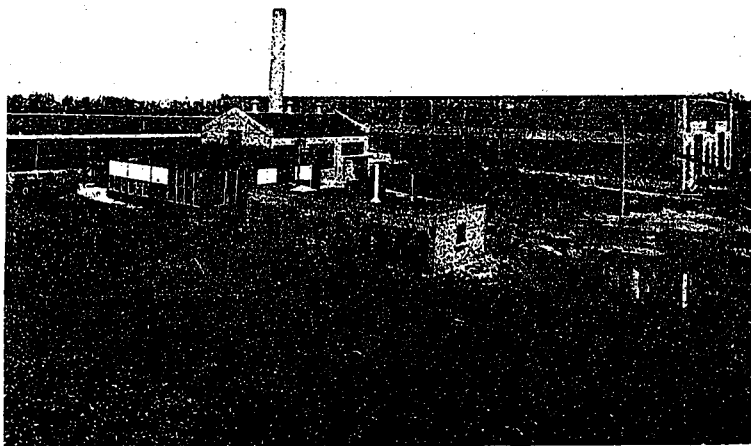
Dominion Steel Products Co.'s Plant

IT is doubtful if one can find in all Canada an individual record of the rapid growth to permanency and prosperity more striking than is furnished in the case of the Dominion Steel Products, Limited, of Brantford, Ontario. Barely three years ago the forerunner of this business was apparently a mushroom growth thrown up by the stimulus of war, a "war baby," as it were, destined by all signs to a brief span of commercial life and then a quick and sudden cessation of all activities. At that time the plant consisted of a wooden building, hastily erected, to turn out the only business on their books, which was the machining of 25,000 shells for the Imperial Munitions Board. However, the filling of this initial order was purely a business expediency adapting executive and engineering ability to an exigency of the times, and was incidental to, rather than the direct object of what the management had in mind, namely, the establishment of a permanent industrial plant. This is evident in the size and durable character of the buildings which have been erected, as well as in the modern housing scheme which the company is carrying out for the benefit of its employees.

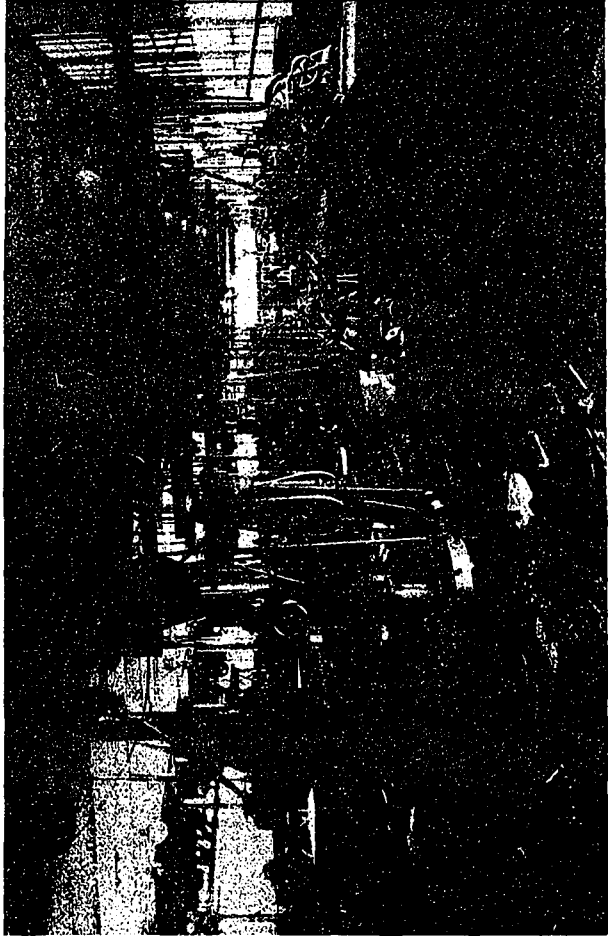
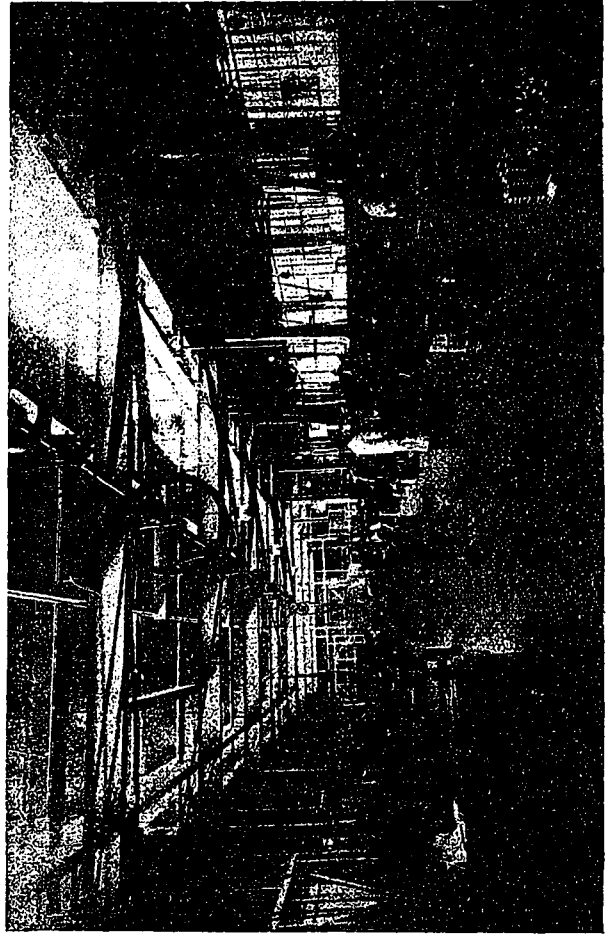
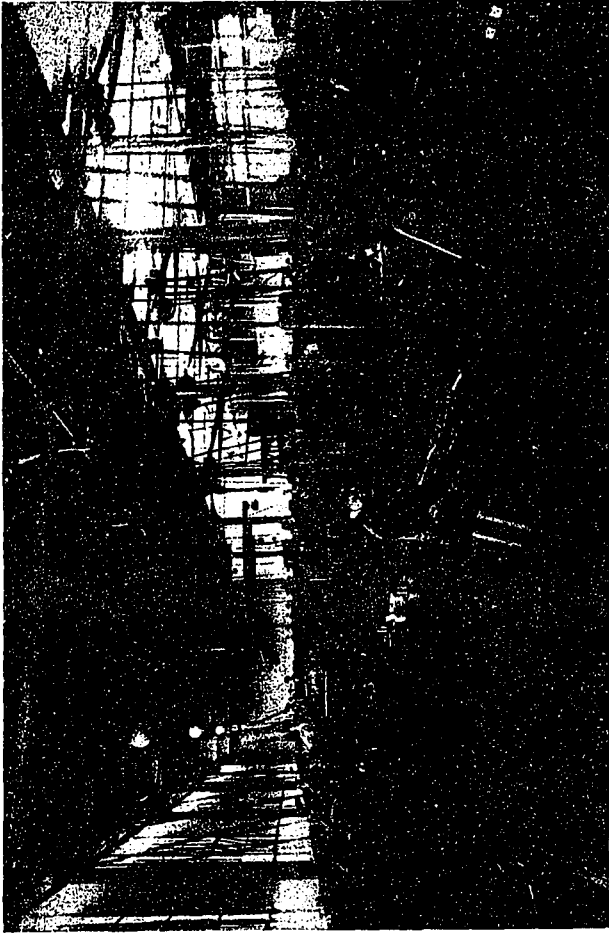
In other words, the idea of the directors from the first was to organize an industry

which would be capable of taking care after the war of normal trade requirements for manufactured steel products in the Canadian field. In consequence of this, a modern plant has been established and equipment of a standard type installed throughout. Under the impetus of increasing business, it has grown in a remarkably short time to its present dimensions, comprising a number of "daylight" units which cover in all six acres of ground and contain 85,000 square feet of floor area. The first building of the group was erected in 1916 and completed in 59 days' time. Two more units were started in the middle of January, 1918, and were ready for occupancy three months later. Besides the operating departments, there is a blacksmith and forge shop, boiler-house and transformer-room, pattern shop and storage located in separate buildings at the rear.

The construction throughout is of steel frame work, with brick enclosing walls and concrete floors and foundations. Side tracks from the main line of a railroad which passes alongside the rear of the property extend through the full length of both end buildings, thus affording excellent facilities for loading and shipping purposes. These end structures are



BOILER HOUSE, TRANSFORMER ROOM AND STORAGE.



LOWER VIEWS: SECTIONS OF NO. 1 AND NO. 2 SHOPS.

UPPER VIEWS: ASSEMBLY AND TOOL DEPARTMENTS

DOMINION STEEL COMPANY'S PLANT, BRANTFORD, ONT.

100 x 300 feet and 90 x 368 feet in size, and flank another department 90 x 223 feet at the front of the property. The several factory rooms are quite lofty in height, with very little overhead obstruction. Myriads of small windows set in the steel sash forming the side wall areas bathe the place in daylight. The machines, which range from the ordinary engine lathe to a fifteen-ton boring mill and a forty-ton planer, are all operated by electricity. While this machinery has been utilized in turning out war work, the policy of the company has been not to take on work which would involve the tying up of capital in special machines. Hence the equipment with one exception is of standard type, thus enabling the management to readily adapt its facilities to any of the various lines of steel products which they choose to manufacture.

Besides providing a working environment which gives the men well-lighted and well-ventilated departments in which to do their jobs, the company has undertaken as part of its development a housing scheme which is particularly noteworthy, especially in view of the housing problem at the present time being such an important and vital question. For this purpose the company has acquired a forty-acre site within convenient distance of the plant. That is to say, from four to six minutes' walk is all that will be required for the occupants to reach

their place of work. Notwithstanding this proximity, the plant is sufficiently remote so as not to intrude itself upon the domestic aspect of the scheme.

The creation of this residential area is in the hands of Messrs. Scott & Wardell, a firm of Hamilton architects, who are responsible for the designing of the various houses, while the ground features are being carried out by H. Dunnington Grubb, Toronto, the well-known landscape architect. Lansdowne Park Estate, as the place will be known, will have winding avenues and no straight streets. Trees and shrubs will be planted to give the various homes an attractive setting, and the appearance of the place when completed will be that of an English residential area. Further reference to this development, which is one of the first undertakings of its kind in Canada, is made in the following article, which takes up "Industrial Housing" in a more general way and forms in this connection an interesting and related subject. Already about fifty of these homes have been built, but are not yet all ready for occupancy. The company's investment in this development will be about \$4,500,000 for the first hundred houses. Rental charges to employees will be based on the carrying charge of the property. The houses are well designed, built of first-class materials, contain electric light, bath rooms, polished floors, electric kitchen stoves, and are complete and up-to-date in every way.

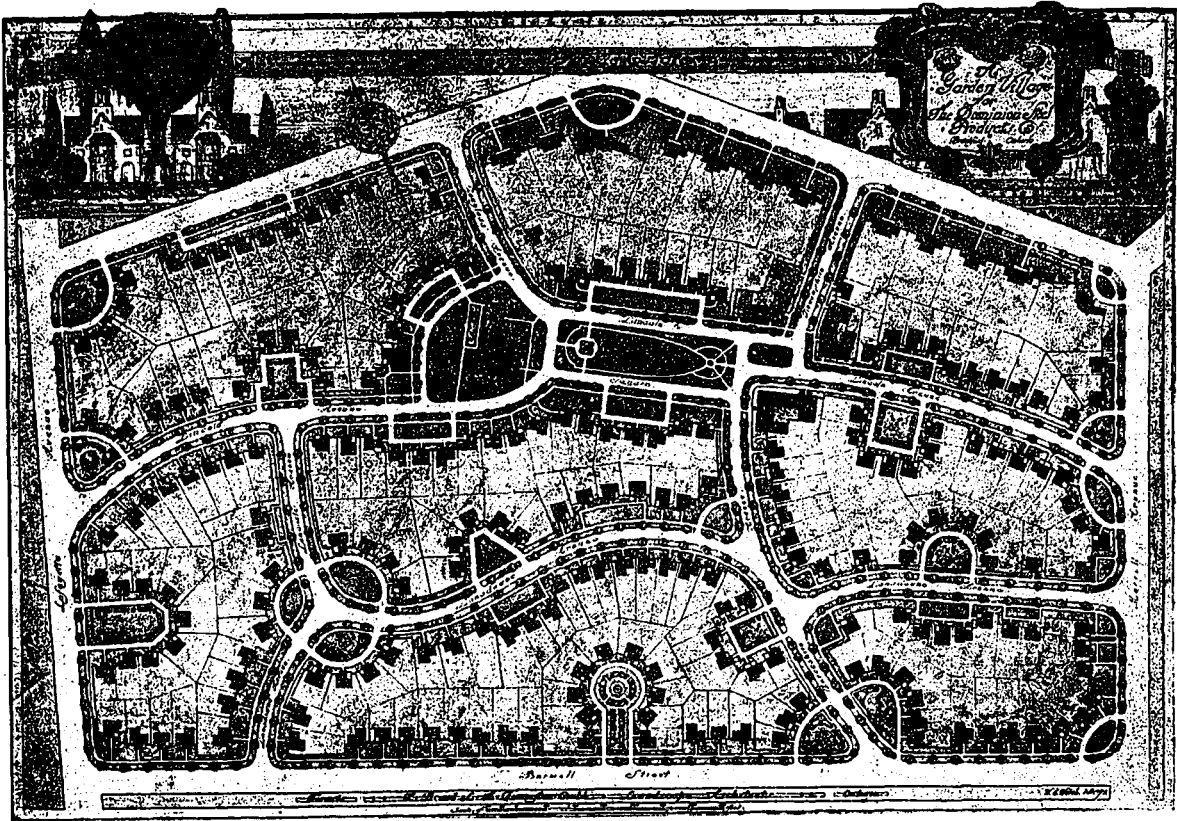
Industrial Housing

By H. B. Dunnington Grubb.

THE intelligent study of industrial housing, like almost every other social and economic problem, must begin with an examination of the effects of war. In 1914 a British statesman remarked that the outbreak of a European war would set back the march of social progress fifty years. The reverse seems to have actually occurred. In England the war has made possible a multitude of experiments in social reconstruction and co-operation which, in times of peace, could scarcely have been accomplished by a generation of agitation. Both employer and employed have found their most sacred principles not only challenged, but arbitrarily swept away. The fixing of prices, the rationing of necessities, the replacement of men by women, the limitation of profits, are all experiments which have passed through the test. The man in the street has taken thought. He is in the mood not only to retain many of the emergency war measures, but to experiment still further. As war measures he has witnessed

economies effected by co-operation which would, if carried further, result in inestimable stimulation of industry, and general prosperity. Within the next year we may expect to see a British Unionist Government pass such legislation as would have been described as the wildest folly by radicals before the war. Many of the injustices of our social system are about to be brought before the court of public opinion. One of the first to be remedied will be the matter of housing.

The relationship between a high standard of living conditions and production is just beginning to be realized. In all large cities we see a tendency for industry to move further and further away from congested centres of population. In some cases the movement is from the centre to several miles outside beyond the suburbs; in others the factory is moving from the large city to the small town, while the most recent movement of all is from the city to bare agricultural land, far removed from urban



GROUND SCHEME, LANSDOWNE PARK ESTATE DEVELOPMENT, BRANTFORD, ONT. H. B. DUNINGTON GRUBB, LANDSCAPE ARCHITECT.

conditions. Recent statistics in the United States show a much larger proportional percentage of industrial failures in congested areas than in thinly populated districts.

One of the principal underlying causes for this movement is the recognition by capital of the value of a high standard of living conditions for the worker. While the union is shouting conscription of wealth, whatever that may mean, higher wages and shorter hours, the operative is really more interested in improved living conditions for himself and his family than he is in a higher scale of wages, with which he imagines that he can equip himself with the amenities of life.

The United States Steel Corporation has placed so much emphasis upon the necessity for control of the housing and surroundings of its workers that instead of locating its new plants in any existing town it has created new town-sites for its workers, as at Gary, Ind., and Ojibway, Ont. This policy involved the purchase of vast tracts of land in each case, the expenditure of huge sums in the erection of dwellings, the provision of public services, such as pavements, sidewalks, sewers, gas, water and electricity. The experience at Gary proved so successful that the experiment is being immediately repeated at Ojibway, near Windsor.

At first sight the obvious advantages of locating in a city would seem to be so great as to make the creation of new townsites difficult to explain. Any city or town would offer almost

untold inducements to a great industry in order to obtain taxing power over thousands of well-paid employees. Accommodation of a sort would exist. No great sums of capital would have to be spent on city services, house-building, etc. A fluid labor market would be provided ready to hand. A brief examination of the possibilities of the townsite method, however, not only seems to explain the action of such great industries as the United States Steel Corporation, but also to forecast the time when smaller manufacturers will combine in order to obtain similar benefits, and finally the day when the state will step in and undertake the work which private industry is already finding so necessary that it must attempt it on its own behalf.

1. By the purchase of agricultural land on a large scale the corporation will be able to control land values, and so secure for their employee abundance of light, air and space at a much lower cost than would have to be paid for overcrowded accommodation in the city, possibly at a great distance from the works.

2. By retaining control of building operations the company will be able to protect the employee against exploitation by the speculative builder. The formation of building companies with limited dividend undertaking construction on a large scale will enable the tenant or purchaser to obtain better and cheaper accommodation than would be possible under (a) individual effort. (b) construction by the speculative builder.

3. By developing the tract as a whole and planning it out in a sensible manner:

(a) An enormous saving in the cost of public services can be effected. Seventy-five per cent. of the streets can be arranged to receive no through traffic. Pavements and sidewalks can be reduced to a minimum and be of lightest construction. Water and sewer mains can also be greatly reduced.

(b) The number of houses per acre and general density of population can be determined

overcrowding, with abundance of air and space for their families, and moreover at a lower rental than that obtainable for incomparably worse accommodation in the city, will produce a community likely to remain more happy and contented than the slum-dweller. Famine, hopelessness, misery and discontent, as President Wilson has pointed out, provide the ideal propagating ground for Bolshevism and social unrest.

Industrial housing in Canada is making a



LANSLOWNE PARK ESTATE, BRANTFORD, ONT., SHOWING TYPE OF HOUSES BEING ERECTED FOR THE DOMINION STEEL PRODUCTS COMPANY. SCOTT & WARDELL, ARCHITECTS.

and arranged for maximum health of parents and children.

(c) Parks, open spaces, play grounds, allotment gardens, etc., can be adequately provided.

(d) Public buildings of all sorts, including shops, schools, amusement places, etc., can be placed where most needed.

4. By retaining control of all the land the increasing land values, both on the part developed and also beyond, can be made to accrue for the benefit of the community, resulting in freedom from taxation or even a bonus.

5. By supplying a high standard of living conditions for the workman and his family an increased standard of output and efficiency will be obtainable. Modern cottages, free from

rapid start. The town of Ojibway, for the Steel Corporation, perhaps the most advanced example, is now well under way. In almost all our industrial centres an acute house famine exists, owing partly to concentration from country districts for war production and partly to so high a building cost that private speculative building capital has been diverted to other channels for the last four years.

In the city of Brantford, Ont., the shortage has been so great that well-to-do citizens have been compelled to come patriotically forward and offer to share portions of their houses with the munition worker and his family.

The Dominion Steel Products Co., Ltd., of Brantford, finding the housing of large numbers

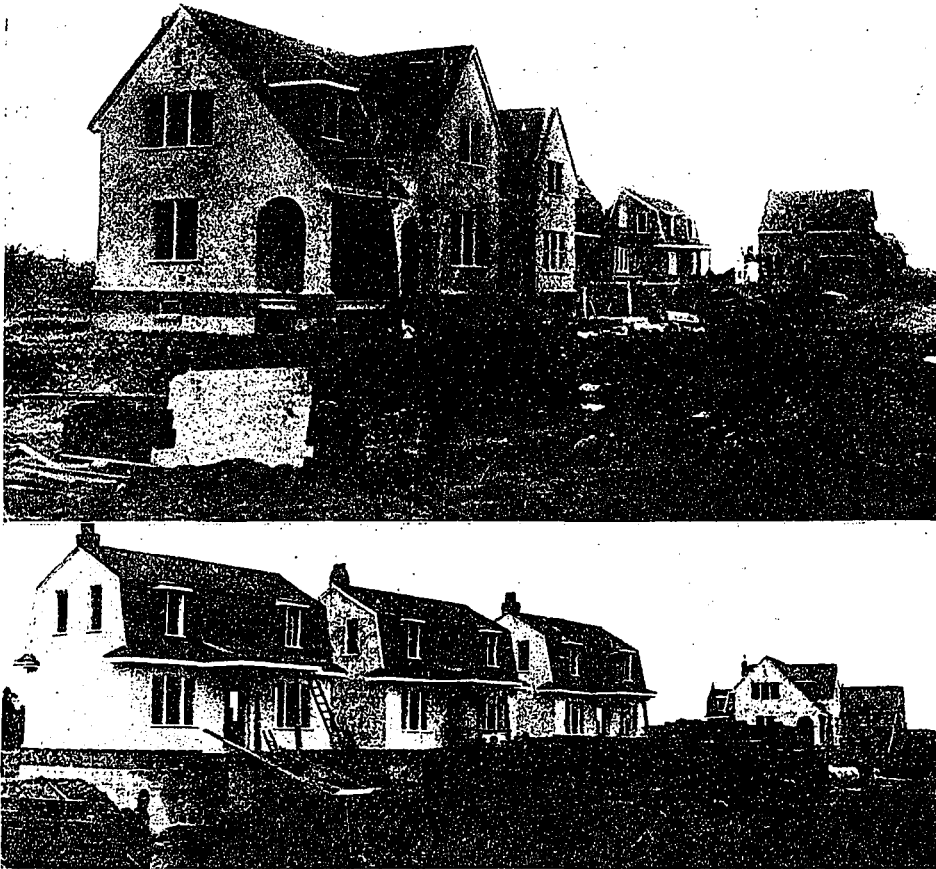
of additional mechanics an impossible problem, decided upon the construction of a large number of workmen's dwellings as the only possible solution of their problem.

With their new plant located well beyond the building fringe of the city of Brantford, the acquisition of some thirty-three acres adjacent to the plant and the building fringe was easily accomplished. As the land in this case was not agricultural in price, and as the area involved was small, the enterprise must be classed as a

lowest possible assessment against frontage for improvements.

The central motive for the scheme is the village green, around which are grouped residences and the few public buildings, such as stores, entertainment hall, etc., which would be needed. The street plan follows closely the contours of the land.

A definite effort has been made to arrange groups of houses as units and courts for the sake of privacy, seclusion and architectural



PROGRESS VIEWS, LANSDOWNE PARK ESTATE DEVELOPMENT, BRANTFORD, ONT. SCOTT & WARDELL, ARCHITECTS.

workmen's model suburb rather than a town-site.

The design of thirty-three acres as a model workmen's garden suburb will be governed by principles varying greatly from those controlling a townsite. In the former case the property, while forming to some extent an entity in itself, will also have to be treated as a small section of a larger whole; in this case the city of Brantford. A glance at the plan will show that no through traffic has been provided, indeed, a conscious effort has been made to prevent it, as excellent facilities already exist all round the boundaries. As a result the streets will be private and quiet, but, most important of all, they can be constructed of minimum width (eighteen feet), and light construction, thus insuring the

effect. It has been hoped that by this method some sense of pride, and even competition, in the appearance of each court or unit might be acquired by the tenants. In some cases, at least, special names might be given to the courts. The perspective sketch shows a suggestion for the treatment of a typical court.

As will be seen from the plan, a definite attempt has been made to close the vistas of all streets in order to provide the greatest possible number of street pictures.

The architects, Messrs. Scott & Wardell, of Hamilton, have developed some ten types of houses of varying size and design, but all possessing a quiet, harmonious English domestic character. Out of some two hundred and fifty house sites arranged for on the property, fifty

houses are now in process of erection. Owing to the very high wages prevailing at the time, it was thought that tenants would prefer detached houses in spite of the additional cost.

As the scheme is still far from completion exact figures as to cost, including land, house, improvements and general services, are not yet available. As the development has gone forward during the period which will probably form the highest peak of prices, the cost will probably provide no useful example as an indication of building costs for future efforts in industrial housing.

In any case, it may be said quite conclusively that the type of houses under construction are entirely out of the reach of the average factory operative, as rents ranging from \$30 to \$40 per month will have to be charged in order to pay minimum interest upon the investment.

For this reason the work now being done can hardly be said to solve the real problem of industrial housing, which demands model houses at rentals of from \$18 to \$25 per month.

The lines along which economies will have to be effected in order to make such rents possible have already been indicated. They may be summarized as follows:

1. Cheaper land by moving the factory out, either singly or co-operatively.
2. Skilled planning which will concentrate traffic on a few wide streets and permit of lightest construction of pavements, curbs, sidewalks, sewers, etc., on the secondary streets.
3. House construction on a large scale, providing for economy in purchasing.

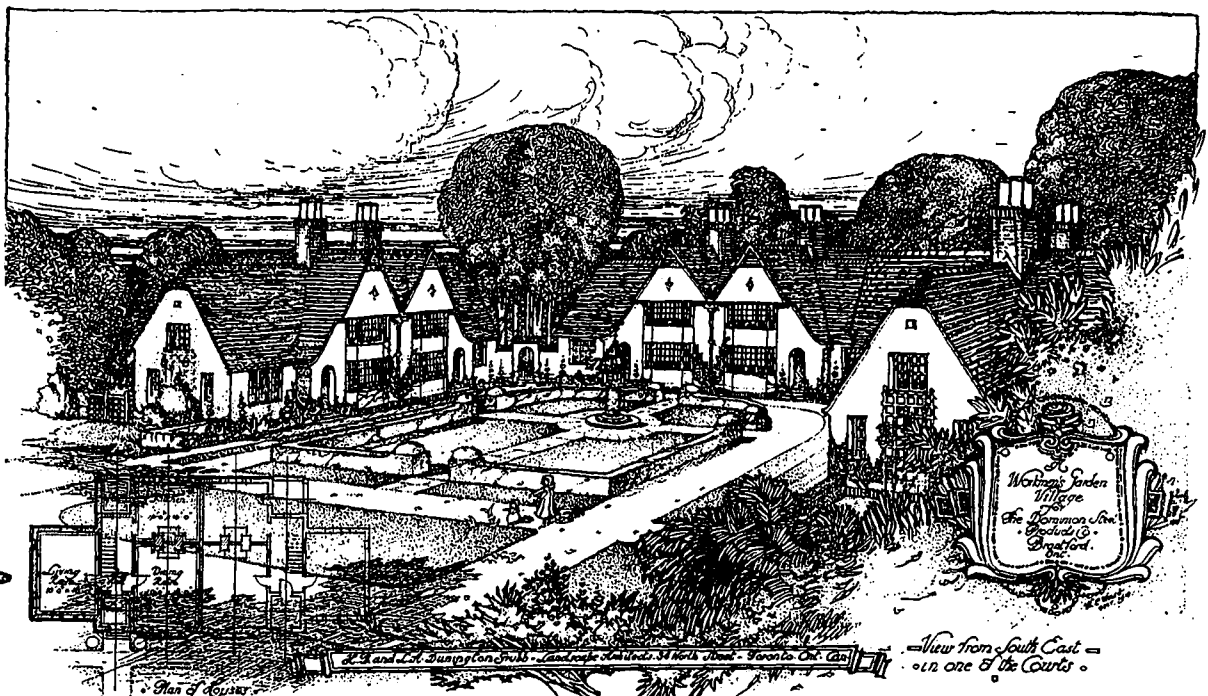
4. The construction of houses in connected blocks and courts, avoiding the extravagance of detached houses.

No building of small workmen's cottages has been done during the last four years. Prices still remain so high that little will be done in future by speculative builders except by overcrowding. This must at all costs be avoided. ed for on the property,

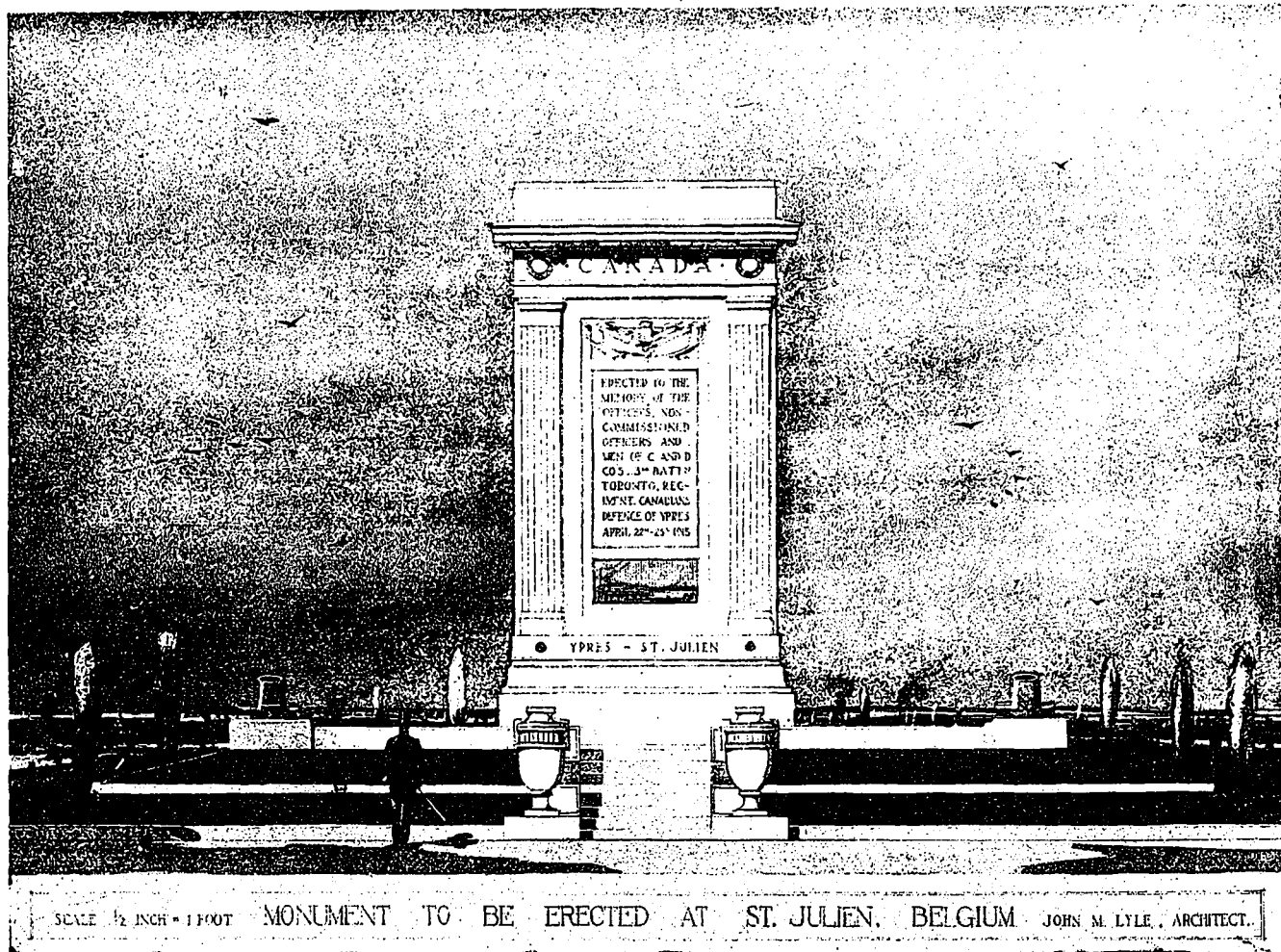
Vancouver Permits

Building operations in Vancouver, B.C., continue to show an improvement. The volume of new work for the first three months of this year amount to \$269,020, as against \$181,480 for the same period in 1918. The total for March was \$119,013, which is a substantial gain over the corresponding period of last year. It is reported that the outlook is most favorable.

It is understood that the Province of British Columbia is planning to co-operate more closely with the lumber trade in endeavoring to obtain permits from the British Admiralty to ship lumber overseas. The demand in France and Belgium for lumber is enormous, and the only obstacle in the way of Canada securing a portion of the contracts is the difficulty encountered in transportation. It is also reported that an active effort is being made to increase the home market by going after business for British Columbia lumber in the other provinces. The scarcity of houses, together with materials required for other classes of work, it is felt, should greatly stimulate the demand.



PERSPECTIVE VIEW SHOWING THE RELATION OF THE HOUSES TO THE SITE IN THE BRANTFORD SCHEME AS IT WILL APPEAR WHEN COMPLETED.



DESIGN OF PROPOSED SCHEME TO COMMEMORATE THE GALLANT DEFENSE OF "C" AND "D" COMPANIES, THIRD BATTALION AT YPRES.

Memorial to be Built on Historic Site

A movement has been set on foot to erect a monument at St. Julien, Belgium, to commemorate the heroic sacrifice of C and D Companies of the Third Battalion (Toronto Regiment) at the defence of Ypres on the 22nd to the 25th of April, 1915. On that memorable occasion these two companies belonging to the First Brigade were sent to the support of the Second Brigade. Probably due to this, their existence was overlooked until it was too late for them to be withdrawn. Under most trying circumstances they succeeded in digging themselves in, making a file between St. Julien and St. Julien Wood where they remained many hours after all other Canadian and British units had retired. The forty odd that finally surrendered when their ammunition was expended and the Germans had completely surrounded them, were taken prisoners.

Colonel Kirkpatrick, then Major, and Major Streight, then Captain, were the officers in command. In short these two companies were completely wiped out, but held the position long enough for the other forces to fall back to a line further to the rear, thus typifying

the bravery and tenacious fighting qualities that have won for the Canadians both lasting fame and the distinction of having saved Ypres in this historic engagement. It is in some way to permanently perpetuate the valorous deeds of their comrades that the officers of the Governor-General's Body Guards and the Tenth Grenadiers contemplate erecting this monument on the site of their gallant defence.

Fortunately the carrying out of the monument is to be entrusted to capable hands and it is sincerely to be hoped that a like course will be followed in regard to all memorials to be undertaken by Canadians either in this country or in Belgium and France, instead of the customary practice of turning over such work to ordinary mortuary architects.

Canada and the United States are already covered with cemeteries which suffer a blight of monuments erected from hideous designs and executed in a slovenly manner. This is due to the fact that the prevailing idea among the lay public is that the designing of monuments is entirely outside the province of the architect,

(Continued on page 130.)

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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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Another Case of Outside Preference

Such slogans as "Patronize Home Industry" and "Keep the Money in the Country" represent an incalculating principle which is economically sound. But how often is this very fine preachment respected only in the breach by some of its staunchest advocates. There are still high protectionists among the manufacturers, and certain financial institutions doing business with the money of Canadian depositors, who still regard themselves as being exempt from any obligation which involves similar patronage and protection for others. A striking proof of this is the large number of buildings in Canada which have been designed and erected by American architects, and in regards to which Canadian interests and capabilities have been completely ignored. It represents a condition which extends back a number of years, which was especially noticeable during the war,

and which still persists to the detriment of important professional and industrial branches of our national life. A recent instance is cited in the following letter sent to the Mayor and Council of Vancouver, the Board of Trade and Manufacturers' Association of that city, and to the Premier, Attorney-General and Speaker of the Assembly of the Province, protesting against the practice of outsiders in British Columbia. While referring specifically to the new Union Bank building to be erected on the Coast, the complaint is a general one, and shows the necessity of legislative enactment to conserve the opportunities for technical practice in Canada for those who are *bona-fide* residents. The reference which is made to restrictive legislation recently passed in Washington and Oregon which debars Canadian architects and engineers from doing work in those states is not in itself a serious grievance. It merely points to a principle which is heartily to be commended and which should speedily be adopted in this country as a sound economic measure. The subject, which has long been discussed and which is entitled to earnest consideration, is fully dealt with in the letter in question.

Gentlemen:—

The Architectural Institute of British Columbia would like to bring to your notice a matter which is of the greatest moment to the architects and other technical men of this province.

The Institute does this more especially because it is aware of the expressed views of the Board of Trade, Manufacturers Association, and other societies, that support should be given to Canadian industry and business endeavor in preference to that outside of the country.

Complaints have been continuously made by architects, engineers, contractors and manufacturers of materials in this country that an injustice is being done to them in that a very large amount of construction work in this Province has been for several years back, and still continues to be, designed and erected by American architects and engineers, and that these outside firms in many cases have not even branch or temporary offices here. In an event they are non-residents of Canada, and it is only reasonable to assume that the profits they make are entirely lost to the country.

Moreover, it is noticeable that the absence of patriotism and public spirit on the part of owners who employ outsiders to erect their buildings, is more particularly exhibited by those persons, firms and corporations who directly seek the support and make profit out of the Canadian public. While objecting to foreign competition themselves, they entirely disregard all moral and business obligations to patronize and support such as may be possible of various branches of Canadian endeavor carried on in their midst, and by sections of the public to whom they appeal for patronage and support.

The Union Bank is the latest instance where the public of British Columbia is asked to support and give profit to a company whose first move in building their new premises on Hastings Street, is to ignore the resident and engage American architects who do not permanently reside in this country, although they maintain a branch office in this city (Vancouver) during such periods as they have work here.

The architects of this province consider that in the case of the Union Bank there is no justification whatever for the selection of an outside architect, because, in April, 1917, the Architectural Institute addressed a very lengthy communication to the General Manager at Winnipeg, setting forth in very definite form the claims of resident British architects, and to which a reply was received stating that "we will give your request the full consideration it deserves when we decide to build."

The resident architects, including some of those who have seen service at the front, consider that they have just ground for complaint in respect to this and other cases. Not merely because they have not received the consideration they might reasonably expect, from business, if not from patriotic motives, but also because the architects engaged are residents of the State of Washington, which, together with Oregon and other states, have recently passed legislation at the request of the architects there, making it an offence punishable by fine and imprisonment for Canadian or other British subjects to practice as architects in those states, the privilege of so doing being strictly limited to the citizens of those states.

Canadian architects do not object to fair competition, but they do object to being discriminated against, and consider that American architects practicing in this province should become British subjects and reside in Canada if they are to be engaged by firms and corporations seeking and asking Canadian support and preference.

It is therefore with the full conviction that this protest has your complete sympathy and approval that it has been brought to your notice with a plea for your support to remedy this con-

dition of affairs, and a recognition of the fact that Canada has within her borders, residents fully qualified and capable of undertaking and carrying on all the various forms of professional and commercial endeavor and that these residents should be given preference.

(Signed) Hon. Secretary.

Advisory Committee on War Memorials

War memorials at the present time form the subject of much public interest and discussion. Consequently the announcement that the Ontario Society of Artists, the Ontario Association of Architects and the Society of Graphic Arts have appointed from their membership a joint committee to be known as the Ontario Advisory Committee on War Memorials is both timely and important. There is a feeling, considering the number of proposals advanced, that a condition is liable to arise which might lead to considerable misunderstanding and unfortunate results unless such projects are brought under competent control and direction. The interest of this newly-formed board is purely an altruistic one, with the object of having all memorials erected so as to be artistically and otherwise worthy of the lofty purpose for which they will stand. The committee has issued a circular, which reads as follows:

It is intended that this Committee shall be available for consultation and advice and shall act as a Bureau of General Information on all matters pertaining to War Memorials.

The members of this Committee serve without remuneration and the services of the Committee are placed freely at the call of officials, committees and private individuals throughout the Province.

Naturally War Memorials may assume very many and very widely varying forms. Tablets, stained glass, symbolic figures and groups, gateways, arches, fountains, bridges and buildings of many kinds may be instanced as a few of the many possible forms. A recognition of the difficulties that local bodies are likely to experience in securing necessary information and advice, when the range of choice and treatment is so wide, has prompted the appointment of this Advisory Committee which may be consulted on the choice among various forms of memorials, on the methods of selecting a designer and a design, and on the ways and means generally of initiating the work, carrying it forward and bringing it to a satisfactory conclusion.

It should be clearly recognized that in all such memorials whether large and costly, or small, simple and inexpensive it is the art impress they bear that alone can give them a permanent value as fitting memorials of the dead and an inspiration to the living. It is hoped that the Advisory Committee may be of valuable service in assisting local committees toward making their memorials worthy in an artistic way.

It is certain to be a matter of lasting regret if hasty judgment and ill-considered decision should result in the erection of a memorial that; later on, would be found so seriously wanting in an artistic way as to be quite unworthy of its high purpose.

Local Committees are therefore advised to "make haste slowly" especially as it is felt also that every memorial however simple, should be to the fullest extent possible an original creation, and not one that may be repeated indiscriminately and many times throughout the country. In this way every memorial would take on an individuality of its own and become a special tribute on the part of the

committee erecting it, one which the community might regard with justifiable pride as something peculiarly its own.

It is therefore recommended to local committees that before the adoption of tentative plans, and preferably before any plans are made requests for suggestions should be presented to the Advisory Committee. These may be addressed to the Secretary, Ontario Advisory Committee on War Memorials with the assurance that they will receive the most careful consideration on the part of the Committee.

Finally it should be made clear that this Committee desires to be helpful, not to dictate, that it is not interested in any particular form of memorial, nor in any particular designer, craftsman or manufacturer, and that the only end it has in view is the ensuring that the War Memorials throughout the Province shall be, in as high a degree as possible, worthy of the community and the cause.

A. S. Clarson

A. S. Clarson, who has just been appointed General Secretarial Manager and Permanent Organizer of the Association of Canadian Building and Construction Industries, has already assumed his duties, with headquarters in Ottawa. After spending the next few weeks in Montreal and Ottawa, Mr. Clarson will make a trip covering the principal cities in the Dominion for the purpose of organizing branches in accordance with local conditions.

The association is national in its scope, and was organized over a year ago, in the first



Mr. A. S. Clarson, General Secretarial Manager and Permanent Organizer of the Association of Canadian Building and Construction Industries.

instance through the efforts of J. P. Anglin, then President of the Montreal Builders' Exchange. It was, however, during the early part of the present year the organization was permanently established and officers elected at a conference held in Ottawa, where the outstanding feature displayed was the feeling of good-fellowship and co-operation evinced by the hundreds of members present.

The association will co-operate with the National Reconstruction movement inaugurated



Made in Canada

Twenty Years' Service Guaranteed!

ON a building like this, the use of a Barrett Specification Roof was practically compulsory.

The roof is large, flat and permanent:

—large enough to justify bringing a gang of skilled roofers to the job,

—flat enough so that the hot pitch would not flow away from the roofers' mops,

—permanent enough to justify a twenty-year roof.

Accordingly, a Barrett Specification Roof was eligible for the job.

The next thing was to compare the Barrett Specification Roof with other suitable roofings.

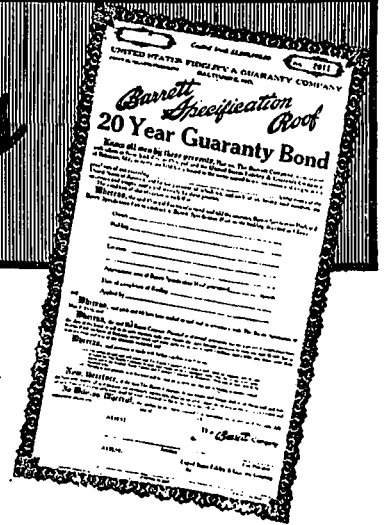
Durability? A guarantee for twenty years came free with the Barrett Specification Roof.

Satisfaction? No leaks for twenty years is good enough.

Cost to build? Lowest of all permanent roofings.

Cost to maintain? Nothing! (You can't beat *that* figure.)

Cost per year of service? Lowest known to man.



This is the bond that guarantees your roof for twenty years.

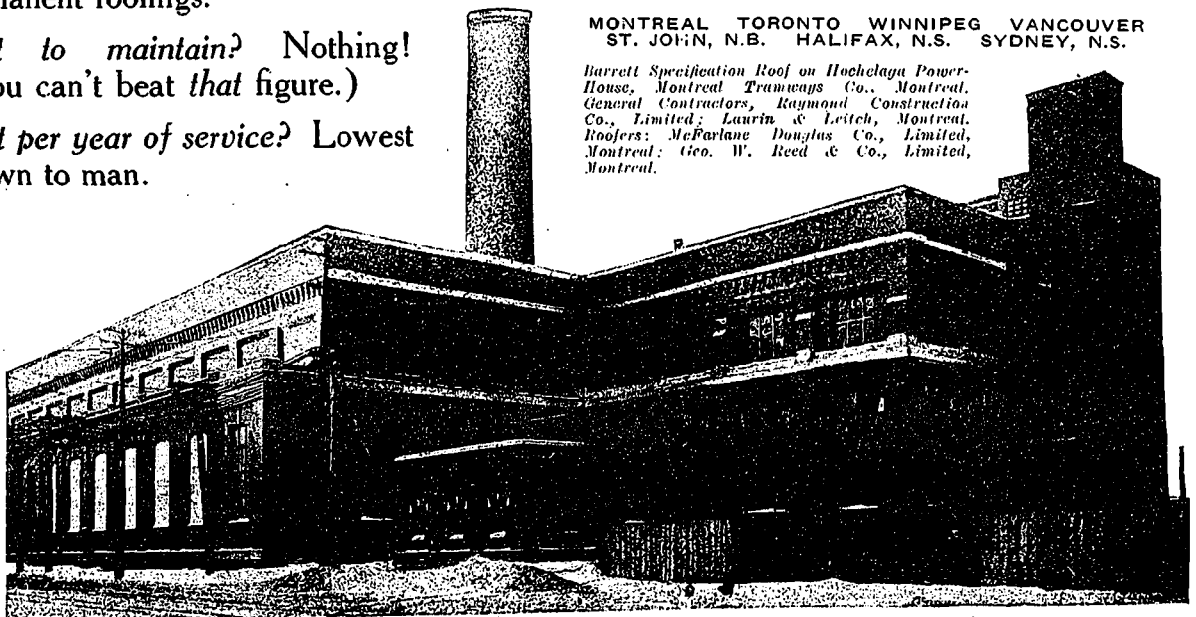
An important feature of Barrett Service is the 20-Year Guaranty Bond issued free, subject to suitable regulations, by the Barrett Company Limited, regardless of the fact that The Barrett Company, Limited, merely supplies materials and does not itself lay roofs. The roof below, for instance, was built by McFarlane Douglas Co., Limited, and George W. Reed & Co., Limited, of Montreal. The Barrett Company, Limited, was notified and it sent inspectors to check up the work and issued to the owners the Barrett 20-Year Guaranty Bond.

A copy of *The Barrett 20-Year Specification*, with roofing diagrams, sent free on request.

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Barrett Specification Roof on Hochelaga Power-House, Montreal Tramways Co., Montreal. General Contractors, Raymond Construction Co., Limited; Laurin & Leitch, Montreal. Roofers: McFarlane Douglas Co., Limited, Montreal; Geo. W. Reed & Co., Limited, Montreal.



by the Government, and was organized for the purpose of stabilizing all Canadian construction industries, and will be supported by voluntary contribution until the next general conference adopts a complete constitution for its operation.

Mr. Clarson is an Englishman by birth, and was educated at one of the largest English Public schools, and later at Mason's College, Birmingham (now Birmingham University). He has had over thirty years' engineering experience and business connection on a large scale in various parts of Great Britain, Ireland and the United States, and during the past ten years has resided in Montreal, where he has practised his profession as a consulting engineer in the city of Verdun, P.Q., and other municipalities. He is an Associate Member of the Engineering Institute of Canada; Member of the National Highway Traffic Association, New York; American Road-Builders' Association; Fellow of the Royal Colonial Institute, of London; Member of the Montreal Board of Trade; Justice of the Peace for the city and district of Montreal; President and Life Member of St. George's Society, of Montreal; Chairman of the Joint Committee of the National and Kindred Societies of Montreal, and President of Christ Church Cathedral Men's Club.

REGINA WAR MUSEUM COMPETITION.

According to a recent news despatch, conditions of a competition for the selection of an architect for a Provincial War Memorial Museum to be erected at Regina, Sask., have been announced by Hon. Archie McNab, Minister of Public Works. The successful architect will be given the commission for the work, while a limited number of those whose designs are favorably assessed will be awarded prizes of a thousand dollars each.

Moved to New Offices

Alcide Chaussé, Architect, has removed his offices from No. 367 Beaver Hall Square, to No. 72 Notre Dame Street East, Montreal.

Memorial to be Built on Historic Site (Continued from page 126.)

which of course, is not the case. An effort should be made to correct this erroneous impression. The architect and the sculptor should collaborate in the production of all work of this character and especially as regards our illustrious dead. In fact, all monuments and memorial buildings should by their beauty of detail, excellence of execution and general architectural merit typify the high ideals which called for their erection. In either case, they should be made the most beautiful monument,

or the most beautiful building in the community so as to be worthy of the great purpose for which they stand and represent aesthetically the noblest emotions of our race.

A HANDY BOOK OF INFORMATION.

The eighth edition of the Trussed Concrete Steel Company's catalogue, just issued, is a very complete handbook of vest pocket size. Besides describing the principal "Truscon" products, it contains a number of tables giving the safe loads for various types of floors and concrete beam design. The illustrations show practical constructive methods involving the lines this company manufactures, and there is much useful information which makes it a book of special value to architects, owners and building contractors.

CONTRACTORS and SUB-CONTRACTORS

As Supplied by the Architects of Buildings
Featured in This Issue.

OFFICE BUILDING, THE JOHN BERTRAM & SONS CO.,
LTD., DUNDAS, ONT.

Automatic Telephones, Chicago Automatic Electric Company.
Brick, Aulon Fressed Erick Company.
Boilers, Dominion Radiator Company.
Clock System, International Business Machine Company.
Electrical Work, Culley & Brey.
Fire Protection System, Anguish & Whitfield.
Flooring, P. H. Secord & Sons, Ltd.
Galvanized Iron, Wilkinson & Kompass.
General Contractors, P. H. Secord & Sons, Ltd.
Granite and Bedford, McIntosh Granite Company.
Gypsum Block, Ebsary Gypsum Block.
Heating, Anguish & Whitfield.
Hollow Tile, National Fire-Proofing Company.
Metal Doors and Steel Sash, A. B. Ormsby Company, Ltd.
Metal Lockers, Dennis Wire & Iron Works.
Metal Locker, Benson Johnson Co.
Marble and Tile Work, Canada Glass, Mantels & Tiles, Ltd.
Ornamental Iron, Architectural Bronze & Iron Works.
Painting and Glazing, F. G. Roberts & Company, Ltd.
Plastering, P. H. Secord & Sons, Ltd.
Plumbing, Anguish & Whitfield.
Radiators, Dominion Radiator Company.
Roof Covering and Sheet Metal Work, John E. Riddell & Son.
Steel Desks, Office Specialty Company.
Structural Steel, Hamilton Bridge Works.
Vacuum Cleaner System, Anguish & Whitfield.

PRATT & WHITNEY BUILDING, DUNDAS, ONT.

Cement, Canada Cement Company.
Concrete Work, P. H. Secord & Sons.
Dumb Waiter, Otis-Fensom Elevator Company.
General Contractors, P. H. Secord & Sons, Ltd.
Granite Door Sills, Ritchie Cut Stone Company.
Hardware and Slate Work, Kent, Garvin & Company.
Hardwood Flooring, P. H. Secord & Sons, Ltd.
Heating and Sprinkler System and Electric Lighting, Bennett
Hollow Tile, National Fire-Proofing Company.
Lathing and Plastering, R. C. Dancy.
& Wright.
Painting and Glazing, F. McQuillan.
Plumbing, Chas. Taylor & Company.
Reinforcing Steel, Bains & Feckover.
Roofing and Sheet Metal Work, Thomas Irwin & Son.
Steel Sash, A. B. Ormsby Company.
Steel Fence, Frost Steel & Wire Company.
Structural Steel and Stair Railings, Dennis Wire & Iron Works.
Wire Partition, Dennis Wire & Iron Works.
Waterproofing, Toch Bros, R.I.W., and Wadsworth & Howland.

DECORATIVE SCHEME OF ST. JAMES' METHODIST CHURCH, MONTREAL.

Lighting Fixtures, Robert Mitchell Co.
Painting, Henry Morgan & Company.
Upholstery and Curtains, Goodwins, Ltd.

DOMINION STEEL PRODUCTS COMPANY'S PLANT, BRANTFORD, ONT.

Boilers, Waterous Engine Company.
Brickwork and Foundations, P. H. Secord & Son.
Electrical Work, Factory Products Company.
General Contractors, Austin Company.
Lavatory Equipment, James Robertson Company.
Plumbing, T. J. Minnis.
Radiators, Dominion Radiator Company.
Steel Sash, Trussed Concrete Steel Co.

DOMINION STEEL PRODUCTS COMPANY'S WORKMEN HOUSES, BRANTFORD.

Furnaces, Buck Stove Works.
General Contractor, D. O. Johnson.
Heating, Taylor & Son.
Plumbing, Taylor & Son.

SASKATCHEWAN TUBERCULOSIS SANATORIUM, NEAR FORT QU'APPELLE.

Electric Work, G. A. Espley.
General Contractors, Poole Construction Company.
Heating, Cotter Bros.
Mill Work, Cushing Bros.
Plastering, Harrington Bros.
Painting, W. R. Talbot.