The Architectural Review

# CANADA

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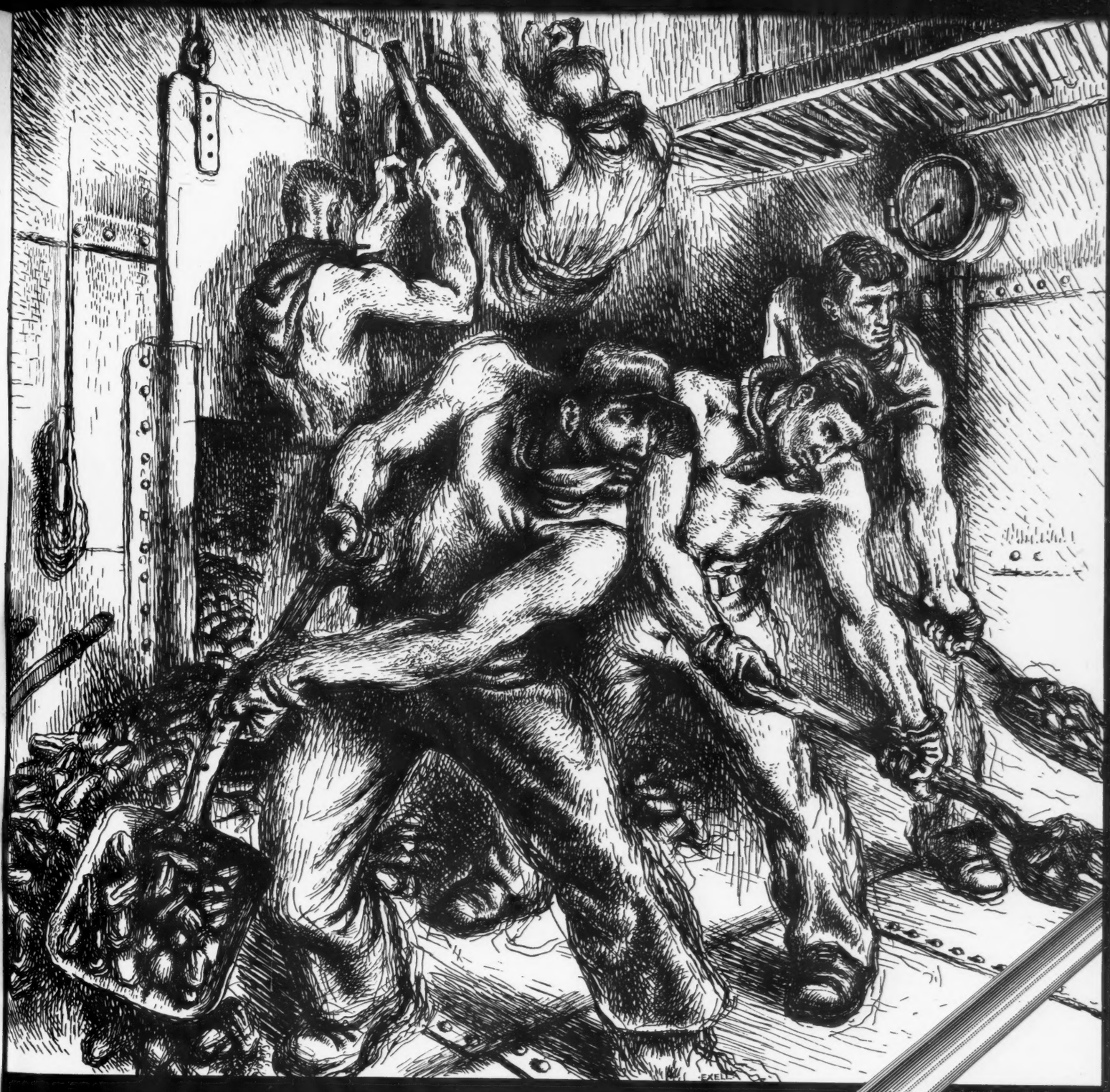

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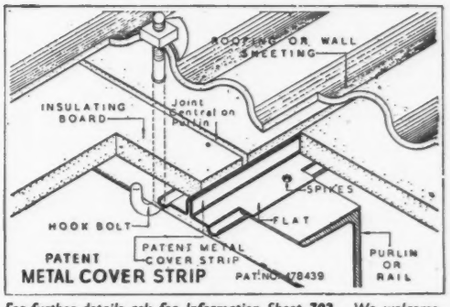


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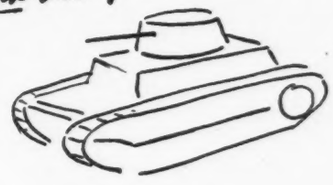

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|---|---|---|---|
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| ¼" | 70" | 52" | Sizes over 9 ft. super to be in 17-20/64 ins. |
| 5/16" 3/8" | 82" | 70" | Also strips 9 ins. to 18 ins. wide × 110 ins. long. |
| ½" | 82" | 70" | |
| ⅝" | 70" | 52" | |
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*"ARMOURPLATE" can be supplied in most shapes if not too irregular. Any unusual shapes should be submitted for our consideration.*

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*This is published by Pilkington Brothers, Limited, of St. Helens, Lancashire, whose Technical Department is always available for consultation regarding the properties and uses of glass in architecture.*

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*The Architectural Review*

**APRIL, 1942**

# C A N A D A

It is a truism how ignorant the Briton is of his own Empire, and it is another truism that the story of a nation can be read in its buildings. The pages that follow are an attempt to remedy the state of affairs described in the first of these statements by means of the technique suggested in the second, in respect of one portion of the Empire—namely the Dominion of Canada.

The most interesting point about these pages is that they have been prepared by Canadians. Usually foreign countries—and Canada *is* a foreign country, whatever sentimentalists may pretend to believe; that is the Imperial achievement, to reconcile separateness with unity—usually foreign countries are interpreted by returned travellers whose observation, however acute, is bound to be superficial and for whom the spectacular tends to gain precedence over the fundamental. But here Canada speaks for herself, with some of the diffidence natural to the autobiographer, with surprisingly little of the aggressiveness we might expect from a nation that has suffered as Canada has from the patronage of Europe, and with the knowledge of history only possible to those who have lived through it.

In order to depict a nation through its buildings they must be looked at from a wide angle, one that includes the settings they inhabit, the climate they combat and the kinds of livelihood they serve, as well as their more particularly architectural quality. In a necessarily brief fashion, the first portion of this issue attempts to cover the general background and traditions of Canada—many will be surprised how well-founded the latter are in a so-called young country—and the later portion gives an equally brief survey of the recent architectural scene. All buildings included in this section are less than five years old. They have therefore been built, it should be remembered, during three years of deflation and two of war. The compilers of the material wisely decided that a general view of a number of recent buildings would be more useful than a particular examination of a few. Plans have therefore been generally omitted in order to make way for photographs, and buildings have been chosen so that as many types as possible shall be represented, as much as for their architectural eminence.

This issue, however, must speak for itself. Its Canadian compilers introduce their own country overleaf. It only remains to acknowledge THE ARCHITECTURAL REVIEW'S great indebtedness to Mr. Anthony Adamson of Port Credit, Ontario, who has been chiefly responsible for it, to the Royal Architectural Institute of Canada, who have officially supported it, and to various others who are named in the last pages. It is only to be regretted that war-time limitations of space (over which we have no control) have prevented a great subject being displayed more fully.

THE EDITOR

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*Although it is true that there are many Canadas besides that which is represented by the limitless wheatfields of the prairie provinces depicted above : between the frozen rocks of Labrador and the sheltered islands of the warm Pacific coast there are as many varieties of landscape as the whole of Europe can muster : nevertheless, if we are looking for a single scene to take as a symbol of Canada, we might do much worse than accept for a moment the popular conception of the Dominion and choose the wide open spaces of Manitoba and Saskatchewan. For their boundlessness and superhuman scale do suggest those aspects of the Canadian scene that are most unmistakably of the new world. Their immense skies are its most memorable pictorial motif and their unbroken horizons suggest its characteristic outlook towards the future—rather than towards the past, which Europe is so inescapably reminded of in its own surroundings. Here, then, is Canada as the Englishman most frequently and not inappropriately thinks of it. On the following pages Canadians themselves describe it and its architecture in its full variety of familiar and unfamiliar aspects.*

# Canada Reviewed

*By Anthony Adamson*

IN introducing whatever aspect of his artistic endeavour, no Canadian of either language can begin with anything but an expression of diffidence. In its adolescence Canada wore its maple leaf on its shoulder as a chip, and took issue with all who doubted its achievements. There is pride still to-day; but it is tempered with wisdom. This number of THE ARCHITECTURAL REVIEW is intended to show Canadian architecture and construction as it is.

Canadians are not one people. Canada is not a nation as it is understood in the Americas or Europe or even Asia. Canada exists as a unit by an accident of history. This is evident in its culture. Canada's history has left it two races of great identity, the French and British, in a ratio of three to five, while an extra fifth of the population though speaking English is of other European stock. The French, stable, commercially unenterprising, devoutly Catholic, loyal to the land and to the Crown, jealous of their rights and culture; the British, optimistic, active, somewhat irresponsible, Protestant, comfort-seeking, conscious of dominance; the other European stocks, hard-working, acquisitive, often irresponsible politically, and looking toward the United States as a land of greater promise; these three groups have given the country little cohesion. As a nation Canada does not look in on itself, it looks outwards; the fifth trading nation of the world in peace, it feels politically and is geographically a part of something else, something beyond its understanding. It is a part of no axis of nihilism, nor does it function as a purely American country though its only boundary is of such little social consequence that it can be indicated by a rope across the ceiling of one picture theatre. It is not solely a country of the New Hemisphere, and has heard the fine sayings of its great neighbour about " twenty-one republics " in uncomprehending silence. Nor is it only a part of that Commonwealth of British Nations, pregnant with the future, because that Commonwealth cannot share with it its relations with the United States.

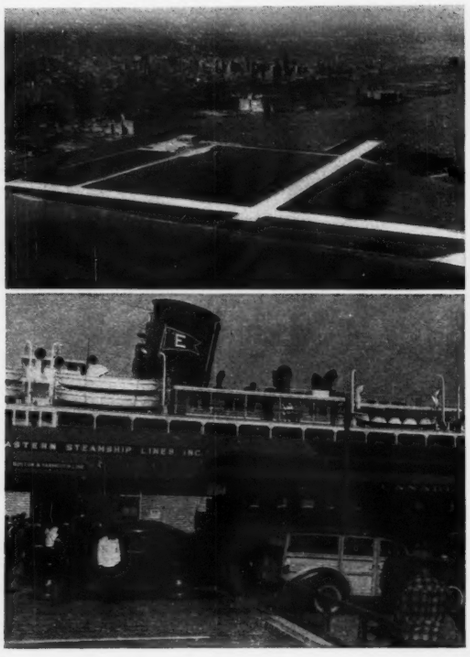
A little great nation caught and held in the maelstrom currents of the world, unable and unwilling to forge its own destiny, without a central focus, divided by race, cannot hope for great self-expression in the Arts. The inspiration for these lies in Canada's historic traditions, in the sure knowledge of inevitable expansion and in the mystery of an unconquerable frontier in the North. But without a metropolitan focus it has no theatre. With no great patrons beyond the world of business it has little sculpture. It has been too happy to have a musical tradition. Its writers are in New York. It is too continental in its proportions to have a style of architecture. Its painting, probably its best art and most prolific, lies in the garrets of the artists, waiting.

This is not to say that what is made for use is not built well in Canada. In almost the last of the freely trading nations commercial competition is fierce; every product must be within a few cents the equal in quality of the world's greatest producer to the south. Technically Canada has reasons to be proud. In building this means that the specification is more than the drawing to the owner. Buildings are built efficiently and on schedule, accurately and economically, to serve their purpose. If it is thought that their purpose requires adornment they are adorned officially and on schedule, accurately and economically.

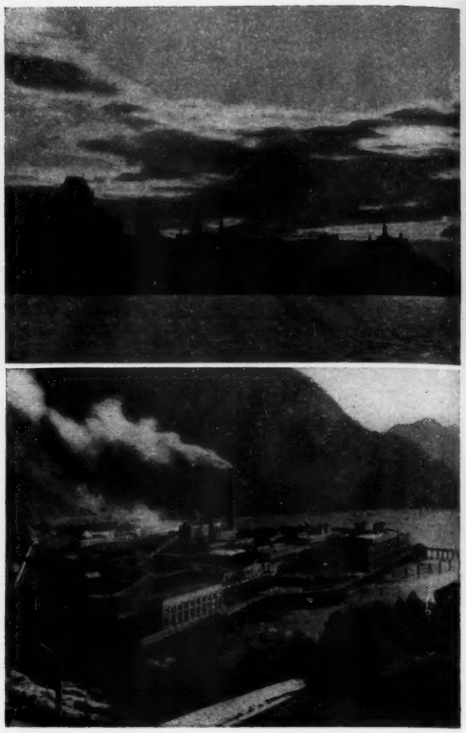
A lack of understanding of the arts does not mean that Canadians do not regard their homes, villages and cities with pride and affection. They do. They see the ragged rugged beauty of the fishing communities in the Maritime provinces with their ox-drawn carts, covered bridges and wooden houses. Their love burns for the old villages of the St. Lawrence with their " strip " fields fronting on the river, their old white houses and barns never very far from a great church quaint with its Gothic pretensions. The small prairie centres under the limitless expanse of sky appear stark and ugly to the visitor from the window of a train, but the wooden elevators that stab the horizon, the domed churches from the Ukraine, the carefully nurtured maples, the wide sunbathed streets give to these little places with their unusual names a character and charm. The teeming ambitious cities with their untidy streets and gaps where buildings have been wrecked to avoid taxation and to await the tall towers of the future, the trees in every road, the fenceless houses, the blindless windows at night, the sleek beauty of efficient commerce, give to them the attraction of vitality. The log-built embryos of future cities, the mining camps and communities of the North and the mountains have romance and that unmistakable sense of human freedom. The small early settled towns with their wooden fretwork houses and the fancy brickwork of outdated shops sitting in a patterned wood of trees have a peace unknown anywhere. And about all Canadian communities is nature pressing down on them with the wind on the wheat, with roaring rivers, with the quiet of the tree over the water and the ineffable sense of distance. Whether they are thought of as baked in their insect-ringing heat or soundless in their blankets of snow, these places lie close to the hearts of all who call them home. In them some day, when the future has been faced and conquered from the bloody present, architects know they will have a fuller service.

*In a country of three and three-quarter million square miles the variety of scenery is bound to be that of a Continent, not of a nation. It ranges from the icebergs of the arctic north to the mild fruit-growing Pacific coast, and from the immeasurable plains of the prairie provinces to the snow-covered peaks of the Rocky Mountains. Here are a few characteristic glimpses. More will be found on most of the following pages. From top to bottom: Peggy's Cove, a fishing village in Nova Scotia; Port Radium, on the west side of the Great Bear Lake in the north-western district of Mackenzie, once a lumber village, but of a changed appearance since the discovery of extremely valuable mineral deposits; the main street—generously spaced and untidy—of Alameda, in wheat-growing Saskatchewan; and a highway crossing in widely urbanized and industrialized Ontario.*

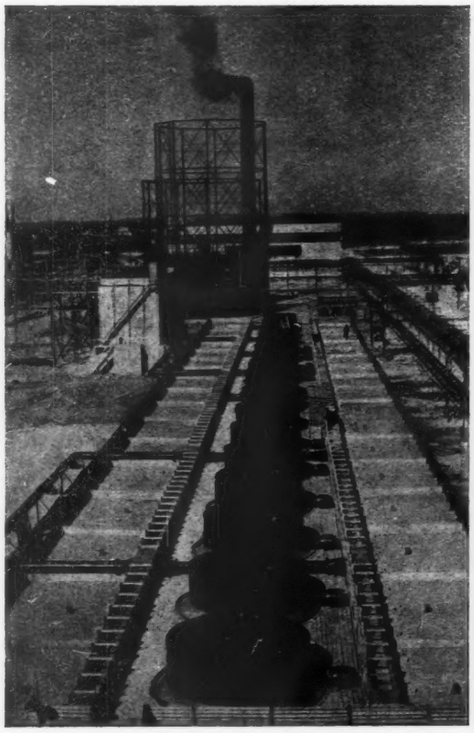
*Forward and backward from east to west, from west to east, trains roll across the Dominion, trains for goods and passengers, and now for soldiers and war materials. The railway station in Toronto and the Royal York Hotel.*



*To bridge the thousands of miles between Pacific, Rockies, Lakes and Atlantic, transport by water and air supplements the train services. Bottom, the pier at Yarmouth, Nova Scotia ; top, the Civic Airport of Toronto with, in the distance, the rugged skyline and the vast urban expanse of Canada's most American city. More important even than passenger air transport, air carriage of goods has been widely developed. In this, Canada is the leading country in the world.*

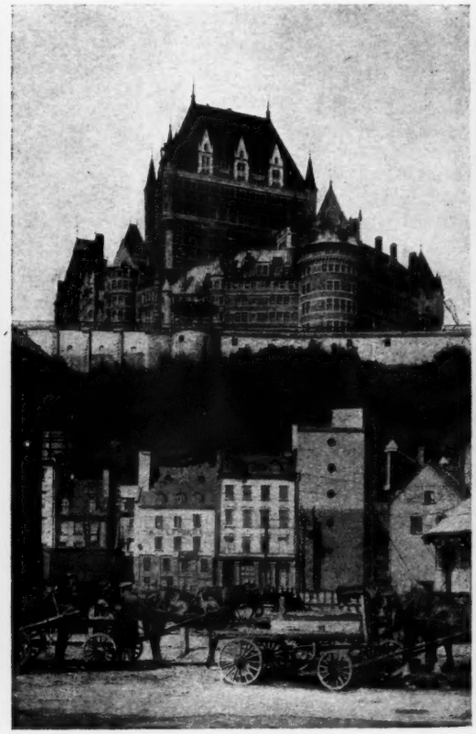


*Top : the silhouette of Quebec with the Château Frontenac on the left. Bottom : the pulp mills at Ocean Falls, between the fjord-like lakes and the pine and fir-covered peaks of British Columbia.*

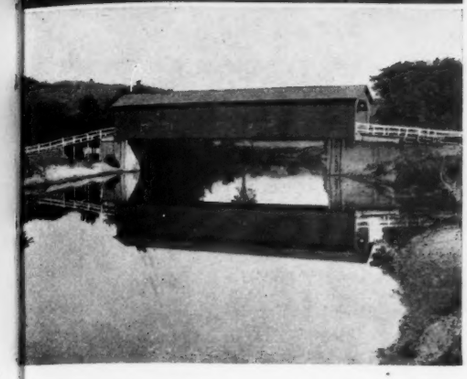


*The ordered beauty of a large Canadian industrial plant. This phalanx of cooling towers belongs to one of twenty-three new chemical factories erected exclusively for the purpose of war production. Its site cannot be disclosed. The cooling towers are constructed in timber, a practice that would not be found in Europe.*

*The centres of Canadian industry are the districts round Toronto and Montreal, the south of the provinces of Ontario and Quebec. Their large markets and supplies of labour attract most of the manufacturers whose choice of a site is not dictated by raw materials. A nickel converter furnace in a factory at Copper Cliff, Ontario.*



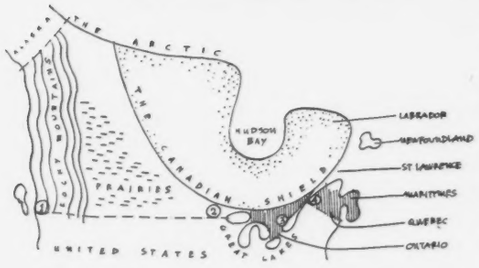
*Towering above the seventeenth and eighteenth century houses of the old riverside quarter of Quebec, rises the Château Frontenac Hotel, one of the most popular buildings in Canada, and the prototype of innumerable François I sky-scraper hotels in Canadian cities. It was built in 1893 to the designs of Bruce Price.*



*The genteel and the vernacular. A large private house at Toronto, representative of the Colonial-Georgian propensities of the wealthy, and a bridge, roofed against snow, at Ste. Jovite, Quebec.*

*With the French settlers came the Roman Catholic faith and the traditions of French architecture. The unfinished shrine of Our Lady of Lourdes at Ste. Anne de Beaupré, Quebec, was designed by M. Roisin, a Paris architect, in the forms of the French Romanesque style.*

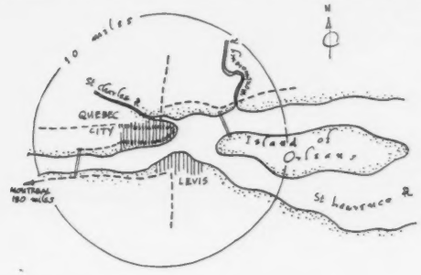
# Canada and her Communities




THE Canadian people have built a fringe of modern civilization below the mighty expanses of the North. Their land is divided into three Regions. On the east is the Canadian Shield, a dish of rock, fabulously rich in minerals concealed beneath forest, lake and stream; its centre, Hudson Bay. On the west are the Rocky Mountain ranges, seamed with fertile valleys. Held between these masses is a high plain where prairie grasses and buffalo have been replaced by domestic wheat and cattle.

Two thousand five hundred miles west of Land's End the Atlantic seas throw their spray on to the shores of the Maritime Provinces—Nova Scotia, New Brunswick and Prince Edward Island. Geographically these are a part of the New England states and their metropolis is Boston; historically Halifax was an eighteenth century outpost of British America to threaten the French occupation of the St. Lawrence. When in winter-time the procession of ships cannot pass up the ice-bound river, Canada gratefully uses its only ice-free harbours on the Atlantic: Halifax and St. John.

Access to the interior of the Dominion is by the St. Lawrence, which drains the five Great Lakes and skirts the southern rim of the Shield. Just above Montreal the river, pinched between the Shield and a similar rock mass on the south (the Adirondacks), is forced into rapids offering an immense store of power for Eastern Canada and America. This is a crucial point in the design of the country, for it forms the gateway between French-speaking Quebec and English Ontario. One hundred and fifty miles below Montreal the river is commanded by the citadel of Quebec, a natural fortress now surmounted by the

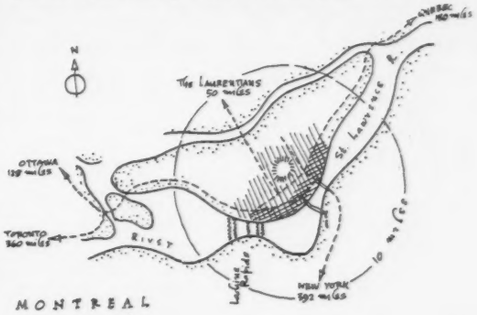



QUEBEC
founded 1608

picturesque turrets of the Château Frontenac Hotel, the seventeenth century streets of the lower town clinging to the cliffs below. Along the banks of the St. Lawrence, stretching back from the water's edge, are long strips of farm-land. Occasionally, to form a Village, the strips become narrower, the houses closer and the spire of a Catholic church dominates the landscape.

Montreal, a bilingual city of a million inhabitants, was in the eighteenth century the headquarters of the wealthy fur trade whose agents went voyaging up the many waters into the interior; its English minority is still the commercial aristocracy of the country. Here the river divides to form an island in the centre of which is a single hill called Mount Royal (originally a volcano). The city faces south towards the docks on the main stream, under the lea of the mountain whose trees afford shade in the summer and ski-ing hazards in the winter. But now the city has grown so as entirely to encompass the mountain.

If the proposed "Seaway" locks and power dams are built above Montreal, it will be possible to proceed by ocean liner up on to the waters of the Great Lakes. The first is Lake Ontario, two hundred miles long and fifty miles wide; though this is the smallest of these fresh-water seas, more Canadians live upon its shores than upon those of all the other lakes combined. Back from the northern shores of this lake the land was divided into row upon row of "concessions." These were lands granted to those who wished to remain loyal to the Empire when the American colonies revolted in 1776. The lines of these Concession Surveys are generally a mile-and-a-quarter apart and provide a rectangular road system

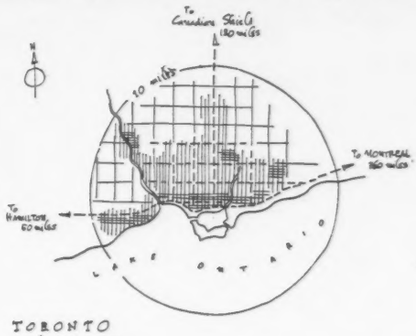



MONTREAL
founded 1642

throughout this rolling countryside, whose metropolis is Toronto, with a population of 800,000.

Here a crescent of willow-shaded islands encloses a harbour in which are reflected the junior sky-scrapers of a wealthy city, where, to everyone's bewilderment, the ostentation of America has been strangely wedded to the conservatism of a British colony. Out of the forests of the Canadian Shield in another century came the furs which made Montreal prosperous; out of its rocks are now extracted the minerals to make Toronto even more comfortably provided. This fast-expanding industrial centre is greedily devouring the agricultural concessions of its great-grandfathers and incorporating that rectangular lay-out into its street system.

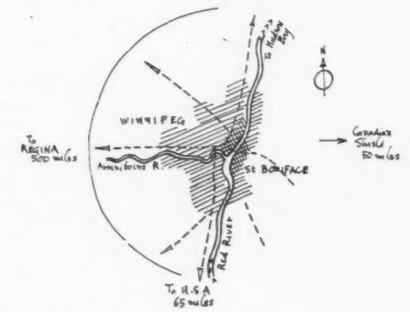
The shore of the western end of Lake Ontario is protected by an escarpment below which peaches, cherries and grapes grow in abundance. Over this escarpment tumble the waters of the Great Lakes; Niagara Falls supplies the publicly-owned hydro-electric power which so lavishly illuminates streets, cooks dinners, and turns the factory wheels of Toronto and the many smaller industrial cities of Ontario. The Welland Canal by-passes these great Falls and with a series of giant locks, lifts vessels of deep draught from the lower to the upper lakes.




TORONTO
founded 1788

Where the Great Lakes border the rim of the Canadian Shield, the rocks break into fantastic ice-scoured forms. It took ten years to push a railway through the forests on the wild shores of that chilly inland sea, Lake Superior. From Toronto it is a thirty-six hour journey before the train finally debouches from the forest upon the deep rich black soil of Manitoba; beyond the horizon, a thousand miles away, are the Rockies.

From far and wide across the prairies come trains packed with wheat to foregather in the largest freight-yards in the world. The site of Winnipeg was first reached from the north-east, from Hudson Bay, across the Shield. Where the Assiniboine meets the Red River, Fort Garry was built as headquarters of the Hudson's Bay Company whose trading-posts, now transformed into department stores (and known locally as "the Bay"), are still landmarks on the




streets of Western cities. From its original focus, where is now the Grain Exchange, the plan of the city still radiates in three directions along the rivers, the spacious width of Portage Avenue leading into the west.

Those who have been born under the bowl of a western sky always crave its long perspectives as a sailor does the sea. Here distances, surveys and the boundaries of townships, farms and three provinces are measured against latitude and longitude. From this surface the cities of Regina, Edmonton, Saskatoon and Calgary rise like islands from an ocean. Topography has not imposed any characteristic form upon these western cities; being unlimited they have not had to assemble the elements of their plan into a compact design and so they have been prodigal in their use of space.

From the prairies there are two routes across the Rockies, each provided with a great National Park and a tourist centre: Jasper to the North (4,200 square miles) and Banff to the South (2,585 square miles). These two are now connected by one of the most dramatic mountain highways in the world, a link in the route to American-owned Alaska. Compared with the neat, comprehensible landscape of the Swiss Alps the unmeasured territories of the Canadian Rockies are alarming. In the magnificent scale of their structure there is nothing to bear comparison with the huge mitre-shaped impregnability of Mount Robson (13,000 feet), or with the circle of icy faces that are reflected in Lake Louise; while in the distant Yukon, Mount Logan thrusts its peak 20,000 feet into the arctic sky.

As the folds of the mountains descend towards the west their troughs become more cultivated until, on the shores of the Pacific, a kindly equivalent of the Gulf Stream makes the gardens of Vancouver and Victoria bloom with exotic splendour. The engineer who laid out the streets of Vancouver died only last year; the city now has a population of 300,000. The site is a promontory bounded on the south by the Fraser River and on the north by an inlet of the sea which provides a perfect harbour enclosed by the projecting thumb of Stanley Park. The original site and present centre of the city is at the base of this thumb, but the whole hand has become urbanized except for the tips of the fingers where land is reserved for the University of British Columbia. Most recently a bridge from Stanley Park has spanned the entrance to the harbour and so made the mountain-side on the north shore accessible for residential development.

There is a kind of symmetry between Vancouver Island off the Pacific coast and Nova Scotia off the Atlantic coast of Canada. Both are detached geographically, economically and psychologically from the main body of Canada. The people of Victoria (on the southern tip of Vancouver Island) and the inhabitants of the Maritime Provinces in the east are specially conscious of their roots in Great Britain, though almost two centuries elapsed between the settlement of Nova Scotia, first land-fall from the grey Atlantic, and the foundation of Victoria on the blue Pacific.

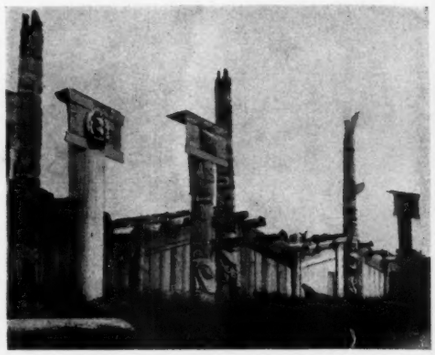
The future of Canada is locked in the unlimited storehouse of its rocks, in the vastness of its forests and the throbbing power of its rivers. The Canadian people have an extraordinary task to plan their communities in scale with its continental design, for its immensity dwarfs any of the ordinary conceptions of regional planning. Some people can comprehend the plan of a town, a few can perceive the design of a regional community measured in tens of miles. But Canadian distances being calculated in hundreds of miles, it is hard to find a workable technique of planning. It is difficult to obtain an intimate knowledge of even one of the regions into which Canada is naturally divided. Few Canadians have any knowledge of regions other than their own and the Canadian who knows his country from coast to coast is exceptional.

By necessity, therefore, this is a highly decentralized country, gaining by the democratic virtues of local independence what it loses by the lack of centralized control. Its capital city, Ottawa, does not belong exclusively to any region and is on the way


to nowhere. It is on the borders of rich farm land; its horizon is the blue Gatineau hills thick with timber and echoing the cascades of rivers. Here the Parliament Buildings stand on the French-English linguistic frontier, looking down from the eminence of a riverside cliff in Ontario upon a bedraggled industrial town in Quebec. As a capital city Ottawa does not suffer from the classic stiffness of Washington, the industrial confusion of London or the metropolitan glitter of Paris. It is a middle-sized place in which farmer, small-town man and city man can meet on common ground. Although it contains no individual masterpiece of architecture, the group of Federal Buildings perched on the wooded cliff of the Ottawa River is a composition in which the use of the turreted Gothic style seems altogether appropriate. For the Château Laurier Hotel, the Houses of Parliament and the new Supreme Court symbolize the origins of the Canadian people, the romance of French feudalism, the piety of English politics and the vigour of the Scandinavians, the three races that are being fused into a new nation on Canadian soil.

HUMPHREY CARVER.

# Architectural Background



*Indian village, on Vancouver Island. The scale can be deduced from the size of the man below the centre totem pole. The Indians all across Canada used log construction extensively, and here remarkably well.*

TRADITIONS are not sought in North America, a continent in its shirtsleeves, but they are there. In the arts and in politics North America has been, till very lately, far more conservative and traditional than Europe. The United States has the oldest written constitution in the world, and in Canada are the social remnants of feudalism. In Canada also half-timbering lived on remotely till the nineteenth century, and there are still reputable architects to-day building in the pure Beaux Arts and semi-Greek Revival styles. Traditions are a defence. You in England who have looked out through fine plate glass, over smiling gardens, through hazy light to what you call distance, cannot appreciate what a house, at least, means to Canadians who look out through double windows on a weatherbound untidy land stark and clear to infinity.

Canadian traditions in architecture are imported, though some of them have appreciably diverged from the originals in other lands. Some have centuries of continuity. Some have merged. Some have died. But the most noticeable thing about them to-day is that the resultant architecture is un-English. It is too simple to say that it is American. It is only French in parts. Up till quite recently Canadian architectural traditions have not been thought worthy of investigation, but to-day at the universities, and at the public and provincial archives, are men like Vaughan's mole, who "evermore do go, industriously below" digging out our architectural past. The histories of national and of wood-building traditions as well as of a few local traditions, are examined in the following pages.

The influence of England and Scotland on Canadian building has been continuous but tenuous. It has been due to the immigration of craftsmen and architects. But it has not established a parallel tradition with the contemporary architecture of the United Kingdom. The reason is logical. No two countries are as dissimilar in geography. And also, the classical details of the English Georgian have merged in English-speaking Canada with the traditions of its American loyalist founders whose own American traditions stemmed from England. In commercial buildings the lack of English influence is most noticeable. Swan and Edgar's would be more un-at-home in Canada than the Escorial. Throughout the history of English architecture restraint is its keystone, craftsmanship is excellent, detail is petty, plans are rational, mass is restrained, by-laws are unchangeable. These things are not Canadian.

The first English influence brought to Canada came

**CANADA'S HISTORIC MONUMENTS.** Amongst the historic monuments of Canada the forts hold a paramount position. Their rigidly geometrical patterns, patterns of a heroic military past, are in strong contrast to the generous, still untamed forms of the scenery. Fort Prince of Wales, Churchill, Manitoba, was one of the Hudson's Bay Company's forts, built of stone on the frozen Arctic muskeg, in rivalry with the French forts of the late seventeenth and early eighteenth centuries. It is said to have been designed by Wren. The Hudson's Bay Company, founded in 1670, wielded for a long time a semi-sovereign power over half the Canadian territories.

**NOVA SCOTIA SCENERY.** A Scottish, or rather Scandinavian, climate: granite, slates, quartzites, and other early geological formations, the so-called barrens, i.e. marshy or peaty plains, much coal in the ground, and wooden houses with high-pitched roofs—these characterize the province of Nova Scotia. Twenty-five per cent. of the Canadian coal-mining industry and twenty-five per cent. of the Canadian fishing industry are concentrated in the province.

**CANADIAN WINTER.** Winter in Canada is really winter. There are four, five months of solid snow and ice in most parts of the Dominion. The annual mean temperature for London is 50.4, for Toronto 44, Montreal 42, New Brunswick 40, Edmonton 37, Winnipeg 34.

**TORONTO HOMES.** This is a very typical street in a well-to-do Toronto suburb. The houses are vaguely and pleasantly Neo-Georgian, with the weather-boarding that is so popular across the frontier in the United States. No hedges or walls separate the gardens from each other or from the road.

to Quebec after the conquest when several British architects rebuilt a considerable portion of the Upper Town in a completely new stucco and oil paint style with fine classical detail. George Browne, the son of a Dublin architect, established a school of architecture in Quebec about 1830 and later built public buildings there and at Kingston. An Englishman called Footner, who was also a grocer, helped to introduce the Greek Revival, and many others since have influenced Canadian architecture, but their influence has been spotty. In the early British houses of Quebec the French craftsmen kept the casement windows and steep shiny tin roofs. In many of Browne's buildings the Greek detail is in pine painted white in the local tradition. University College, Toronto, by Cumberland, is similar in time and style to Ruskin's Museum at Oxford, which created such a stir, but its effect in Canada was nil. Pearson from Yorkshire, who built the existing Ottawa Parliament Buildings, also designed Canada's tallest building in a purely American style.

Scottish and English craftsmen entirely fed the Canadian building trade outside of Quebec from about 1850 to 1910. Earlier military and naval engineers were responsible for much, including one cathedral, but materials and conditions were so dissimilar that there is no long tradition of any purely British types. In eastern Ontario there was, perhaps, a semi-British tradition in stone construction, but the word "English," when used in reference to present architecture, refers solely to an Elizabethan type of gabled house with tall unnecessary chimneys and expensive to heat. It is a definite style under that name.

The traditions of France are not as those of England; they were brought here as a craft three hundred years ago; isolated nearly two hundred years, they have been nurtured as a style. As a grouped minority the Canadian French have attempted to guard their culture zealously, and though their architecture has not been guarded as zealously as other branches, it has come through the dangerous nineteenth century with the good hope of a future. The château style of "New France" is a revival; the Beaux Arts style was an importation; though both were grown on friendly soil. Although the craft traditions of the early Breton and Norman peasants are dead, the plans of their descendants' homes to-day are largely those of centuries ago, and it is in the little houses of Quebec that Canada has its finest and most native architectural tradition.

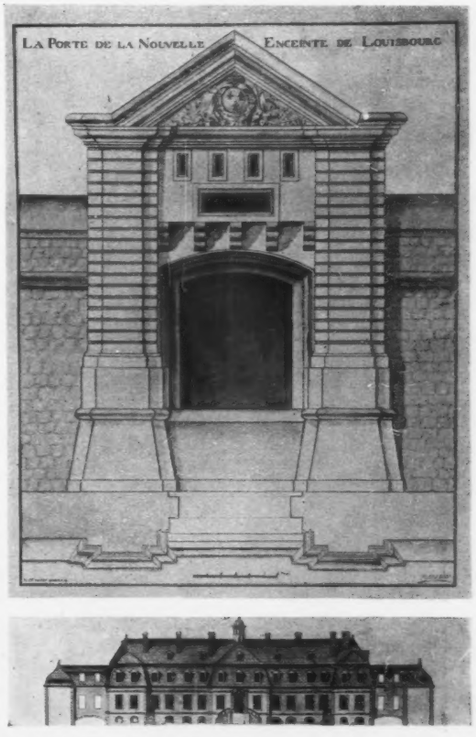
Basically the types of small early Quebec houses do not vary, their wide rectangular plans are very much the same, and though their roofs may be gabled or hipped they are always mediævally steep. In towns and more occasionally in rural districts gables are parapeted; modern instances of this tradition can be seen in Douglas Hall, McGill University, and in the Guest House of the Aluminium Company at Arvida, both by an English-speaking architect who has done much to vivify the French tradition. The extraordinary use of large shiny tin-plated iron sheets for roofing Quebec houses has been noticed by travellers since the very beginning of the nineteenth century, and can still be observed. The desire to have a gallery or verandah around the ground floor of steep-roofed houses led to a peculiarly Canadian swept roof shape called the "bell-cast." The small house according to Quebec tradition is usually carried out in stone, seldom in brick or frame. But it is perhaps dangerous to over-emphasize this small house tradition lest it be thought that the early cities of Quebec and Montreal did not have buildings of great pomp. The contemporary drawings of the Intendant's House at Quebec and the Château Vaudreuil at Montreal built in the first quarter of the eighteenth century and in the grand manner of the Louis's, show buildings as fine as any at Williamsburg or in the New England colonies. Such buildings did not found a tradition owing to the Conquest, nor did they affect the simple steep roof-line of most Quebec houses. The Mansard or Gambrel roof was not extensively used till 1850.

*The Recollet Church in Quebec, showing the bombardment damage of* 1759. *It was built in* 1693 *and destroyed by fire in* 1796. *Here the great Frontenac was buried in* 1698, *shortly after his return from his last battle with the Iroquois.*

Four schools of Art were formed in French Canada between 1690 and 1800, two teaching architectural design. The most famous architecturally was the Quevillon School at St. Vincent de Paul, 1800-1825. After the Conquest, the larger public buildings were erected by British designers and direct French influence was slight till about 1900. Many Canadian architects have since graduated from schools in France, and Parisian architects have been employed in buildings such as the unfinished shrine of Ste. Anne de Beaupré, which is reminiscent of the church on Montmartre. Some French modernisms have crept in, but they are few. The use of the steep roof on public buildings is of recent re-introduction. It had its rebirth in the Château Frontenac Hotel, Quebec, by an American architect, followed shortly by the Château Laurier in Ottawa, and is now almost standard equipment on any hotel with pretensions, except in the Maritimes. The present Prime Minister is particularly partial to it and Ottawa buildings are being fitted with them at all cost. There is much to be said for this tradition, perhaps; but that the mortality rate from falling icicles is not high in Canada is not due to the ingenuity of their architects but to the agility of the population. It is most unfortunate that the very charming style of early French church architecture has not been reborn. The modern churches and cathedrals of Quebec that are being continually added to are almost uniformly uninspired, as in fact they are everywhere in Canada.

The story of the American tradition is quite different to that of the French or English. Commercial and educational buildings have, from about 1860, followed American contemporary styles and their history is the story of American architecture. In commercial buildings such as shops, banks and skyscrapers, there has been little that is peculiarly Canadian. The "Richardson Romanesque" style that pervaded America laid heavy burdens on Canadian soil too. It is the fashion to abuse this heavy style carried out where possible in red sandstone with its excess of Viking carvings. The Head Office of the Canadian Bank of Commerce at Toronto, the tallest building in the British Empire, built in 1927, is the last gasp of this style in America.

To-day the American commercial influences in the cities of Ontario, of the plains, and of Vancouver, and to a lesser extent of Montreal, is as strong as ever. But the great offices of the United States are no longer so individually stylized, so that it is impossible to detect the styles of Richardson, McKim, Mead and White, or John Russell Pope in Canadian buildings. American structural solutions are still, however, accepted whole. Yet Quebec City, the Maritime cities, Victoria, Kingston, Ottawa and most




*The French Dix-Huitième in Canada. Bottom: the south facade of the Intendant's Palace in Quebec. It was built about* 1715-20. *Only its foundations survive. The Maurepas Gate of* 1739 *at Louisburg, Nova Scotia, top, has also been destroyed.*

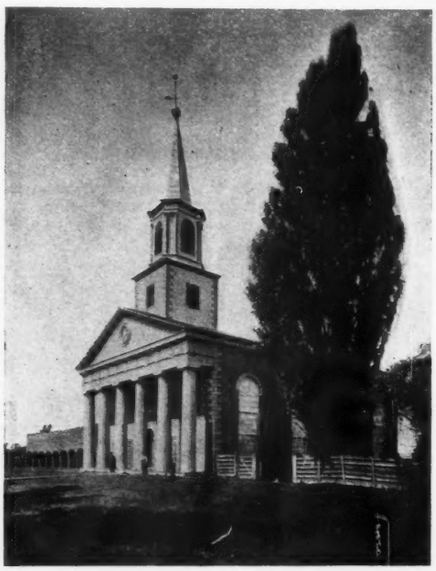
of the towns of Quebec have much local bouquet that is due to other influences.

Historically the most interesting influence of the American architectural tradition has been in the houses of Ontario and the settlements of the Loyalists. These courageous people left their homes and the graves of the past to come to Canada and live under their old flag when the thirteen colonies revolted from King George. They brought with them a classical tradition and a building craft as personal to them as anything in the French settlements. They were very largely men of education, so that the earliest and most primitive houses of Ontario to-day are by far the most sophisticated. Those in the towns have mostly gone, but many rural ones remain. Their style is essentially a full blown classic and the detail in wood is often pure Greek. Their first houses were usually of superimposed logs, often with the very low pitched roof proportions of a classical pediment. Their plans were often classical too, with wings. Their windows were double hung, their roofs wood shingled. They were altogether different in every respect from the traditional houses of French Canada. In construction the small Loyalist house was usually wooden, not stone or brick.

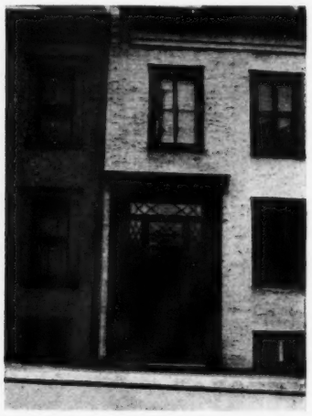
The tradition of building in wood is the strongest of all the Canadian traditions. The prevalence and local developments of wood construction are the causes of the characteristics that distinguish American Colonial and Canadian Loyalist buildings from their English Georgian contemporaries. The early American tradition is essentially a wood one. The use of wood by the French was common but it is singular that they continued for centuries to use very frequently a complex framing method. In 1615 Champlain noticed that Indians built "cabannes de pièces de bois accommodées l'une sur l'autre" and "les calfestrèrent (chinked) avec de la mousse," but when in 1626 he built a settlement at Cap Tourmente he did it "de bois et terre à la façon de ceux que se font aux villages de Normandie." That was fairly natural; it was the traditional half-timbering called "bouzillage" with mud between the timbers; but it was extraordinary that two hundred years later this style, only slightly altered, was the style of the first houses of Victoria, B.C., built by the French employees of the Hudson's Bay Company. Another early French type brought from Europe was "pieux en terre," common in Acadia, Detroit, and the Mississippi Valley, which consisted of vertical stakes driven into the ground and chinked; the style of the Saxons. This was still seen in Newfoundland in the mid-nineteenth century and the buildings were called "tilts." The building for the King's Lieutenant on the Isle St. Jean is half-timbered and probably filled with stone. Many Louisburg buildings were half-timbered and filled with brick imported from Boston. The Habitation at Port Royal (1605), illustrated on the right on page 89, was half-timbered and weather-boarded. Much half-timbering and even rough rubble was also weatherboarded by the French. The style of the half-timbering used by all the fur-trading companies in the West and known as Red River frame had the spaces filled with short logs grooved into uprights.

The superimposed log buildings of the Indians, and of the Eastern and Northern European countries,

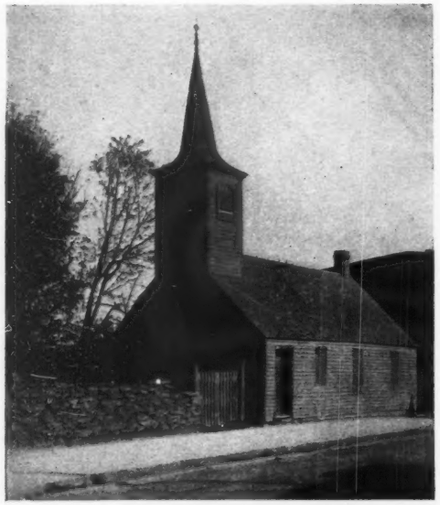
*St. John's, Port Joli, Quebec, built between 1775 and 1783, a very handsome example of Canadian-French church architecture. The interior was redecorated from 1816 onwards. The wooden vault dates from that time.*



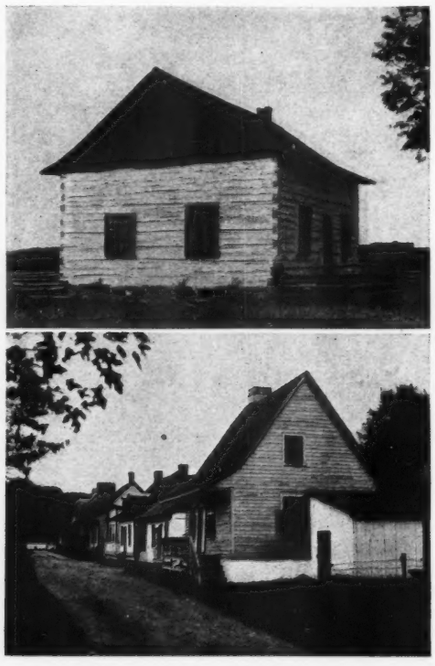
*St. Andrew's, Niagara-on-the-Lake, built in 1812, a Colonial brick building with roundheaded windows and a Georgian tower, embellished by the fashionable Grecian portico. The church was restored in 1938 under the auspices of the Architectural Conservancy of Ontario.*



*A door in Quebec city. Its architectural detail and graceful trellis-work, evidently inspired by Robert Adam, proves its date to be post-conquest, probably of the late eighteenth century.*



*The old Dutch Church in Halifax, built about 1755. The fortress of Halifax had been founded in 1749 as an outpost of British colonial power on the Atlantic coast and a challenge to the French fortress of Louisburg, some 200 miles farther up the coast. It was named after the then President of the Board of Trade and Plantations, the second earl of Halifax.*

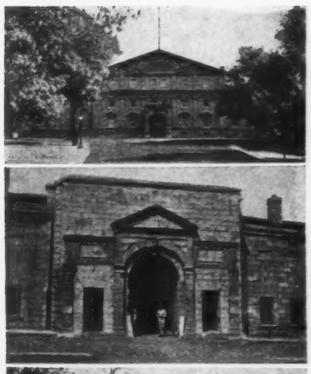


*Top: a typical early Ontario log house near Penetanguishene, showing the remarkably fine timber craftsmanship imported by the American Loyalists who had immigrated after the American revolution. The roof may be slightly later, as it exhibits the influence of that characteristic Canadian-French swept type of roof called "bell cast," which is also illustrated by the village houses of Oka, Quebec, in the bottom picture.*

were easier to build and more satisfactory. The Indian construction, described in 1755, of "maisons à la Canadienne," "faits de bois de chêne ronds, encochés les uns dans les autres aux angles," was exactly the construction that had been eventually adopted by the English colonists and that was imported to Canada with the Loyalists, except that it had been refined. The logs were squared, and a glazed sash was used in the openings. Only in rough buildings were the logs round and left to project at the angles. The gabled ends were seldom built of logs to the roof. Wherever the Loyalists settled in Canada they established a mill for sawing planks and boards. In many localities it became easier to build a house with walls of superimposed planks unevenly laid to give a plaster bond. These houses are now goldmines of finely seasoned white pine, and white pine—it must be stressed—is the finest wood in the world. Such lavishness did not last, and stud frames were introduced sheeted with rough boarding and either clapboards or shingles. The use of wood shingles for wall as well as roof covering was very common in early New Brunswick and is to-day in British Columbia. The British Columbia shingle is the finer and larger of the two. The reaction from restraint that occurred on every continent during the nineteenth century found wood an ideal material for the release of pent-up architectural inhibitions. The early buddings of this "fret-saw era" now have great charm and the full fungoid blooms have the unearthly fascination of surrealism. To-day, the majority of Canadian small buildings has walls of 2 in. by 4 in. studs at 16 in. centres on concrete basement foundations. The use of brick veneer and felt shingles is common, and that of plywood boards, now about to be made with fireproof glue, and the use of asbestos shingles, is coming in.

It is only in the last twenty-five years that Canadian University architectural schools have existed and so had any influence on architecture. Before these, architects were trained in the United Kingdom or the United States or France in non-Canadian methods, or were trained haphazardly and inadequately in small Canadian offices. Such Canadian trained men nearly always accepted the impressive American solutions to architectural problems without thought. Till recently, possibly only fifteen years ago, the major jobs were given to large United States architectural firms so that the local traditions of Canada were relegated to the minor buildings. This is no longer so. Canadian engineers, architects and contractors are now capable of erecting any type of building. Large contractors also are now nearly always graduates of engineering schools, not the products of the builder's yard. Canadian architecture as well as building is now in native hands and it will be interesting to see how they treat it.

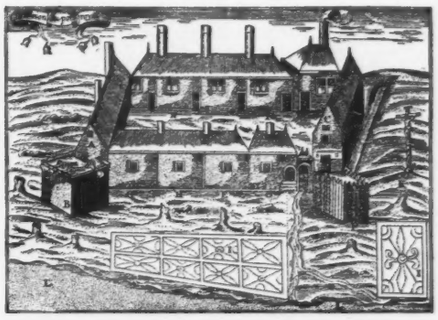
*Casa Loma, Toronto, begun in* 1913 *as a late example of the most flamboyant Canadian Baronial, but left unfinished, when the war of* 1914-18 *stopped the floods of immigrants and with them for a while the prosperity of the country.*



*Rideau Hall, Ottawa, the residence of the Governor-General, was built in* 1838. *The gateway in the picture below, of a similar style, is part of the citadel of Quebec. Barnum House, near Grafton, Ontario, in the next illustration* (1815), *represents the delicate American taste of the growing Loyalist colony of Upper Canada. Mauvide Manoir, Isle d'Orléans, Quebec, at the bottom of the strip, is an excellent example of the rural French eighteenth century manoir.*


*Four stages of Victorian historicism: the original Parliament Buildings in Ottawa of* 1859-65, *by Fuller and Jones; the Empire Hotel in Winnipeg of* 1880, *humdrum Italianate except for the curious Moorish heads to the ground floor windows; the Parliament Buildings in Toronto* (1888-92), *in the then most advanced American Richardson-Romanesque style; and the Parliament Buildings in Victoria, British Columbia, of* 1894, *in the new ornate Imperial Neo-Renaissance.*

# Préservation des Sites et Monuments Historiques



*The Habitation at Port Royal,* 1605.

NOTRE pays si vaste où tout semble possible est l'image même de l'adolescence. On pense à un jeune être qui grandit trop vite, dont les membres prennent une importance provisoire ou restent en deça de leur accomplissement normal. La préservation hasardeuse des sites et monuments historiques et l'attitude des gouvernements successifs, reflet de la pensée commune, illustrent bien cette analogie comparative.

L'activité de ces immenses déserts, peuplés à un rythme variable d'individus, anxieux de réaliser le moment présent dans sa plénitude instantanée, rendit longtemps inconcevable la notion de sauvegarder et de maintenir. Au tout début la vie demandait une installation éphémère. Les premiers colons furent pris au dépourvu par les conditions rigoureuses du climat. On sait que leurs réalisations se sont très vite effritées; à peine quelques relations écrites permettent-elles de retracer de très rares emplacements.

L'expérience acquise, la bâtisse illustre l'art du maçon par ses murs en pierres des champs, épais, courts, les pignons descendant le plus près de terre par économie forçée de matériaux, à cause des moyens limités de fabrication et d'entretien et d'une connaissance restreinte des métiers. Le charpentier-menuisier complète cette sommaire description; c'est lui qui principalement au début de la colonie fut le rouage essentiel et qui fut responsable par la suite des réalisations les plus accomplies.

Comme toujours il faut commencer, quand il s'agit du passé canadien, par le Québec, ce charmant Québec dont il est bien difficile de dire si dans son caractère il reste plus français qu'il n'est devenu anglais; quoiqu'il soit sans conteste possible l'avant-poste de l'Europe ancienne en Amérique, comme un oasis de gentillesse, symbole d'une forme de culture déjà fossile. A travers trois siècles, le Québec résume et comprend, par sa situation géographique, sa priorité dans le temps, les différents aspects de la question qui nous occupe: on y trouve des champs de bataille, des forts et casernes, surtout anglais de caractère, fort intéressants pour un architecte, et bien conservés; monuments commémoratifs; maisons où passèrent les gloires militaires et civiles; édifices religieux (temples, cathédrales ou chapelles, oratoires) qui mettent en évidence tour à tour la finesse et la dignité; modestes petits édifices publics à colonnes et à frontons, marchés, moulins, etc.

On y voit apparaître l'usage de la pierre taillée, de la brique, une brique très rouge, de qualité banale fabriquée dans la région. La campagne est très fournie de maisons de pierre des champs à pignons et à lucarnes, à toits à

quatre pans inégaux ; les murs sont parfois recouverts de crépi blanc ; ou bien les toits sont à quatre pans égaux à faible pente, faisant une forte saillie sur le mur ; ou encore le toit à deux pentes sur le côté long et faisant saillie, est supporté par de grêles pôteaux, ornementés à la tête, de bois découpés en dentelle et reposant sur une étroite terrasse, dont la balustrade est elle-même de planches très découpées et peintes en blanc. Il y a ainsi de l'embouchure du St-Laurent jusqu'à la pointe extrême du Québec un échantillonnage assez varié et complet, dont la valeur constamment s'augmente par la fuite du temps.

En allant vers l'Ontario cette description se complète d'une influence coloniale américaine très sensible ; en allant davantage vers l'ouest on rencontre un usage du bois très primitif (blockhouse) ; en même temps des vestiges de l'art indien représentés par ces totems aux couleurs vives et bariolées, d'un pittoresque si perceptible.

Il n'existe pour ainsi dire aucune action concertée des gouvernements fédéraux et provinciaux pour la reconstruction, restauration et le maintien des sites et monuments historiques. Des sociétés se sont constituées un peu partout dans le but de perpétuer le souvenir des actes essentiels. D'une ville à l'autre, le long des routes, on rencontre une inscription rappelant un fait, un nom, ou encore sur un bâtiment contemporain, la disparition d'un abri primitif. En plein champ, une petite pyramide de cailloux dans laquelle est scellée une plaque de bronze remémore un fait guerrier ; à tel autre endroit des indiens sournois ont cerné un village et scalpé la population. On imagine difficilement cependant la vraisemblance et qu'il s'agit là de quelque ancêtre, en remontant à la dixième génération. Le Gouvernement fédéral entretient assez largement les champs de bataille, par exemple, les magnifiques plaines d'Abraham. Il restaure les casernes comme celles de l'Ile Ste.-Hélène, près de Montréal, aux belles salles voutées, la citadelle de Québec encore en activité où loge le Gouverneur-Général durant les mois d'été ; le fort de l'Ile-aux-Noix : on y trouve deux petits escaliers à vis en pierre.

En Ontario et dans les Provinces Maritimes les vestiges moins nombreux sont sans prix ; plus récents ils sont d'un luxe plus grand sinon plus raffiné, en général très supérieurs en qualité—dans le Québec également—à la production actuelle. Il y a Lower Fort Garry, sur la rivière Rouge ; l'édifice de Hudson Bay Company qui est devenu un country club ; Fort Henry à Kingston, édifié après la guerre de 1812 et agrandi en 1845, un des plus beaux exemples d'architecture militaire au Canada et en Amérique (qui a servi dans les années récentes à loger à deux reprises des prisonniers allemands). Les hauteurs de Queenston où les Américains furent repoussés en 1813 sont fort bien entretenues ainsi que plusieurs autres sites Ontariens. Le Fort York de Toronto a été restauré par la municipalité, mais c'est un cas exceptionnel ; le Fort Ste.-Marie qui a vu le martyr du Père Brebeuf est resté en plan à cause d'une respectable controverse entre Pères Jésuites et Presbytériens ; les seconds, actuels possesseurs, se refusant à le revendre aux premiers.

Les Provinces Maritimes possèdent également quelques vestiges anglo-francais et le Ministère de l'Intérieur, entre 1928 et 1940, a restauré, par exemple, à Louisbourg où il a acheté le site du Port et de la vieille ville ; il y a construit un musée. L'habitation " De Monts " à Port-Royal a été restaurée avec beaucoup de soin par une société privée qui s'appelle " The American Champlain Society." Le Fort Anne d'Annapolis Royal, dont le dessin, attribué à Vauban, ainsi que le terrassement, conservait quelques restes a été remis en ordre, augmenté d'un petit musée. A Grandpré il reste un vieux puits ; on a construit une église et dressé en face un monument très touchant. Aux environs d'Halifax subsistent des édifices gouvernementaux qui datent de 1801, une église de St-Paul fondée en 1751, etc. J'en oublie sans doute au Nouveau-Brunswick et à l'Ile du Prince-Edouard.

En somme un nombre très limité de souvenirs et de monuments historiques à travers cet immense Canada maintient d'une façon très précaire le souvenir d'un passé récent presque aussi lointain, en face des réalisations contemporaines, que la pré-histoire. Il y a là une solution de continuité inconcevable ; instinctivement la population a pour ces restes du respect ; attachement malheureusement plutôt sentimental : l'on passe difficilement aux gestes sauveurs. Cependant il s'est crée quelques sociétés historiques comme il en existe en France et en Angleterre, sociétés d'archéologues le plus souvent, de bonne volonté.

Dans le Québec depuis 1925, existe une Société des Monuments Historiques, et une loi pour la restauration, l'entretien et le classement des monuments et sites, décalque de la loi française de 1887. La commission est composée de six membres qui ont la fonction de désigner ; d'après l'esprit de la loi tout particulier possesseur d'un monument dit historique ne peut être autorisé à le maintenir, le modifier ou le restaurer sans être d'accord avec la Commission. Ces travaux de réfection devraient se faire par des fonctionnaires ou des personnes désignées par l'Etat et rétribuées par lui. L'Etat devrait également avoir le droit de priorité en cas de vente. Malheureusement si le principe est excellent et clairement exprimé il ne trouve pas de sanction et tout reste uniquement possible. Tant que l'Etat ne forcera pas à l'enregistrement de l'acte de désignation et qu'il ne créera pas un service d'inspection, rien ne se fera aussi bien dans les provinces qu'au Gouvernement fédéral où il existe cependant une loi des champs de batailles et une loi des Monuments et des Sites Historiques—également non sanctionnées.

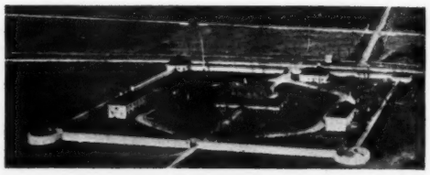
Cependant Ottawa, plus fortuné ou peut-être parce que le souci national y est plus conscient, agit avec vigueur à l'occasion, donc sansque cette action n'ait aucun caractère officiel ou de permanence.

Il faudrait vraisemblablement grouper dans chaque province la Société des Architectes, la Chambre des Notaires, et la Société des Régistrateurs ; pour des raisons professionnelles ou techniques l'union de ces trois sociétés sous l'égide gouvernementale, permettrait alors d'imposer la sanction, c'est-à-dire une action effective.

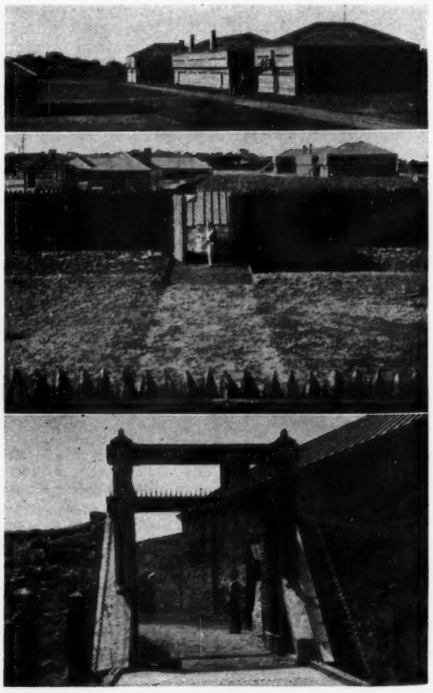
Il faudrait également qu'on applique a tous cette enquête discrète, subventionnée par le Gouvernement provincial de Québec depuis plus de trois ans. On relève ainsi toute la richesse artistique subsistant à ce jour. Les enquêteurs, fonctionnaires du Gouvernement, ou spécialistes en la matière—en l'occurrence anciens élèves de l'Ecole des Chartes, de l'Ecole d'Art et d'Archéologie de Paris, et de l'Ecole du Louvre—vont de porte en porte, s'informent, visitent les églises, les presbytères, les hôpitaux, tous les édifices publics, consultent les archives, les régistres paroissiaux ; à travers les vieux journaux, les vieux papiers de famille, font les recoupements nécessaires, consignent en des fiches classées leurs trouvailles. Ils complètent ces renseignements de photos et de notes personnelles, de descriptions, etc., avec toutes les précautions nécessaires. Ainsi s'aperçoit-on que l'on possède un trésor artistique plus subtil, plus abondant, d'une qualité plus rare qu'on ne l'imaginait : c'est la voie ouverte à une législation qui sera possible, avant très longtemps, juste au moment où il allait être trop tard.

Depuis quelques mois on a créé—précédent très symptomatique—une commission gouvernementale, nantie d'un budget de cent mille Dollars, et chargée de sauvegarder le caractère historique de la ville de Québec en train de s'estomper à une allure inquiétante. Winnipeg, insouciante, qui s'est dépouillée entièrement de son passé, ne tirera aucun profit de cet exemple, mais ailleurs, à Toronto, Halifax, etc., à Montréal en particulier où la vieille ville est très complète, plus récente mais plus variée d'aspect, cette initiative devrait donner lieu à une renaissance extraordinaire. Tout un quartier de la ville face au port, actuellement très négligé, pourrait lui redonner sur le sol d'Amérique, sa qualité de ville historique de premier ordre. Il est tout simplement normal que face à l'Europe, comme en un quartier voisin, se retrouve et se perpétue dans l'empire même, le culte essentiel de la tradition.

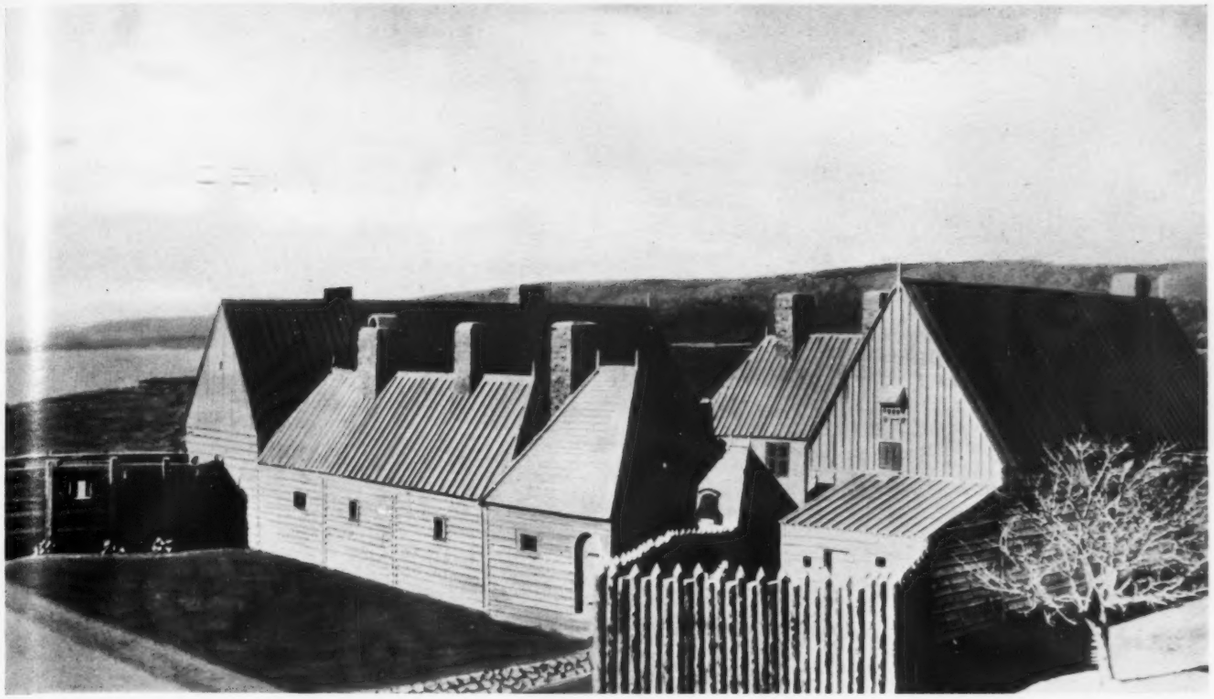
MARCEL VAUJEAN.



*The last of the old fur trade forts : Lower Fort Garry, on the Red River, north of Winnipeg.*



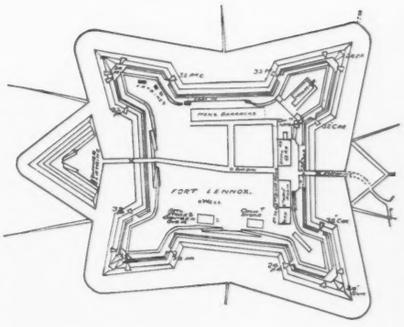
*Top and centre : Fort George, Niagara, probably the largest of the block-house forts. Bottom : Fort Erie. Several of these forts have recently been restored with American lavishness and look now much more genuine than they probably did when they were still in use. The buildings themselves are on the whole authentic, but most of the paraphernalia are new. The guards in the uniform of 1812 should not be overlooked.*

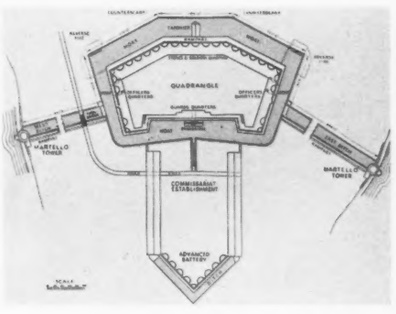


## OUTPOSTS OF COLONIZATION

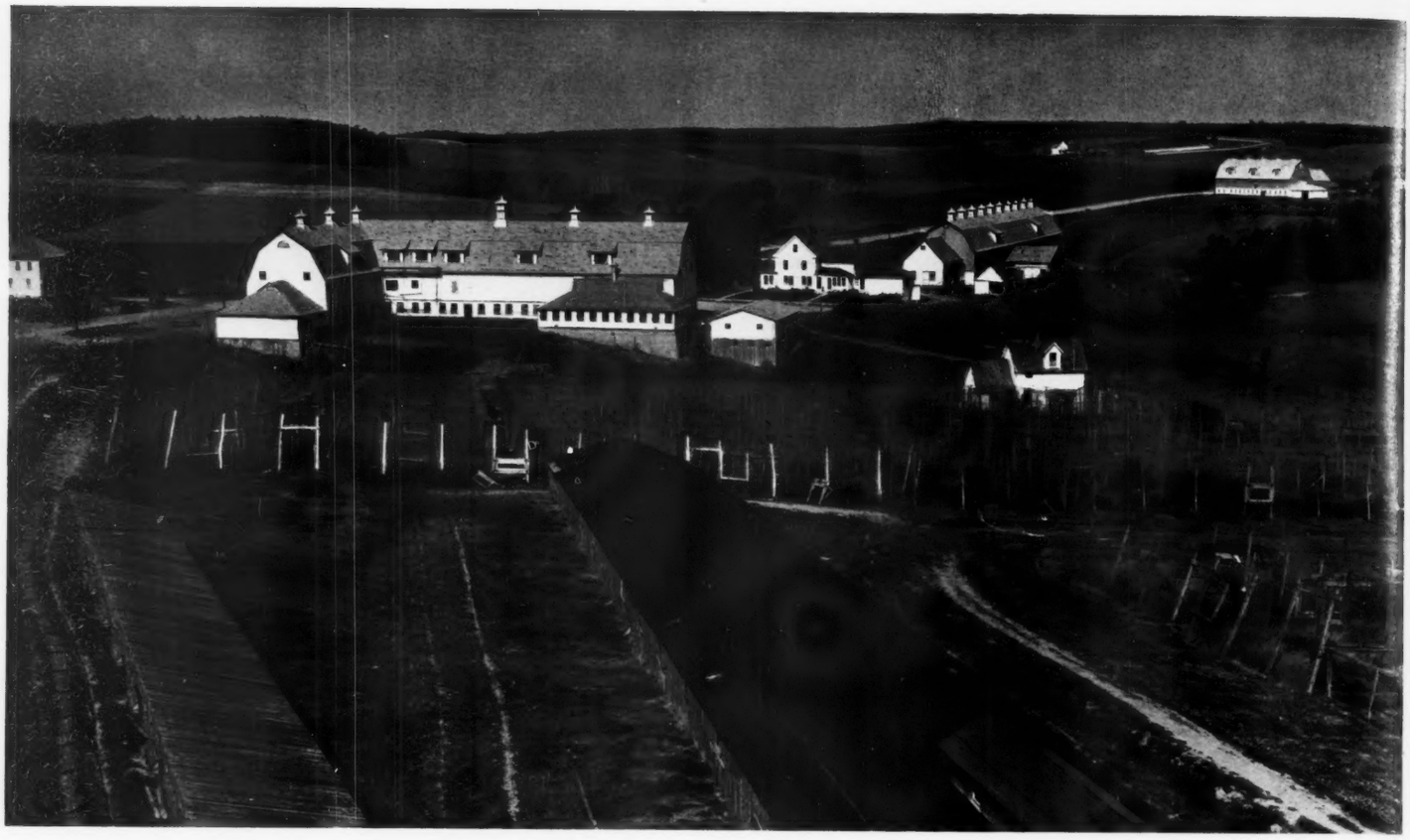
**"Directly on the shore of the lake, and nearer to its western than to its eastern margin, lay the extensive earthen ramparts and low buildings of Fort William Henry. Two of the sweeping bastions appeared to rest on the water, which washed their bases, while a deep ditch on extensive morasses guarded its other sides and angles. The land had been cleared of wood for a reasonable distance around the work, but every other part of the scene lay in the green livery of nature, except where the limpid water mellowed the view, or the bold rocks thrust their black and naked heads above the undulating outlines of the mountain ranges. In its front might be seen the scattered sentinels, who held their weary watch against their numerous foes, and within the walls themselves the travellers looked down upon men still drowsy with a night of vigilance."**

**J. FENIMORE COOPER: "The Last of the Mohicans."**

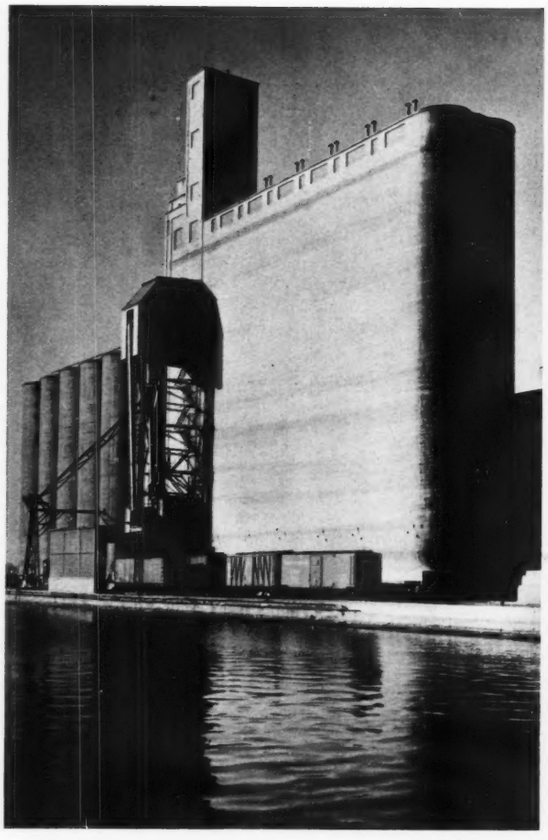


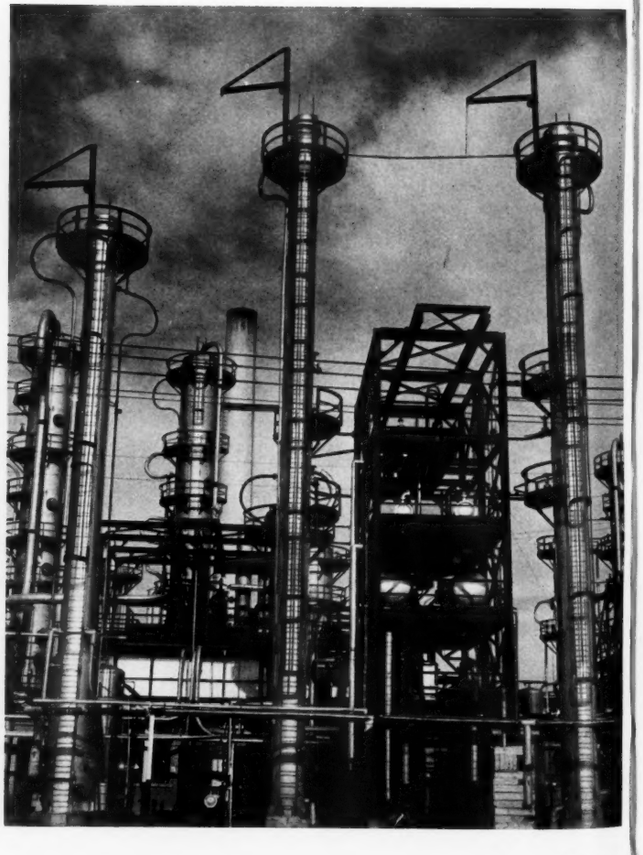




Of the many forts which the French and the British built between the seventeenth and the early nineteenth centuries against the Red Indian border tribes, and against each other, a number survive and, being the most popular group of historic monuments, have of late been restored with the seductive but somewhat questionable technique developed in the United States at Williamsburg, etc. The Port Royal Habitation at Lower Granville, Nova Scotia (top) was the first permanent settlement in North America, north of the Spanish colonies. It was built in 1605 and destroyed in 1613. As it appears to-day it is a replica. There was not more left on the site than foundations of chimneys and cannon platforms. But engravings such as the one by Champlain in his *Voyages* of 1613, which is shown on page 89, helped to ascertain features of the elevation. The result is considerably neater and primmer than it can have been during the rough days of its short real life. Fort Lennox (centre), with its symmetrical ground plan, lies on the Ile aux Noix, Quebec. Its stone buildings are of the early nineteenth century. Fort Henry, Kingston, Ontario (bottom), has a more complicated ground plan, well adapted to the requirements of the site. Most of the substantial stone architecture of the Fort is somewhat later than that of Fort Lennox.



**THE FARM.** A typical Eastern Canadian farm near Sackville, New Brunswick. It is of the mixed, i.e. general purpose type. The barn in the foreground serves a combination dairy, cattle and fox farm. The ground-floor walls of all such barns are concrete with sheet metal siding on timber trusses above. New Brunswick is a chiefly agricultural province. Farming is done in smaller units than further west. Industry is comparatively insignificant.





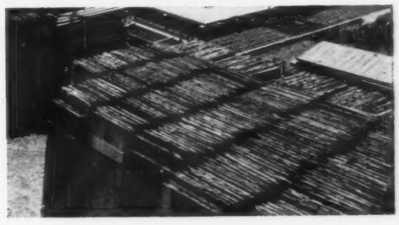
**CONCRETE AND STEEL.** A storage elevator of the Canada Malting Company, Toronto, by T. Pringle and Son, and part of a new crude oil plant the site of which must not be disclosed. These two industrial structures, although probably not designed to appeal to the æsthetic sense, illustrate in a convincing way the two main contemporary architectural tendencies: concrete and steel, massive bareness and almost weightless transparency.

# Agricultural Canada

ANY selection of Canadian agricultural buildings on the scale here permissible must be purely arbitrary. The ones illustrated are chosen because they differ from buildings of similar type in England. The farmhouse in Canada is always a very minor point in a farming landscape, and a man is rated as a farmer in inverse proportion to the size of his house. Not so with his barns. There are probably no finer and more beautiful buildings in Canada than the mixed farm barns of the East. The one used as a headpiece to this article stands near Guelph, Ontario. In wheat farming large barns are unnecessary, but both stock and crops must be kept under cover. There is not a haystack in Canada. The typical modern mixed farm barn is a gambrel-roofed structure about forty feet high to the ridge. The ground-floor walls are of stone or concrete. The superstructure is of timber trusses without supporting posts and sheeted with vertical boarding or metal. On the ground floor the stock is kept, the barn being wide enough to hold two rows of cattle facing inwards to a feeding passage. The upper floor holds the crop. It acts also as insulation. There is great mechanical efficiency obtained by equipment for cleaning, feeding, watering, ventilation and ensilage. Access for carts to the crop floor is up an earth ramp. A silo is usually placed in the corner between this ramp and the barn wall, through which there is access from the stock floor. Besides the barn there are the many buildings which scientific efficiency has brought to processing. However, despite all effort the farms have become the "depressed areas" of Canada. This is largely due to the colossal wheat surplus that has lowered the price of the great Western staple. This was piling up before the war and has now reached such a stage that huge wooden "distress bins" are being added at farm and storage elevators throughout the country. These distress bins are, it is hoped, only temporary and are operated in the same manner as a storage elevator. The operation and construction of an elevator are described elsewhere. Every agricultural grain processing plant has some form of storage elevator attached to it, as in the case of the malting house and flour mills illustrated on the opposite page.

Timber is the second greatest product of Canadian soil. It will be discussed in connection with the industries of the Dominion. As for wine, it is not usually known that the Niagara Peninsula produces grapes in abundance, and with the cutting off of supplies from Europe this industry has expanded considerably. The "packing" industry has been given the important job of supplying the United Kingdom with quantities of meat products and the name "Canada Packers" on pork products from several plants similar to the one illustrated may be becoming better and better known. These plants, often unpopular with the farmer because of their hold on prices, follow the United States type and have developed butchery to the finest science. All have the same basic plan. The stock is driven up an inclined outside ramp to the top or "killing floor" below which the plant is divided vertically by a wall, on one side of which meat is processed, on the other the hides and inedible offal. The processing floors are connected vertically by chutes till the finished product is ready for shipment on the ground floor. The more complex equipment is nearly all made in the United States. Sausage factory, offices and power house are usual annexes. Cold storage takes up approximately one-quarter of the total cubage.


*Canada Packers are producers of tinned meats. This plant at Edmonton, Alberta, by Professor E. R. Arthur, has the offices on the left, the rail loading platform with a special rail for lowering ice into refrigerator cars in the foreground, and the cold storage floors behind the blank wall.*



# Industrial Canada

ABOUT 1800 Canada had hardly more than half a million inhabitants. Fur was the only export article worth mentioning. Of industry there was, of course, nothing. To-day a population of over ten million lives in the Dominion. Canada has become the leading exporter of wheat and the leading exporter of platinum, radium, cobalt and asbestos in the world. She produces 85 or 90 per cent. of the world's nickel, 40 per cent. of the world's newsprint paper, and 12 per cent. of the world's tin, lead and zinc. Her importance in the crude oil market is growing fast.

There are at present 85 million acres of forest, 25 million acres of wheat and 12½ million acres of oats. Most of the forests are in the west, in British Columbia and the North West Territory, most of the wheat is in the centre, in Manitoba, Saskatchewan and Alberta (in fact 24¼ of the 25 million). The distribution of water power through the country is unusually even. Crude oil is chiefly concentrated in one part of Alberta; of the heavy industries most have their seat in Ontario; most of the fisheries in Nova Scotia and New Brunswick; most of the dairying in Quebec and Ontario; and most of the fruit-growing and canning in British Columbia and Ontario. The fur trade is no longer the privilege of the north. Fur farms have spread far and wide. About 40 per cent. of furs for export now come from the farms.

As for capital invested in Canadian industries, 700 million dollars are in the lumber (forest production and mills production) trade, 300 million in the paper and pulp industries, nearly 300 in hydro-electric power stations, 120 in steel, and about 110 in copper, lead, zinc and nickel. Of this capital, incidentally, only 60 per cent. is Canadian; 12 per cent. is held by the United Kingdom; the rest chiefly by the United States.

To illustrate so many industrial activities in a few pages, a very narrow selection of representative examples had to be made. They were chosen for variety of purpose and location as well as for architectural interest.

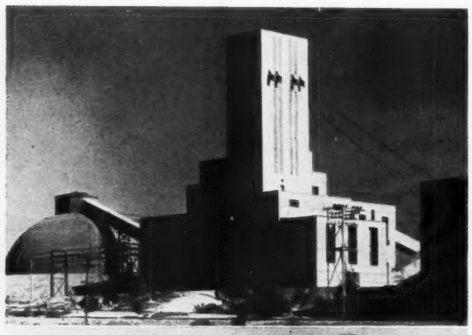
Canadian industry would not have developed so rapidly in the twentieth century if it had not been for the country's immense water power. The time when this was first harnessed into the generation of electricity marks a turning point in the industrial history of the Dominion. Mighty waterfalls exist in the east, as in the west (the one illustrated as a headpiece to this article is overshadowed by the unforgettable shape of Mount Robson); dams and barrages have been erected and artificial lakes created on a large scale. Water is the industrial blood of Canada. Hydro-electric power has, however, been nationalized only in Ontario; elsewhere it is open to free enterprise, although under close provincial supervision. The Gatineau River plant is illustrated on page 94, but recent developments on the St. Maurice have been chosen for examination. This river falls 1,300 feet in a course of 240 miles before joining the St. Lawrence halfway between Montreal and Quebec, at the city of Three Rivers. Five plants are erected on its course, and five more sites have been planned for. When fully harnessed, it will develop over two million horse-power. A 135 foot gravity type dam of concrete sets on rock foundation in the gorge and forms also the substructure of the power house. On one side are four sluice gates, two well below water level for winter operation, and a flume or log channel carried on steel rocker bents. The penstocks and scroll casing are of riveted steel plate entirely embedded in the dam and substructure. Behind the dam a 26-mile pond has been formed which eliminates most of the danger from floe and frazil ice. The power output is transmitted over high tension lines operating eventually at 220,000 volts to La Tuque.

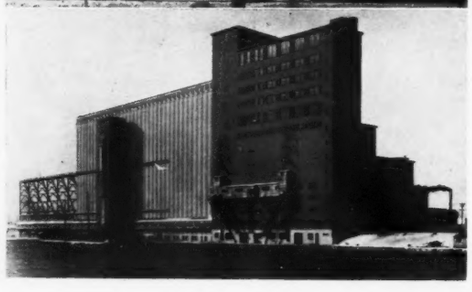
An interior view of the La Tuque plant is also illustrated on page 94. It came into initial operation in December, 1940. The four generators now develop 178,000 horse-power. They are fully enclosed and water cooled with louvres in the housing for heating the plant in winter. It belongs to the Shawinigan Water and Power Company system. The generators were fabricated in Canada by the Canadian General Electric Company.

Most of the great rivers harnessed are shared with the power companies by the pulp industry, and nearly every plant is designed to by-pass logs. The plant at La Tuque is actually jointly owned by a

*The pulp plant of the " Chicago Tribune " at Baie Comeau, on the north side of the Gulf of St. Lawrence. On the left, the pylons carrying the power from the " Tribune's " private hydro-electric plant, and the water channel bringing the logs. In the centre the factory itself. On the right a workers' estate. In the background, hospital, guest-house and the beginnings of another residential district. Baie Comeau has 2,500 inhabitants. All the property is owned by the " Tribune."*

*Hydro-electric power is the industrial lifeblood of Canada. Its distribution throughout the Dominion is unusually even. Top : the Gatineau River works with one power-house in the centre, another in the background, and the pylons on the right. Bottom : the interior of a generator plant at La Tuque completed only a year ago. It was designed by the engineers of the Shawinigan Water and Power Company with H. S. Ferguson as consulting engineer and J. C. McDougall as architect.*





*Top : the Hollinger Gold Mine at Timmins, in the north of Ontario. The hoist house with the hoisting machinery is on the extreme right. Steel cables run from here to the top of the tower placed over the main shaft of the mine. On the left, one of the gold-ore storage bins. Bottom : the elevators and flour mill of the Robin Hood Flour Company at Humberstone, Ontario. Wheat coming in by ship is emptied by a bucket cable swinging out from the marine leg, the sheet-metal-covered tower on the left. It is then delivered on to a conveyor belt that carries it into the mill proper. Here it is cleaned, dried and graded in the head-house, the highest projection of the mill. From the head-house it is spouted into the elevators for storage.*

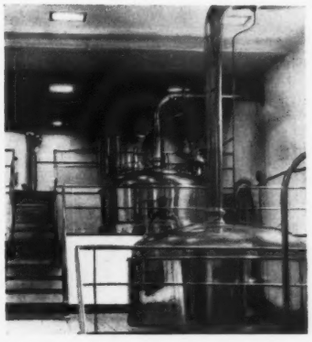
pulp plant there. Owing to an earlier crippling over-expansion of the pulp industry, which increased its output from 875,000 to 3,500,000 tons in a decade, few plants have been built in the last five years. The one shown on this page is owned by the *Chicago Tribune*, the only United States newspaper to possess a plant in Canada. The photograph gives a good idea of a well-planned and typical Canadian " bush industry." On the left may be seen the pylons carrying the power from the *Tribune's* private 25,000 horse-power hydro-electric plant, and the flume or water channel bringing in the logs. In the centre is the plant itself, with, to the right of it, the business district, community building and ice rink. In the right foreground is part of a residential district. To the right in the background are the hospital, guest-house and the beginnings of another residential district along the river. In the left background can be seen the port facilities. The town has a population of 2,500 and all the property is company-owned. The whole enterprise took nineteen months to build and was opened in January, 1938. It is situated on the wild north shore of the Gulf of St. Lawrence; the town has been named Baie Comeau.

Besides the industries that have grown up in the bush, alongside the power plants, are the industries that have come to them for their cheap power. Of such the aluminium industry is typical. The Aluminium Company of Canada mines its bauxite in British Guiana, obtains its cryolite in Greenland and its fluorspar in Newfoundland, but brings them all for processing to the electric power of the Saguenay River, north of Quebec, and for fabrication to Kingston, Ontario. At Arvida, on the Saguenay, there was built in 1940-41 the largest aluminium plant in existence. Unfortunately it proved impossible to obtain permission for the taking of photographs of its buildings.

Two interesting and important schemes for industrial expansion must be mentioned in this context. They are continuing despite the war, and will eventually give Canadian engineers and architects problems of great scope. At the instance of President Roosevelt, and against the judgment of most people popularly supposed to know, the scheme for the harnessing of the St. Lawrence River and its use as a seaway all the way to Port Arthur, near the Manitoba border, has already started. Villages are preparing to be inundated, and the whole upper river is ready for industrialization. At Steep Rock, near the western boundary of Ontario, an immense ore body of the finest steel has been located under a lake. The water-course is being changed, and the ore will be mined by the open pit process. Hopes are high that another ore body similar to this one further south, at Duluth, in the state of Michigan, will bring a great development to one of Canada's most intractable areas, the area that cuts the west from the east.

Immediately west of this area the immeasurable riches of Canadian wheat are reaped and harvested. For storage, however, they are transported to Port William or Port Arthur or even as far as Ontario and Montreal. Although the huge storage tanks or elevators are not, strictly speaking, industrial structures, they are so characteristic of the scenery of modern Canadian large-scale production and distribution, that a few words on their construction, function and methods will not be out of place here. The elevators of the Robin Hood Flour Company at Humberstone, Ontario, are shown on the left as an example. They are immediately connected with the company's flour mills. The elevators are of reinforced concrete, 160 feet high, erected with sliding forms. Storage capacity at present is 2,000,000 bushels with 2,000,000 bushels extra capacity contemplated. Wheat is brought by rail or ship. The railway cars enter the mill and are run on to cradles which tip them two ways, emptying the wheat into a hopper beneath. A car is thus emptied in four minutes. Incoming ships tie up at the wharf and are emptied by a bucket cable which swings out

from the marine leg, a tall sheet-metal-covered tower sliding by electricity. The trestles on which the marine leg rails are hung are of steel. As the wheat is carried into the marine leg, it is dumped on to a weighing device, then falls into a hopper and is delivered by spout on to a four-foot conveyor belt which carries it into the mill. Wheat brought in by rail is also so carried. The conveyor belt is housed in a bracketed gallery which runs above the wharf. Once in the mill the wheat is carried up in the lofter leg, or head-house, which is the highest projection



*An experimental plant of the Dawes Brewery at Montreal. Kettles, etc., are of a variety of metals to find out their effect on the taste of beer. Architects: L. A. and P. C. Amos.*

of the mill. In this section it is cleaned, dried, graded and put on another conveyor belt on the top floor either for delivery to the mill or for storage. Wheat taken directly into the mill is processed into flour and falls by gravity on to each processing floor till the product is finally bagged for rail transport or stored in the storage tanks for water shipment. Whenever wheat is needed from the storage tanks for processing or delivery to loading arm it is spouted on to another conveyor belt directly beneath on a level with the wharf and so carried into the lofter leg for elevation. The speed of the marine leg is 36,000 bushels an hour. Ships using the wharf are up to 600 feet long.

The elevators illustrated on page 92 are not for wheat but for barley. They belong to the Canadian Malting Company at Toronto. Hoist house, marine leg, wharf and railway siding are clearly discernible. In the background is an elevator of the older and perhaps better known type. Nowadays the system of simple rows of cylinders is usually replaced by the Maltese cross or star-space arrangement. Star-space bins fill the interspaces between each four non-contacting cylinders. In consequence flat wall surfaces appear from outside. In the Toronto plant barley is brought by rail or ship, unloaded automatically, weighed in the hoist house and dropped from the conveyor belts at the top of the elevator into the storage bins. As required, the barley is withdrawn to the malt processing plant on the far side for steeping, germination and drying, and then returned to storage elevators for ageing.

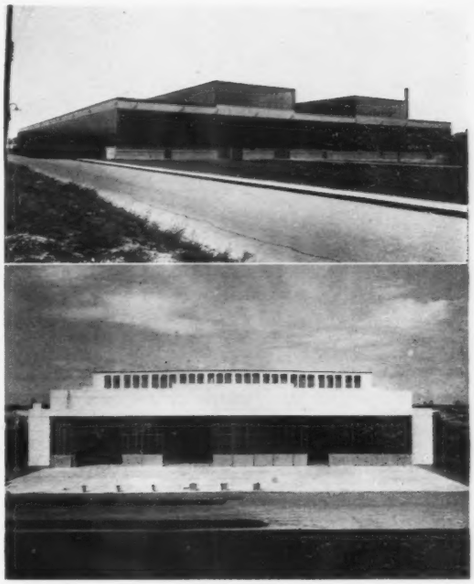
The remaining illustrations of Canadian industry are all of factories in the provinces of Ontario and Quebec. For on the whole industry is not well spread throughout the Dominion. The prairie provinces have suffered in this. Wherever proximity to basic products is of less importance, manufacturers seem to prefer the larger markets and supplies of labour in the east to the less urbanized conditions of the centre and the west.

The Hollinger Gold Mine, shown on page 94, is situated at Timmins, in the far north of Ontario. It was completed in February, 1941, and is one of the few new mining plants which are not shrouded in secrecy. The group shown is divided into four almost separate buildings each with entirely separate functions. On the extreme right is part of the brick hoist house, housing the hoisting machinery, the heat from which is used to warm the air ventilating the mine. Steel cables with a stress of 33,000 lb. per square inch run from this building into the top of a free standing concrete tower which acts as the head frame and stands over the main shaft of the mine. Behind this tower is another of elongated shape which belongs to the crusher plant and rises a total of 130 ft. from the ground. Four skips are dropped on cables in this tower, to the 3,000 ft. level where they are loaded with ore already crushed to 4 in. sizes by jaw crushers. When hoisted the skips, each carrying five tons of ore, are dumped into large steel hopper bins set in the lower building of the head frame. The original intention was to have the head frame tower pyramidal as the building had to be designed to withstand the immense stresses that a broken cable might inflict. The pyramid shape caused distortion of the bins and was discarded. The existing head frame stresses are carried on six vertical columns to the rock with side stiffening walls 12 in. thick. From the bins the ore is loaded by gravity on to belts which convey it to the elongated floorless concrete crushing and grinding tower where it is ground to ore varying from $\frac{1}{4}$ in. thickness to dust. From the base of this section it is carried to the top of the hemispherical storage bin at the extreme left constructed of steel, and there dumped. From the base of this building run four feeders to the further processes. The flutes in the concrete buildings were formed with the miner's corrugated iron, and weakened plane joints were formed in the external concrete surfaces to insure against shrinkage cracks marring the surface. Every precaution is taken against silicosis by the installation of cyclone dust collectors. In another mine at Asbestos, in the province of Quebec, where most of the world's asbestos comes from, asbestos dust is collected by ionization in a recent filter building, a total of 40 tons being collected in this way daily.

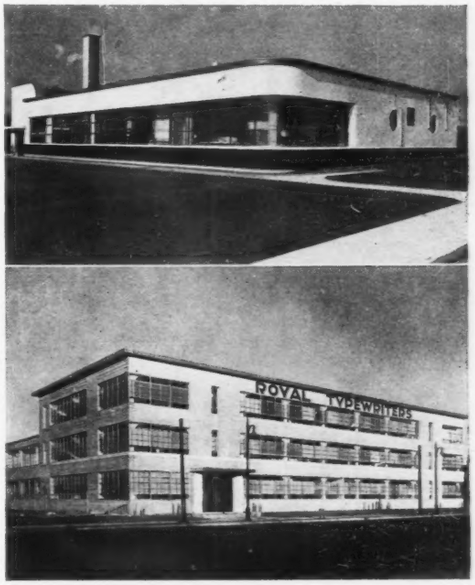
As for the illustrations on this page, they show the interior of the experimental plant of a Montreal brewery, a factory for the distilling of a soft drink at Montreal, a typewriter factory, also at Montreal, and two factories of war supplies of which neither purpose nor location may be disclosed.

The brewing plant gives some idea of the care with which the most recent of such plants are being designed and constructed. It was built as a large-scale experimental laboratory to try out the effects of various types of metal, of glass lined, and of wood equipment, on exactly comparable bases, on the flavour and body of beer and ales. Probably no experimental plant of its size and kind exists elsewhere. It is housed in the upper part of one section of Dawes Brewery, Montreal. At the top of the tiers to the left are the three hot water tanks. These are of three different metals: copper, a copper alloy and stainless steel. On the same level is the cooker of steel with a copper dome. On the level below is the mash tub of similar metals, and below that the mash filter tub, which represents particularly advanced engineering practice in its construction. The Grant, Pfaff brewing kettle, hop jack and cooler, not shown, are of conventional design, but all are of related alloys polished outside and equally finely set. The storage vats are also each of a different material. The various storage, fermenting and cooling rooms are divided from each other by plate-glass partitions. The walls are of white tile with darker bands. The floors are of grey tile. The ceiling is a special glossy paint, and great interest has been taken in the illumination. Pipes and conduits run under the floor for connections with vessels, and all equipment such as pumps is operated by individual direct-driven motor. The whole plant is air-conditioned, and the cooler room filtered to avoid contamination of the wort.

Of the other factories not much need here be said. The typewriter factory is a straightforward contemporary brick building, the factory of "7-Up" (an innocuous colourless beverage) is supposedly unstylized, but the fancy-curved parapet at its far corner betrays its American inspiration. The design of the two one-storeyed factories of war supplies is more unreservedly modern in the European sense than has up to now been usual in Canada. The smaller of the two is especially noteworthy for its material: Canadian timber.



*Two Canadian factories busy on war-time production. Their sites may not be made known. Both are paramount examples of the recent tendency towards a wholehearted acceptance of the most advanced European standards of factory design. The factory in the top picture is by Hutton and Souter, of the one below—a wooden structure—the name of the architect could not be ascertained in time for publication. The timber frame is pressure-treated for fire resistance. The exterior is covered with five-ply Douglas fir sheets $\frac{5}{8}$ in. thick. They are coated with a fireproof plastic paint.*



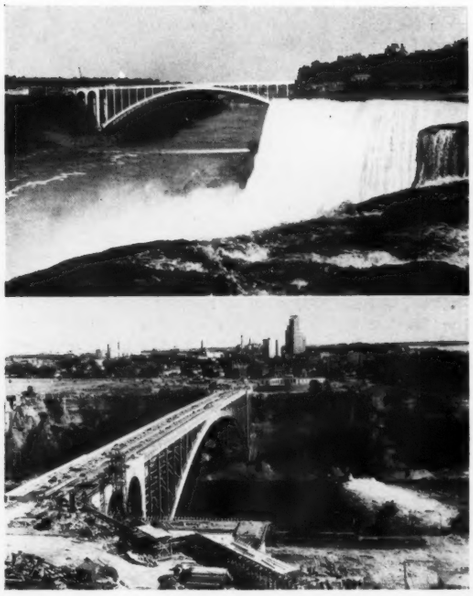

*Top: the semi-public bottling plant of a soft drink called "7-Up," by Perry, Luke and Little. Bottom: a new factory at Montreal by T. Pringle and Son. While this building is of a straightforward modern character, the fancy parapet in the far left corner of the top one shows inspiration from an American type of design that cannot be unreservedly called modern.*

# Transport

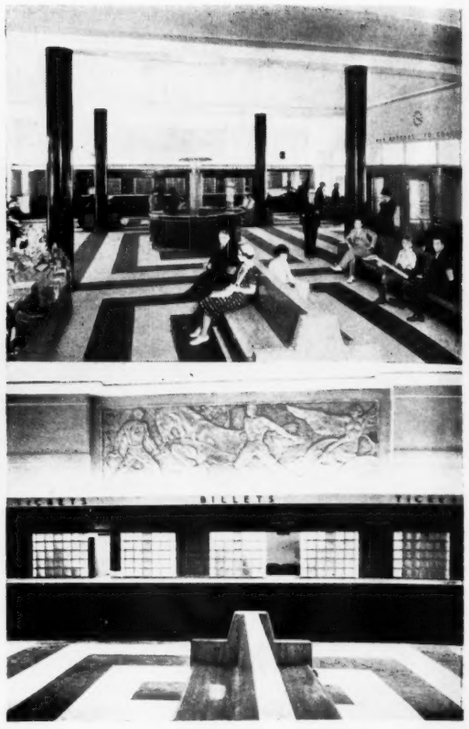
NO review of Canada is complete without some notice being taken of transportation. Of the transportation buildings recently erected those connected with motor transport are the most satisfactory. The railways were in a slump for some years before the war and few stations have been built. Every city has a bus station which, though it may not rival the railway station in size, is often more efficiently conceived. There is nearing completion in Montreal a very large railway terminus and union station for both the Canadian Pacific and Canadian National Railways. Much criticism is heard in the country that steel and labour should be wasted on it by the Dominion Government at this time. If it has a well conceived plan it will be the first large station so to have in Canada. Heretofore the metropolitan stations have followed the absurd American tradition of building an immense crush hall after the style of the Baths of Caracalla for the purpose of passenger stupefaction, and have housed the trains in partially covered alleys reached often by obscure underground passages, the trains themselves being boarded, except at one C.P.R. station, by means of portable steps.

Docks, canals and the like are on the proscribed list for illustration, but the scope of inland waterway transportation cannot be over-emphasized as can be seen at a glance from Canada's map. In air transportation Canada in peace led all countries in the tonnage of freight carried. Most of this was flown in and out of " the North " and the landing grounds and airports there were the lakes; frozen in winter or fluid in summer they are ideal. The Toronto one is illustrated on page 82, the one at Port Radium, North West Territory, on the facing page. The new airport buildings of the nationally owned Trans-Canada Air Lines may not be photographed in war time. The picture of the motor transportation buildings at Sarnia, on this page, shows the Port of Entry buildings at the end of the viaduct that sweeps down from the Blue Water Bridge there. In the foreground is the Immigration Building with, behind it, the canopied inspection stalls connecting up with the Customs building. To the right is the bus terminus and Customs examination building.

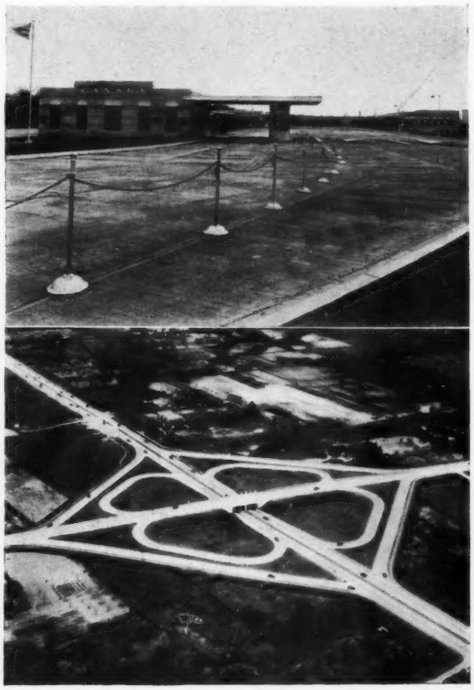
The most spectacular structures erected for transport purposes in Canada are, however, bridges. Three especially demand illustration : the Lion's Gate Bridge, across Vancouver Harbour, built to open up a large area for residential purposes (see headpiece of this article), the Blue Water Bridge, near Sarnia, Ontario, and the Rainbow Bridge, Niagara Falls (both these are illustrated on this page), with its extremely interesting constructional history and its ingeniously planned V-shaped Canadian approaches incorporating all that is necessary to cope with incoming customs traffic and outgoing emigration traffic. In addition, mention must be made of the system of bridges and viaducts across the Thousand Islands of the St. Lawrence River just east of Lake Ontario. Within a day's drive of these bridges lives one-third of the population of Canada and one-fourth of the population of the United States. The traffic across is accordingly heavy.



*The Rainbow Bridge, Niagara Falls, built in 1940-41 by Aymar Embury II, of New York, with Waddell and Hardesty, also of New York, as designing engineers. No temporary structure could be fixed into the river which runs at a minimum speed of 30 m.p.h. The type of bridge chosen was, therefore, a hingeless steel arch on concrete abutments. The girders were set with the unusual use of temporary tieback towers of the suspension bridge type. Total length 1,450 ft. The Canadian approach to the bridge is V-shaped. Emigration traffic passes along one arm of the V, customs traffic along the other. This is handled six cars at a time at shelters fitted for flood-lighting of car interiors.*



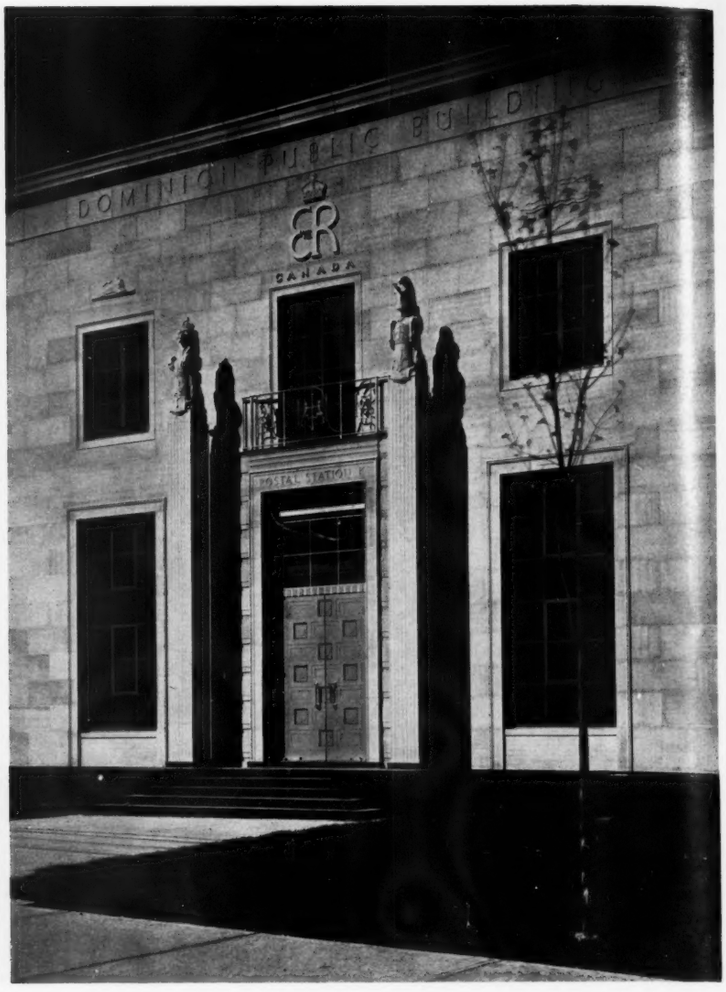

*Two interiors of the Provincial Transport Company's bus terminal at Montreal, by Shorey & Ritchie. The exterior of one of the best planned of such large Canadian bus stations can be seen in another illustration on this page.*



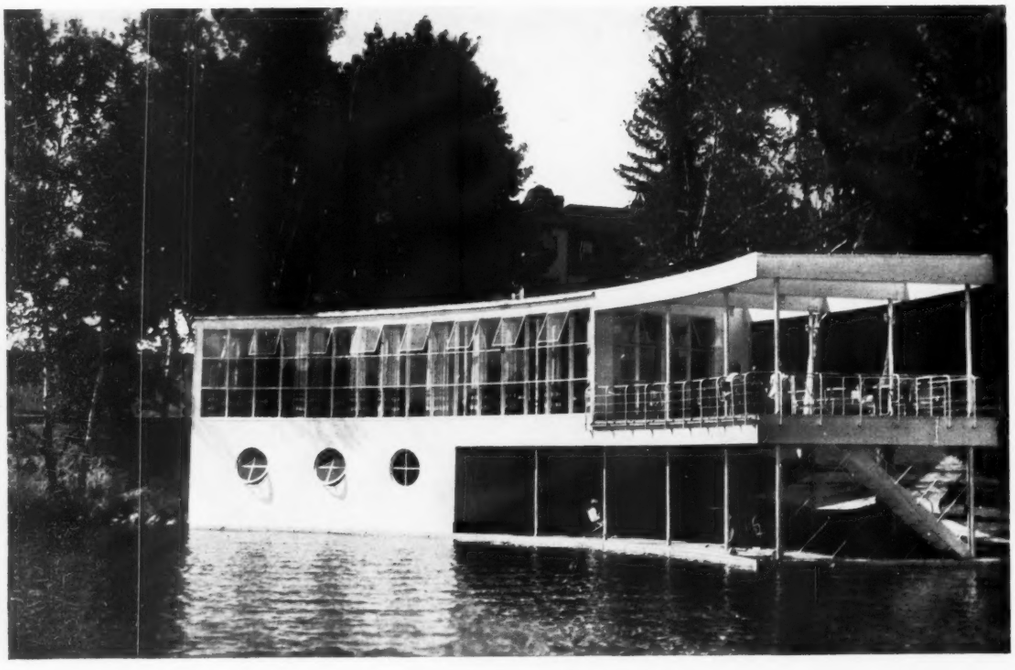
*Top : the " Port of Entry " of the bus terminal at Sarnia, Ontario, by Norman B. Forbes. Bottom : the Clover-Leaf Crossing, near Port Credit, Ontario, one of the many gigantic non-stop highway crossings of the new Queen Elizabeth Way of the Ontario Department of Highways. This road has only one rival in North America. At night the whole mileage is illuminated.*

*London is not the only city with trams and buses designed to good modern standards. But whoever was the designer of this Toronto street car interior has not seen the work of the L.P.T.B. in vain.*

**TRANSPORT BY CAR, BARGE AND PLANE.** The popularity of the private car in Canada is second only to the United States. For goods traffic the roads are also serious rivals of the railways. The scope of waterways, on the other hand, cannot be over-emphasized, as a glance at the map of the Dominion will show. Of canals, the Welland Canal (below, left), which by-passes the Niagara River, is probably the most famous. As for air transport, Canada before the war was ahead of all other countries in the tonnage of freight carried, especially goods from the far north are frequently transported by plane. Below, right : a plane and sledges on the frozen Great Bear Lake. The lake serves as the airport for Port Radium, North West Territory. Amongst Canadian buildings for transport purposes, perhaps the boldest is the Lion's Gate Bridge across the first narrows of Vancouver Harbour, shown in the head-piece to the article on the facing page. The main span is the longest stranded cable type yet built. The distance between the main piers is 1,550 ft. and the total length is 5,820 ft. The largest liners of any Pacific route can pass under the bridge. The Blue Water Bridge, above, is 1¼ miles long with a main span of 871 ft. It spans the St. Clair River traffic artery between Sarnia, Ontario, and Port Huron, Michigan. The Lion's Gate Bridge was a British commercial venture, the Blue Water Bridge was designed and erected in the United States.




**A HOSPITAL AND A POST OFFICE.** While the majority of public and semi-public buildings in Canada is still of traditional design the number of strictly contemporary ones has grown considerably within the last few years. Three interpretations of the contemporary idiom are illustrated on this page. Left: The Our Lady of Mercy Roman Catholic Hospital in Toronto, by Marani, Lawson and Morris. Right: Entrance to the K.-District Post Office in Toronto, by Murray Brown.



**THE DECK.** This little pavilion forms part of Elgin House, Lake Joseph, Muskoka, Ontario, a wooden summer hotel. The owners asked the architect, Mackenzie Waters, to design a scheme for remodelling the hotel. The first unit to be carried out was the pavilion illustrated. It contains a large lounge, two sun decks and a shop.

S O M E R E C E N T

# City Architecture

THERE is so little unity of purpose and idiom in the public and commercial architecture of the cities of Canada that not more can here be attempted than a presentation of a number amongst the best or most significant buildings with some comments on their characteristics.

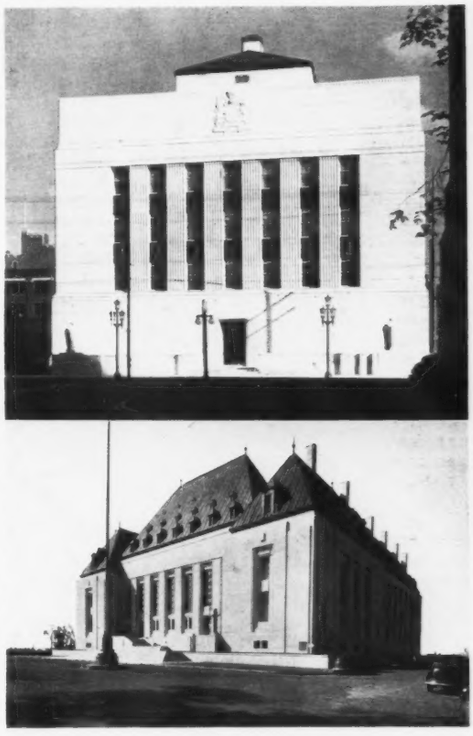
Of Dominion public buildings not many will be found. Owing to the exasperatingly legalistic rulings of the Privy Council in London on Canadian constitutional problems, the Dominion Government has been deprived of much of the power intended for it by the fathers of the Confederation. It is now the chief taxing authority and has therefore erected a number of tax collecting centres, while the Provincial legislatures are the spending authorities. In our connection the only Federal buildings which need be discussed are the Supreme Court and the Bank of Canada, both in Ottawa. Illustrations are on this page. The Supreme Court Building backs, like so many Ottawa buildings, on the high bank of the Ottawa River, and has there a terrace with a fountain. Its steep French roof, a characteristic Ottawa feature, is sheeted with copper. Although these high-pitched roofs are often supposed to be especially appropriate for countries with much snow, some of them have to be hosed with live steam during the winter to forestall the dangers from icicles. The building is wholly air-conditioned, as is the Bank of Canada.

The Bank of Canada is now a nationalized institution. The front entrance of the bank is only for those having government business with the government executives of the bank. The rear entrance is for the employees who are checked in and out through monel metal grilles and for the in and out go of bullion in armoured trucks. The building is designed for a twenty-five per cent. increase by enlarging in depth. The rear façade has, therefore, been faced with removal in mind. The stone used is a light grey granite with spandrels of polished Verde Antique marble on which are seven green bronze figures by Jacobine Jones, representing the seven major industries. It is an interesting Canadian feature that though many of the windows are protected by cast aluminium grilles, the sash itself is of white pine and double-hung to prevent heat loss and condensation from the air conditioning. The style of the building may be called of Neo-Greek derivation. In the case of the K.-District Post Office in Toronto, shown on page 98, impressions of the R.I.B.A. building in London seem to have had some influence on the handsome design. The building, limestone faced, is incidentally one of the few that bear the cipher of Edward VIII. While the style here points towards Europe, that of the most conspicuous recent piece of municipal architecture in Canada, the City Hall in Vancouver, is decidedly American in the grouping of its blocks as well as its detail, as can be seen in the photograph below. Considering the reluctance of most public authorities and of big firms in the Dominion to commit themselves to a contemporary style, the City Hall of Vancouver is of an importance similar to that of the Shelton Hotel in New York some fifteen years ago. More strictly modern forms in the European sense have only very rarely been introduced into public and commercial architecture; and where they are found, they are, as a rule, of a more utilitarian character. The charming radio station at Marieville, Quebec, illustrated in this article, page 100, although not situated in a city, is one of the many new little radio transmitter stations operated by the semi-governmental Canadian Broadcasting Corporation.

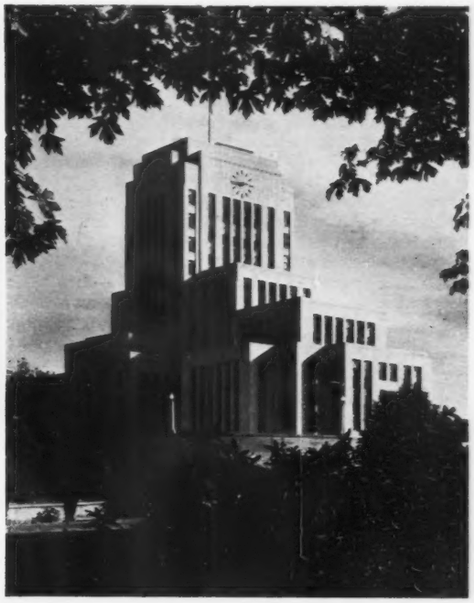
The drill hall of the Fort York Armouries, Toronto (also on page 100), is interesting not only because of its lamella roof of about the maximum width obtainable, but also as a typically Canadian kind of building. These armouries were used for the training of the non-permanent militia in peace-time. They have battalion mess rooms and ordnance depots besides their covered drill halls. The photograph of the Fort York Hall was taken before the war, when the militia was chiefly equipped with swords, perhaps against Canada's "Good Neighbours" then chiefly equipped with badges. Side by side with the militia drill hall, the gymnasium is shown which Lady Beaverbrook presented to the University of Fredericton, New Brunswick. It is a well-built structure, excellently equipped. The baskets are for the game of basketball which is the principal team game of North America. It is said to be played by more people than any other game in the world, and does not suffer from the use of it as a spectacle. Such gymnasia are, needless to say, extremely important for keeping up fitness during the winter months. Schools and universities in Britain would do well to look to North America for improvements of their athletic accommodation.

Of the four hospitals illustrated on pages 98 and 100, the Shaughnessy Hospital in Vancouver is a military hospital. It is of reinforced concrete and was completed only in 1941. It has an H plan with a floor area of nearly 40,000 square feet, and contains all that the most efficient civil institutions possess including radio installation to every bed. Administrative offices are housed in the wing to the extreme left. An auditorium seating 300 with sound projection room is on an axis with the entrance. The low pressure heating system is controlled in eleven zones. There is a traffic deck on the roof. The Sanatorium at Mont Joli, Quebec, belongs to the Government of the province. Its site is a small hill 800 feet high and overlooks the waters of the Gulf of the St. Lawrence. Built on a T plan it is designed to serve a little under 300 bed patients and has 80 resident attendants. Owing to the severity of the climate and the structural dangers from expansion and contraction its construction is in three entirely separate loose, butt-jointed units. It is, incidentally, as all Quebec hospitals, under the care of *réligieuses*. The Our Lady of Mercy Hospital in Toronto is owned by a Roman Catholic order. It is for indigent incurables, most of whom are ward patients. Forty per cent. are in wheel chairs. Built chiefly as a cheerful place for the quiet ending of its patients' days, it has no operating rooms, but each floor has three large semi-circular sun rooms, and there is an auditorium and chapel. The exterior walls are of light red brick with stone dressings. The windows are pine with aluminium weatherstripping. The stone sculpture over the entrance is by Jacobine Jones. The Jewish General Hospital in Montreal is also brick-faced. Its construction is concrete. The site is on a slope so that there is an extra floor in the rear. To the right is the out-patients' entrance.

While religious bodies have proved gratifyingly progressive in their hospitals, churches are for obvious reasons among the most conservative buildings. The cathedral in course of erection at Victoria,

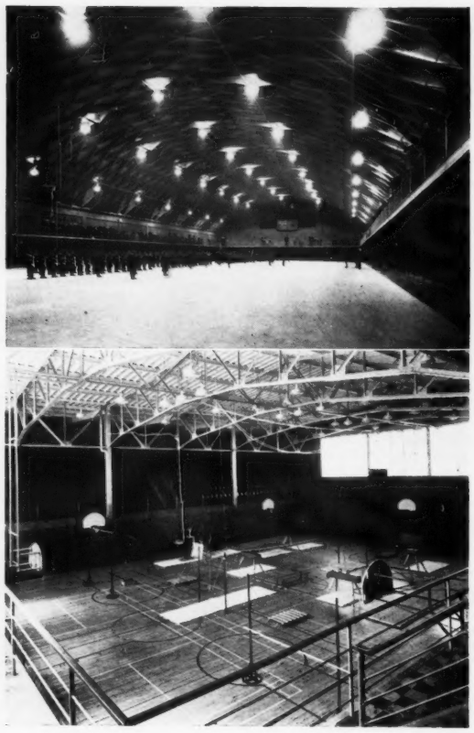


*American and French inspiration in recent Ottawa buildings. Top: the Bank of Canada, by Marani, Lawson & Morris, with S. G. Davenport. Bottom: the Supreme Court, by Ernest Cormier, a contemporary version of the château tradition.*

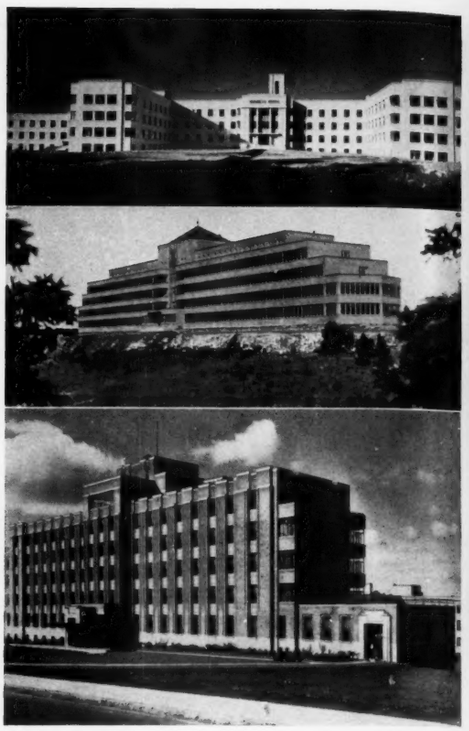


*The City Hall, Vancouver, by Townley & Matheson. Vancouver has grown from a wilderness site to a city of 350,000 in the course of a man's life. The engineer who laid out the first plan lived to see the new city hall dominate what he knew as forests. Of the large public buildings of Canada this is the most uncompromisingly modern. It is of reinforced concrete construction faced with a local limestone and provides 74,000 square feet of office space. Under the concrete driveway encircling the building is a covered park for sixty cars connected with the upper floors by lifts. Security vaults with the latest safety devices are installed in the basement. The clocks in the tower are neon-illuminated.*

*Top : the C.B.M. radio transmitter station at Marieville, Quebec, by D. G. McKinstry. It belongs to the Canadian Broadcasting Corporation. Bottom : interior of a " Honey Dew " cafeteria in Toronto, one of a chain of many. The murals are of monel metal. The design was carried out by the company's own building department.*



*Top : drill hall of the Fort York Armouries in Toronto, by Marani, Lawson & Morris. The roof is of the lamella type. These armouries are the headquarters of the local militia units. Bottom : the Lady Beaverbrook Memorial Gymnasium at the Provincial University of Fredericton, New Brunswick, by Alward & Gillies.*



*Three recent hospitals. Top : the St. George's Sanatorium, Mont Joli, Quebec, by Auger & Maingny, built by the Provincial Government. Centre : the Jewish General Hospital in Montreal, by J. Cecil McDougall. Bottom : the Shaughnessy Military Hospital in Vancouver, by Mercer & Mercer, erected since the war began.*

for instance, is of a restrained Early English, the Shrine of Ste. Anne de Beaupré, Quebec (illustrated on page 83), of a French—not Canadian—Romanesque. Chapels are incidentally also—a typically Canadian custom—to be found attached to the undertakers' offices, or funeral parlours. Probably the majority of city funeral services are nowadays conducted in them. The funeral director's building at Vancouver, shown on the opposite page, is unusually straightforward. There is nothing of the cheap veneer of insinuating refinement so frequent in such buildings. The grouping of the chapel with the side entrance for cars deserves special mention.

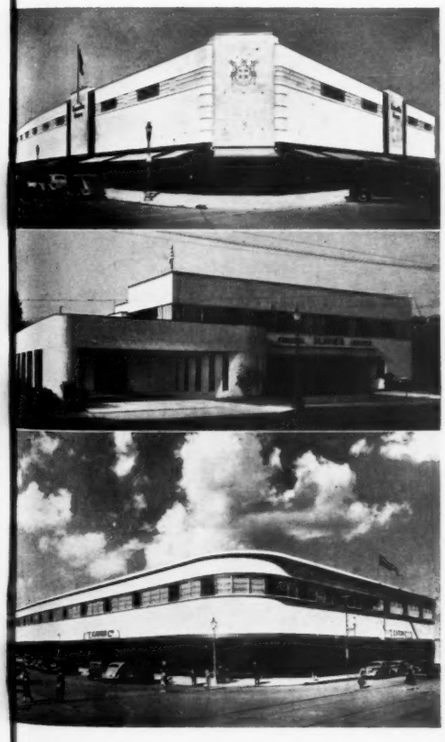
Another group of buildings which—for quite different reasons—has so far declined any compromise with contemporary ideals is city hotels. The spell of the Château Frontenac in Quebec of 1893 has not yet been broken. François I skyscrapers are still the fashion everywhere. A typical example from Vancouver serves as a headpiece to this article. Another one at Ottawa had originally been designed with a brick face, but was re-dressed in the château manner at the request of the city. In the strongest contrast to these massive piles stands the charming pavilion, the first unit completed of a remodelling scheme, of the Elgin House Hotel, Lake Joseph, Muskoka, Ontario (see illustration on page 98). It combines a lounge, two sun decks and a shop. The curved shape follows the shore line. Amongst hotel and restaurant interiors the " Honey Dew " cafeterias are worth noting. The one from Toronto, illustrated above, is typical of many under the same management throughout Canada. The cooling and heating system is remarkable. Walls and ceilings are acoustically very successful. The murals are in monel metal.

Of strictly commercial architecture, one modern type is well represented by the Bank of Canada discussed above. It is very similar in style to many Toronto office buildings, its architects having their practice in that city. As to banks, their interiors are as a rule more straightforward and convincing than their exteriors. The branch office of the Bank of Nova Scotia at New Westminster, British Columbia, on the right, bottom, is a typical example. Exteriors are never quite as bluntly contemporary as the William H. Wright Building in Toronto, also on the right, and this is in reality more a factory than an office building. It holds the offices and press of the *Globe and Mail*, a morning newspaper. Press and offices are combined under one roof. The twelve-unit press can supply 150,000 thirty-two page papers per hour. It is fully visible day and night through the long windows on the ground floor. The plan is wholly based on production processes. Particular attention was paid to the size of the mailing room and efficiency of its planning in order not to depreciate the value of the high-speed press. Lifts, lavatories and pipes are banked along the only blank wall. The public space is somewhat Babylonian in character with light fixtures of spun aluminium and gold plate mountings. The structural frame is of reinforced concrete because of its anti-vibration advantages. The minimum load per square foot was considered to be 150 lb. The heavy cooling load in summer is lightened by the use of an inundated roof with approximately three inches of static water. The exterior is limestone faced.

In addition one shop interior characteristic of a good and imaginative type often not designed by architects but by display experts is illustrated on the next page, together with one excellent shop exterior, that of Jaeger's in Toronto, one example of modern window display, and two stores of a kind popular in the prairie provinces. Both are at Edmonton, one belonging to the Hudson's Bay Company, that once proud exploiter of half a continent, the other to the T. Eaton Company now locked in fierce commercial competition with the Hudson's Bay Company throughout Western Canada. Both are designed for the inevitable future expansion. Both are served by escalators and every modern mechanical device for expediting deliveries. Both use local black granite. The upper floor of " The Bay " is lit by glass bricks and incised panels of figures and coats of arms accentuate the entrances.

*Press and Banking. The interior of the Bank of Nova Scotia, at New Westminster, British Columbia, by Murray Brown, and the exterior of the Globe and Mail Building in Toronto, by Mathers & Haldenby. The huge presses are fully visible day and night through the ground-floor windows.*


*Top: Jaeger's shop in Toronto, designed by Mr. and Mrs. Duncan Miller, of London. The stone used is travertine. Centre: the windows of the Tip-Top Tailors in Toronto. Bottom: the interior of Simpson's book store, also in Toronto. Both these were designed by display artists, not by architects.*



*Top: the Hudson's Bay Company stores at Edmonton, by Moody & Moore, a type of two storied store popular in the prairie provinces. Bottom picture, another store at Edmonton: T. Eaton's, by Northwood & Chivers. Centre: an undertaker's offices in Vancouver, by Townley & Matheson.*

# Domestic Architecture

CANADA has no constructive housing policy. The country still believes in "laisser-faire," and only a very tentative toe has been put in the great social sea of housing by the Government, and even that has now been withdrawn.

As for the very poor there is no organized housing at all, the municipal and provincial supposition being that such do not exist. This is, of course, false; but conditions are for a number of reasons not quite as bad as they might be. The first is that wages are high, and a workman in work will not stand for poor housing and has the money to command attention. In doing so he vacates a building suitable for others long before it is unserviceable for habitation on the European standard. The chaotic condition of values in expanding cities, although it leaves dismal pockets of wooden deterioration, often helps in the destruction of proto-slums. Rental housing is not taxed on its revenue, though what it is taxed on is seldom clear. In consequence, there comes a time when the owner-landlord finds it more profitable to operate his piece of land as a car parking lot than as the site of rentable quarters for the very poor. This time, too, comes before the building is utterly unserviceable as a habitation. Car parking and used car sale lots are the great blights of North American cities and give to several in Canada the aspect of bomb devastation. They usually spot the perimeter of each expanding business district. The very poor are just beyond this perimeter gradually moving outwards into better districts. It is only in the pockets that real slum conditions exist.

There is also another class of poor-type housing that probably has little counterpart in Europe. This is the housing that Canadians with enterprising qualities, and disregard for their wives, build for themselves by themselves. These houses are built on subdivided farms outside city and town by-law areas. Many a man digs a hole, pours his own concrete foundation on weekends, roofs it with floor joists and moves in. Next year a tar-papered truncated erection occurs on the basement, followed by periodic additions till he has eventually a fine brick-veneered home with a garage and chickens. During the course of gradual addition his housing conditions are bad and if he loses his job his conditions may become appalling. The writer once had the privilege of sharing with an English butler his first views of Canada. As the train moved out of our port of debarkation and these wooden houses came into view, he remarked: "There must be a great quantity of poultry in Canada, Sir, but I don't see them about."

The tradition of the single owner-occupied house is very strong, due perhaps to a number of psychological reasons, but chiefly due to the recent influx of rural labour and traditions into industrialized centres. It is the farmer's son with mechanical training who usually builds his own house, but the technical ability of a Canadian labourer with his hands cannot be overrated. The tenement is virtually unknown except in Montreal and Toronto, and in these the proportion is very small. A definite distinction is made between "flat" and "apartment," a flat being a suite or floor in a house that has been divided for multi-family occupancy, although it can mean a kitchenless apartment. "Duplex" is the term used for an apartment in a small building. The usual duplex is one floor in a specially erected building that looks like a small privately-owned house. The by-laws of Toronto have allowed many otherwise excellent apartment house plans to have wings too close together for really satisfactory occupancy. Blocks of flats of contemporary appearance are extremely rare.

Terraces of houses are rare, too, so are semi-detached houses, although "duplexes" are popular among the more wealthy.

In the cities, low-cost housing is left entirely to the speculative builder. He is usually an individual with little capital and, except in Montreal, there are no building companies or societies of any size. Those in Montreal are often operated with English or European refugee capital. It is the custom of architects to pour scorn on this housing, while European housing experts look at these fantastic rows of dainty nests with curious amazement. Before they are built they are obsolete in plan and style, but they offer more than many men have bled for on the streets of Europe. The usual worker's house has three bedrooms, a living-room, kitchen with "dinette," bathroom, windbreak vestibule and in the basement a recreation room, if he cares to use this space as such. For equipment he has gas or electric stove, washing-machine and, of course, a radio. No man will live in a house that resembles his neighbour's, and he is not fooled by a different porch or the reversal of the plan so that his bedrooms face due south instead of due north. His house must be entirely different to anything else near him. This taxes the ingenuity of designers, but they succeed and every new fenceless Canadian home spits with pride in the face of its neighbour. This is so with the homes of the poor, of the not so poor, and, of course, of the rich.

The Dominion Government concerned itself with housing by offering 5 per cent. loans on 80 per cent. of the cost of any house under $4,000. In an effort to improve the plan and design of the speculative house they instituted an architectural competition

*Blocks of apartments are unusual in Canada, except in Montreal and Toronto. The ones here illustrated are both in Toronto, and both by Forsey, Page & Steele. Top: Whitehall Apartments; bottom: Garden Court. In style they seem to be more closely related to English than to American architecture.*

for the ideal small home. Hundreds of architects entered and the plans chosen became the property of the Government and could be bought, along with " memorandum " specifications to be filled in by the purchaser, for $10. Their plans as workers' housing may be of interest. They, however, have done little to improve the design of the speculative house.

The only districts where these loans have been taken up as the basis of any considerable housing schemes are in the Montreal suburbs, or area towns, of Verdun and Lachine. Briefly put, the municipality of Verdun will sell a lot 50 ft. by 150 ft. with paved street frontage, drainage, water and electricity for $50, provided a house is built on it at once. Several building companies operated by English and refugee capital have built up to 200 houses in a year in these districts under these favourable conditions. At Verdun there has also been built an auditorium and swimming pool. Lachine incidentally was so called derisively because its original seigneur thought it was on the way to China.

Rural housing is primitive, especially in the Prairie provinces, the rocky districts of the Maritimes and the whole northern edge. Although freight rates are half those of England or any other Dominion, the cost of transport of various materials is very great. In early settled districts or near the greater centres rural housing is better, but the idea of having Governments build farm houses, as has been done in the U.S.A., is politically unthinkable. Electricity is very widespread but not universal.

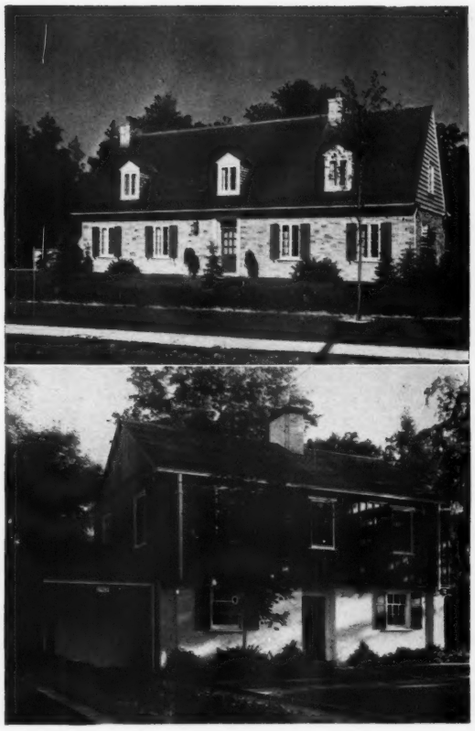
The original indigenous native population of Canada is now very small indeed, and contrary to imaginations Canadians can pass their whole lives without seeing one. If they do see one he is mistaken for another Chinaman. The housing of Indians and Eskimos is primitive. Indians on reservations are like quintuplets, under the guardianship of Government, but not as well cared for. Eskimos are seldom allowed " out " as, when taken " back in," they are incapable of regaining their balance. The Eskimo house is the very " Bauhaus " of function.

Only in the field of housing for the not so poor and for the rich can architects find their services required. In this field they too are powerless against " the Joneses," and they are forced to, or willing, to use all the tricks of a stylized trade. Some of the most pretentious Canadian homes have been illustrated in detail in recent English publications and are not included. It might have been of interest to English readers to see the plans of a typical Canadian house. But it should be obvious by now to any reader that there is nothing that can be called typical of the whole of Canada, and to give all the types would take a great deal of space and attain only a small objective.

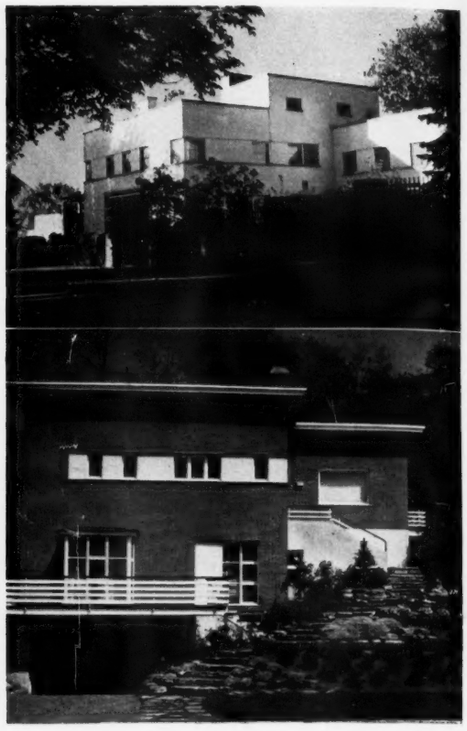
Regarding the houses of the rich and the less rich, their settings must be considered before everything. In England the garden of a house was its pride and joy, and this was so even in small houses ; they all look outwards. Modern houses with glass walls, sundecks and extended plans make in England for the enjoyment of living. In Canada these things defeat their purpose. Regard the beauty of nature in any photo of a Montreal winter, remembering that this lasts for five months, and the reasons for looking inwards will be obvious. The reasons against extended plans should be obvious too. Even in summer gardens are not used as they are in England. Mosquitoes and flies are very bad, the heat is great, the severe winter puts a strain on even the commonest perennials and kills all winter leafed bushes. Gardens are, therefore, except for the enthusiast, entirely subordinate to the house. This subordination does away with the front fence so that the houses are fully visible from the street ; often they are not even separated by a " token " fence, and the lawn runs directly down to the concrete sidewalk (" pavement " in Canada means the road surface). Several such lawns are shown. This also means that the " grounds " of even the most expensive houses are small lots. Some attempts are made in cities to use Canadian nature rather than an exotic garden as a natural area around a house, but this is difficult.

Now it must not be thought that Canadians regard the beauties of nature less than the natives of fairer climes because they are not good gardeners. Probably the majority of the owners of the architects' houses illustrated here have something that they refer to as " the cottage " or " the shack." These are wooden houses on a lake, river or island between 25 and 250 miles from their home. Here possibly on some wild island with granite slabs running down from the jack pines to white-flecked fresh water they may live without plumbing, electricity or roads, but with wild flowers and sunsets and a natural garden with

[continued on page xxxv]

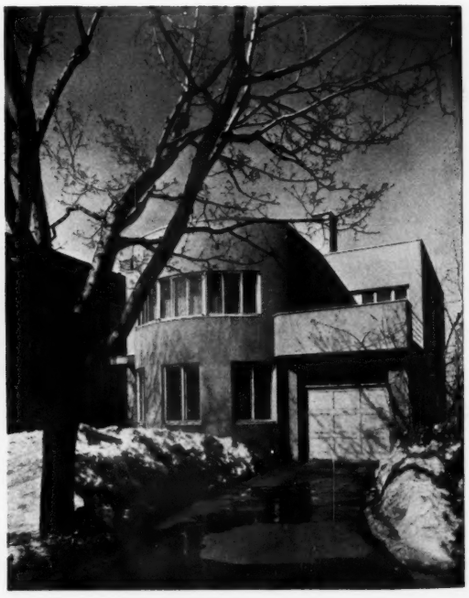


*Two houses of traditional character. Top : in Toronto, by Allward & Govinlock ; bottom : at York Mills, Ontario, by Earle C. Morgan. American inspiration is unmistakable.*



*Two of the rare examples of strictly contemporary domestic architecture in Canada. Top : in Toronto, by Mathers & Haldenby ; bottom : in Montreal, by Monette & Parizeau.*

*A compromise between traditional and contemporary : house in Vancouver, by C. B. K. Van Norman. The dark weather boarding and the moderate pitch of the roof blend very satisfactorily with the large modern windows, the white walls of the ground floor and the projecting balcony on the left.*



*House in Montreal, by Monette & Parizeau. The Canadian climate has made it hard for architects to convince clients of the blessings of modern forms. Flat roofs and large windows are looked upon with distrust by those thinking in terms of five months of snow. Yet architects could have pointed to Swiss contemporary building, the desirability of as much sun as possible during long winters, and the danger from icicles which is caused by high-pitched roofs in the Canadian climate.*

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vistas greater than Versailles. Nor is this a rich man's pleasure; the owners of small houses can have cottages too. Where there are no services there are no taxes. For children at least these summer places are finer than the greatest pleasaunces of England.

Modern architecture has not captured the imagination of the Canadian home owner. Flashing large sundecks for a temperature range of 140° is not a pleasant job to be responsible for, nor is shovelling snow off a flat roof. Large plate glass windows are a heat loss and against the natural intent of Canadian houses to look inwards. But the chief obstacle to modern architecture of European type is psychological. The people of a new untidy country have no desire for stark simplicity in their own homes; it is all around them. They like gentleness, and tradition to help them root.

The houses illustrated are fair examples of Canadian practice, ranging from the English half-timbered suburban type and the wealthy English Neo-Georgian type to the few examples of a more or less uncompromisingly contemporary European style.

To add a few words, in conclusion, on building materials or building methods in Canada, as each district has its types and traditions it would be futile to generalize. It is, however, a surprise to Englishmen not to see roof tiles, lead flashing, larders, a domestic steel sash, more fireplaces, more damp-proof courses, and to be denied the pleasure of watching bath-water discharge over gulleys. The old Imperial tradition of festooning British façades with soil pipes is not followed. Englishmen, and of course Scots, are on the other hand surprised to see every single residential street with trees, few chimney pots, nearly all lighted interiors fully visible and unblinded from the street, house numbers ranging up into the tens of thousands owing to the system of enumeration, and fly-screens on every window. The presence of fly-screens on every business or domestic window is essential, and some German officer prisoners of war lately found this to their cost when they deliberately destroyed all in their place of confinement, considering them clear contraventions of the Geneva Convention. That night there was not a female mosquito in the district that did not hold some theory on Aryan blood. Within a week they asked to have them replaced at their expense.

*Two typical groups of speculative builders' houses in Toronto. The top one is for industrial foremen or clerks, each house as different from the other as possible, the bottom one contains so-called "duplexes," i.e. flats of the type designed for houses of such dimensions. The lack of fences and outside waste pipes should be noted. In the wealthy suburbs there are no pavements to the road because all traffic is motorized.*

## From the President of the Royal Architectural Institute of Canada

*The material for this Canadian number of* THE ARCHITECTURAL REVIEW *was voluntarily written, prepared and assembled in Canada by Anthony Adamson, architect, under the sponsorship of the Royal Architectural Institute of Canada, and with the assistance of the named contributors. The Royal Architectural Institute assumed all Canadian expenses incidental to the assembly. The co-operation of those members of the Institute who gave photographs of their work is acknowledged. The co-operation is also acknowledged of those engineers, sculptors, building contractors, businesses, mines and manufacturers who supplied photographs or drawings, some of which it has not been found possible to include. Acknowledgment in particular is made to Mr. A. J. H. Richardson of the Public Archives of Canada and to Mr. Lanctot, the archivist, to the Associated Screen News, to the Shawinigan Water and Power Co. Ltd., to the Pulp and Paper Magazine, and to the Government Departments of Public Information and of Lands and Forests. Mr. Gordon Adamson, Mr. John Layng, Mr. George Piersol, in Toronto, members of the Institute, and Mr. Gordon Pitts in Montreal, Fellow, assisted in obtaining some of the photographs. An attempt has been made to exhibit the work of architects and engineers across the whole of Canada. This has been difficult as the only Canadian architectural magazine is the Journal of the Institute. Much interesting work may, therefore, have been ignored and some work sought was unobtainable.*

Burwell R. Fauss.
Pres. R.A.I.C.

## PHOTOGRAPHS

Acknowledgment is due to all those who have kindly lent photographs for this issue, including the following: Associated Screen News (Pulp Mills, Ocean Falls, B.C., page 82; Bridge, Ste. Jovite, Quebec, page 83; Winter in Canada, page 86). Canadian National Railways (Emperor Falls, Mount Robson, B.C., page 93). Canadian Pacific Railway (Parliament Buildings, Victoria, B.C., page 89; Hotel, Vancouver, page 99). Haanel Cassidy (storage elevator of the Canada Malting Company, Toronto, page 92). Dominion Government (Fort Prince of Wales, Churchill, Manitoba, page 85). Eldorado Mines (Port Radium, B.C., page 81). Sir E. Flavelle (Peggy's Cove, Nova Scotia, page 81; Royal York Hotel, Ontario, page 82; private house, Toronto, page 83). Leonard Frank (City Hall, Vancouver, page 99). Ronny Jaques Studio (Canadian wheatfield, front cover illustration and page 80; suburb in Toronto, page 86; crude oil plant, page 92). National Film Board (Rideau Hall, Ottawa, page 89). National Museum of Canada (Indian village, Vancouver Island, page 84). Northern Miner (nickel converter furnace, Ontario, page 82). Nova Scotia Archives (St. John's Church, Port Joli, Quebec, page 88). Nova Scotia Government (pier, Yarmouth, Nova Scotia, page 82; village in Nova Scotia, page 85). Ontario Government (highway crossing, Ontario, page 81). Public Archives of Canada (The Recollet Church, Quebec, page 87; Maurepas Gate, Louisburg, Nova Scotia, page 87; Intendant's Palace, Quebec, page 87; village houses, Oka,


**MAP OF CANADA SHOWING PLACES MENTIONED IN THIS ISSUE**

Quebec, page 88 ; first Parliament [buildings, Ottawa, page 89 ; Port Royal Habitation, Lower Granville, Nova Scotia, page 91). Quebec Archives (Mauvide Manoir, Quebec, page 89). Quebec Government (Château Frontenac Hotel, Quebec, page 82 ; unfinished shrine of Our Lady of Lourdes, Ste. Anne de Beaupré, Quebec, page 83). Saskatchewan Government (main street, Alameda, Saskatchewan, page 81). Robert Simpson Company, Ltd. (interior of Simpson's Book Store, Toronto, page 101). University of Toronto (early log house, near Penetanguishene, Ontario, page 88 ; Barnum House, near Grafton, Ontario, page 89).

# War-time Construction

AS an indication of the expansion of construction in Canada during the war, the number of building construction contracts awarded in 1940 were 85 per cent. higher than in 1939, and those awarded in 1941 were approximately 72 per cent. higher than in 1940. Never have the structural forces and resources been so taxed. In this constructional expansion there are notable improvements in method since the last war. Architects are serving in each of the armed forces as architects, and the design of most buildings has been placed in competent hands. The value obtained for the money expended on buildings is high. Labour troubles in the building industry have been very few indeed.

The largest expenditure and greatest activity has been on industrial expansion, details of which are kept secret and only in a very few cases may photographs of new plants or plant expansions be taken. The largest aluminium plant in the world has been constructed at Arvida, and the largest output of any automatic gun plant is in Toronto. Eighteen of Canada's twenty-three new chemicals and explosives plants have begun to produce. Some of these are equal in size to any in the Empire, owing to the ability of concentrating on single plants beyond the reach of bombers. Total production from those plants finished was greater in 1941 than the total production from 1914 to 1918. From the new and expanded automative plants 150,000 trucks, etc., were delivered by September, 1941. Besides these new plants are many producing every type of war material except the heaviest guns, largest planes and naval vessels larger than destroyers.

This great industrial expansion has caused widespread housing shortage. Where reluctance on the part of capital to build houses has been found, the Dominion Government has erected prefabricated demountable wooden rental housing for industrial workers. These are of different types of construction,

*Housing to accommodate workers in Canada's expanding war industries is in timber of prefabricated, demountable type. Above is a row of these houses in course of erection. The wall and ceiling panels are sheeted internally with gypsum board, gypsum being produced in great quantities in Canada.*

but all are fabricated in sections. They were designed to be demountable and non-permanent owing to the sorry experience gained from the unsaleable industrial housing after the last war. Many of them are made fire-resistant by the use of gypsum. Up to February 1, 1942, 5,300 single-family houses had been built, 1,400 were under construction, and 37 staff-houses for single men had been built, accommodating 3,700. Both types have been erected across Canada from Halifax to Prince Rupert. The largest scheme, using 900 single units, is in Halifax. The houses are rented and are non-taxable, the Government paying a lump sum to the nearest community for schools, fire protection, etc. Architects supervising construction receive 1 per cent. as standard fee. In addition, two Merchant Marine manning pools had been built for two to three hundred men each.

The British Commonwealth Air Training Plan has also caused a great deal of construction throughout the country. Ninety air-training schools, each equipped with hangars, barracks, machine shop, lecture rooms, depots and garages have been built. These are all basically similar in type. The airfields attached to them are large and unhampered, many being set out on hitherto uninhabited country, and bombing practice is carried out on nearby lakes.

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*Although designed for the Ontario Government as a mental hospital, this huge building scheme at St. Thomas's (illustrated in model form) was taken over on completion as a technical training school for air crews under the British Commonwealth Air Training Plan. Office of W. L. Somerville, architects. Besides this and several others adapted from existing buildings, ninety air-training schools have been specially constructed.*

[continued from page xxxvi]

Besides the training schools equipped with landing grounds, 34 other technical schools exist. Some of these are housed in new buildings designed for other purposes. The most notable of these is the new mental hospital at St. Thomas's, Ontario, illustrated on page xxxvi. Nearly all the new buildings of the Air Training Scheme are of timber construction. Naval and army barracks have sprung up in all the important centres. The new army barracks are mostly of wood, but the future policy of Canada can be seen in the fact that many of the naval barracks are of brick and are permanent. One exceptionally large naval training school is in course of construction at Halifax. The Navy at the outbreak of war consisted of thirteen ships; by March, 1942, it planned to have 400. The consequent building expansion, though not comparable with that of the army, is great.

Temporary administrative buildings in Ottawa and other administrative centres are, as with all countries at war, very numerous. Rents are pegged in crowded districts. Temporary military hospitals and some permanent ones have also been erected, besides coastal defences, shipping facilities and radio stations, of a permanent character. Many temporary storage buildings to hold the mounting wheat surplus have also been built. The ability to use Canada's vast timber resources for war-time construction has been a godsend, not only to her but to other parts of the world. These resources and those of the mills are amply adequate and speedy. Many a green and bosky tree has found itself a hangar truss within a few weeks of felling. The disadvantages of unseasoned lumber have been largely overcome in the kilns, by the use of simple trusses, and especially by the use of ring connectors.

The fact that goods made of raw materials in short supply owing to war conditions are advertised in THE ARCHITECTURAL REVIEW should not be taken as an indication that they are necessarily available for export.

## ARCHITECTURAL SCULPTURE

*An extraordinarily persistent neo-Greek tradition in architecture and the bourgeois demand for a high finish on art and architecture have largely sterilized architectural sculpture. This elegant monument to the King and Queen's visit in 1939, at a highway entrance to Toronto, designed by the architectural office of W. L. Somerville, has at its base a freely carved and forceful lion by Miss Frances Loring, sculptor.*

## MURAL PAINTING

*Charles Comfort, the author of these murals, is a painter, a commercial artist and a teacher, but his major interest is in mural painting, for which there have been but few opportunities in Canada. These panels are part of a series executed for the Toronto Stock Exchange. Their shape was dictated by the architect. In the reproduction of the right-hand one (which is entitled "Agriculture" and is symbolical of the flow of wheat, fruit and meat from the farm to the consumer) the white area just below the centre of the panel is much too light in relation to the surrounding tones.*

*Industrial design in Canada at its best. Top, unusually well cast and finished cooking utensils in aluminium, a material with an important place in Canadian industry. By Sully Aluminium, Toronto. Bottom, an efficiently designed electric stove, which has been successfully exported. By Moffat's (photograph supplied by the Robert Simpson Co., Ltd.).*

## INDUSTRIAL DESIGN