

# CANADA REPORTS

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Architecture in Canada

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**A**rchitecture is perhaps the ultimate blend of art and technology. It springs from an idea in the creative imagination and culminates in an artistic expression of culture, context and time. Yet the translation of inspiration into physical structures depends upon technical expertise and the considerations of climate, cost and space.

The challenge of combining functional practicality with beauty has been successfully met by Canadian architects working with state-of-the-art technology. Inside attractive climate-controlled malls the weather is perpetually perfect. And buildings in Canada's far North withstand extremes of wind and temperature while retaining simple but aesthetically pleasing lines.

Architecture is also a lasting record of a nation's history and culture. In the Canadian case, it forms a pleasing collage of complementary contrasts.

**Muttart Conservatory: a greenhouse formed by a quartet of transparent technological tepees.**

The cultures that have shaped Canada are reflected in buildings across the nation. The University of British Columbia's Museum of Anthropology creates echoes of the West Coast Indians' distinctive architecture. On the east coast, historic buildings recall Canada's past as a British colony, while the manor houses of French settlers dot the Quebec countryside. And today, a mosaic of mosques, temples and churches reflects the country's modern multicultural society.

Both a sense of time and of timelessness is conveyed in Canadian architecture. Carefully preserved heritage buildings recall the nation's rural origins, but architects must design for the urban society which Canada is today, creating modern structures that blend with the surrounding neighborhood. In a daring concept, the Mississauga City Hall blends the past and present by incorporating local nineteenth century forms into its post-modern design, perhaps marking a new trend in architectural design.

Canadian architecture is above all a reflection of the diversity of the land and its people. Canada is a vast nation composed of distinct geographic regions stretching from the sea-sprayed Atlantic provinces, rugged Quebec and Ontario farmlands, through the endless expanse of the prairies and the frozen northern tundra, to the soaring west coast mountains. Each region inspires a distinctive architecture expressive of the area's ethnic heritage, geographic characteristics and climate.

On the most personal level, Canadian architecture provides an intimate glance into the lives of Canadians — their attitudes, lifestyles and aspirations. Through these articles we open the doors of the Canadian experience and invite you to enter.

## Canada

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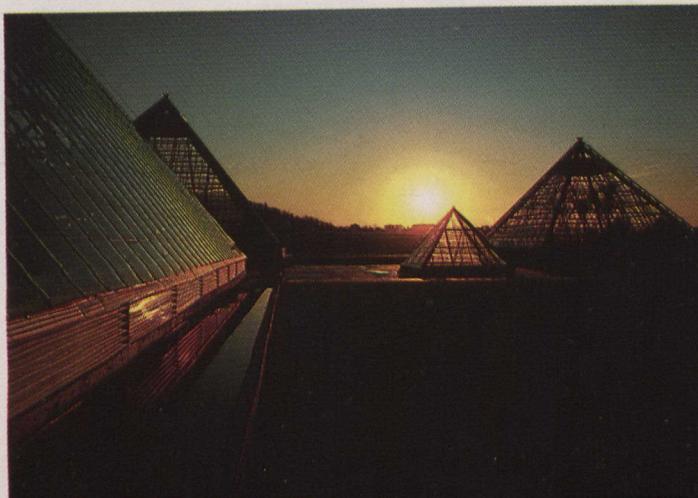
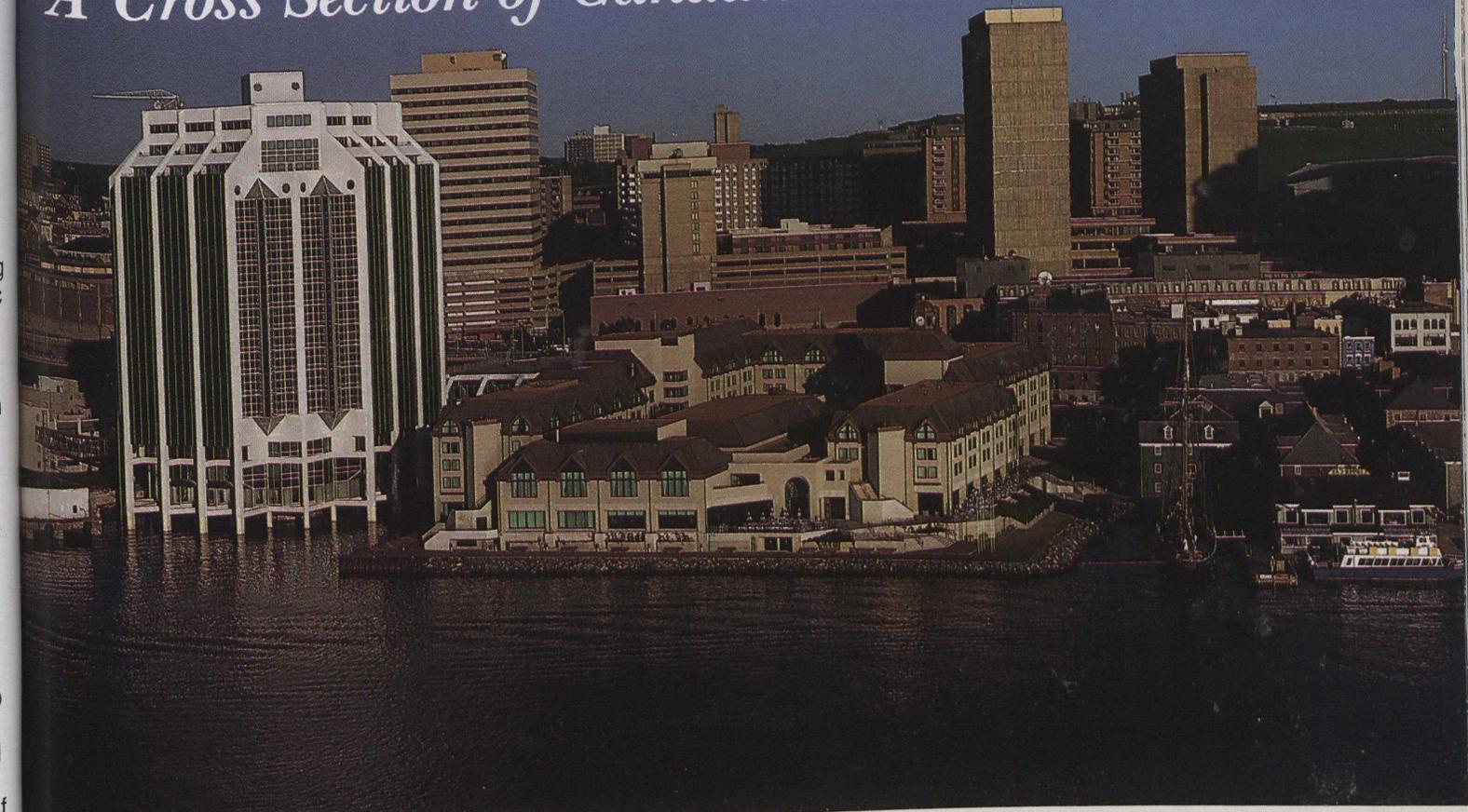


Photo used for front cover:  
National Gallery of Canada, by Malak.

# B uilding in Context: *A Cross Section of Canadian Architecture*



The Halifax Sheraton Hotel masterfully integrates the old and the new.

The casual observer of global geography might wonder why Canada is only one nation. Three oceans border the longest coastline on earth. Radical changes in topography — from prairie to mountain to Arctic desert — constitute formidable internal boundaries. Cultural groups with widely varied origins and attitudes inhabit identifiable regions where dramatic differences in climate demand equally distinct approaches to work and play. And yet the nation is one.

A trip across Canada by train takes four days and five nights. Those who choose to see the country by car will drive 8 000 km from Newfoundland to British Columbia along the Trans-Canada Highway. A "quick" trip from coast to coast will take a full week. On such an adventure, even if the traveller could avoid meeting a single local inhabitant, the character and diversity of the Canadian population could be assessed with some accuracy simply by observing the architectural differences from one part of the country to another.

No surprise. A fishing village functions one way, a cattle town another. Around a seaside town are houses of similar design — perhaps

"boxy" to nestle in the lee of the rocks, with small windows to protect against prevailing winds. Prairie houses are generally longer and lower, taking advantage of the unrestricted expanse of flat land. Mountain chalets on the west coast make use of the available high timber and feature soaring ceilings and gigantic picture windows to bring the beauty of the mountains indoors. Northern structures huddle low to the ground in protective circles.

As one moves from location to location, Canadian architecture offers many clues about the lifestyles, attitudes, skills and backgrounds of the people who build and use the various structures.

## The Regions . . .

Canadians often see themselves in distinct geographic regions — Atlantic Canada, comprising the four easternmost provinces, Newfoundland, New Brunswick, Nova Scotia and Prince Edward Island; Central Canada, consisting of Ontario and Quebec, and the Prairie provinces of Manitoba, Saskatchewan and Alberta; the west coast province of British Columbia; and the North, forming a broad band across the top of the country.

These handy geographic divisions, however, are not the only appropriate perspective. Topographical regions distinguish people of the mountains from those of the plains;

political regions carve the nation into distinct governmental jurisdictions; commercial and economic regions separate urban from rural communities; linguistic regions are defined by the primary tongue, English or French; and climatic regions unite groups with common meteorological conditions.

### See How They Build . . .

Regionalism, for architects, is evident when building designs rely heavily on their location and context for inspiration. Architecture deals with space, light, shape, function, composition and scale and, when a community has a specific outlook on any of these, it is often revealed in the shape, colour and weight of its buildings.

The closer one looks, right down to individual neighbourhoods, the more architectural similarities one will find in neighbouring structures — especially older buildings. Thus the old stores at one end of Lunenburg, Nova Scotia, resemble stores at the other end, but none like them can be found elsewhere in Canada.

Originally, Canadian building design grew from established Western European concepts — both French and English. When European emigration was at its peak in the nineteenth century, colonial architecture showed little interest in local cultural or even climatic conditions. International attitudes of the day held that the great benefit of colonial enterprise was the exportation of the greater culture to the lesser. Local customs were commonly considered crude or, at best, quaint and unworthy of adoption. Canadian buildings of that time were intended to openly reflect the heritage and homelands of those who built them.

Those buildings can still be seen today, particularly in Atlantic Canada where colonial development first occurred. British buildings in the sober Georgian style stand in historic clumps, reminding visitors to Halifax, Nova Scotia, and to Saint John and Fredericton, New Brunswick, of the solidity and confidence of the empire that erected them. Since then, architects and urban planners have been challenged to create new structures which neither eclipse the heavy Georgian buildings nor suffer in comparison.

A celebrated example of an inspired response to this challenge can be found on the Atlantic coast in Halifax. One of the British Empire's most strategically important seaports for 150 years, Halifax bears the architectural stamp of its English heritage. The downtown area along the waterfront has been painstakingly restored to the clean lines of the 1850s, an achievement praised by both Canadian heritage enthusiasts and appreciative tourists. When a new hotel in the Sheraton chain opened in 1987, its design was skilfully crafted to complement the restoration.

Another new hotel — the Delta Barrington — was erected incorporating the entire façade of one of Halifax's major nineteenth-century streets. Every stone of the original streetfront remains, maintaining the stylistic influences of a noble history, behind which an elegant hotel and shopping concourse offer modern amenities.

On the same coast, historic pride and cultural sensitivity are seen in even the most modest of structures. Throughout Newfoundland and Nova Scotia, square wood-frame houses known affectionately as "saltboxes"

are the common feature of fishing villages. Originally a function of a simple economy, the pastel-painted saltbox house has come to symbolize an idyll: the simplicity of those who mark their time by the turn of the tide.

### The House Tells the Tale . . .

Widespread acceptance and repetition of local housing forms can be found right across the country and can teach the traveller much about the people who inhabit them.

In Quebec, early French settlers responded to the demands of harsh winters by raising the ground storeys of their houses to accommodate large snowdrifts, installing multiple chimneys for adequate heating, and extending verandahs from sharply sloping roofs to keep moisture away from walls. These manor houses are found throughout the province, tightly insulated against the elements for the winter,

Square wood-frame houses known as "saltboxes" are common in Canada's east coast fishing villages.

© Melchior DiGiacomo/The Image Bank



springing to life in the summer with colourful flower boxes under each front window. Behind them, private gardens of tangled flowering bushes offer unstructured natural beauty.

In Ontario, the square, sturdy, stone farmhouses of the 1860s and 1870s have become a ubiquitous symbol to central Canadians of the secure independence of the family farm. Throughout this fertile agricultural area they stand to this day on farm after farm with little variation. Reflecting this solidity, contemporary dwellings in Ontario make extensive use of brick — so much so that there is a standing invitation to bricklayers from other parts of the country to bring their skills inland. Whole suburbs of brick houses in shades of red, pink and gray have sprung up around Ontario cities with a uniformity of design found nowhere else in Canada.

On the prairie, the wooden ranch bungalow with its weathered barnboard and spacious porch stands adjacent to the towering elevators of harvested wheat. Cluttered along the railway line in one of the most productive farmlands on earth, these houses exhibit the characteristic informality of prairie life.

In the province of British Columbia on the west coast, where lofty forests of redwood rise from the Rocky Mountains, northwest native people have traditionally built their large family houses, decorating them with distinctive monumental carvings. Settlement by people from other parts of Canada has been relatively recent here, and contemporary appreciation of both local culture and beauty can be readily seen in

Photo: William P. McElligott Photography Ltd.

A 12-storey-high atrium encloses the original Bank of Canada and its surrounding garden.



the expansive houses of natural wood. Set on mountain slopes or on cliffs overlooking the Pacific Ocean, the typical modern west coast house uses an open, casual design to allow uninterrupted views of the spectacular natural environment.

At the western limit of the country, on Vancouver Island itself, an affectionate affiliation with the gentle, British, country way of life can be read from the profusion of Tudor-style residences. High peaked roofs perch upon bleached white stucco walls and decorative timber ornaments stand out in high relief.

### Let There be Light . . .

Canadians are well aware of the change of seasons. While some regions are blistering hot for the summer months, most enjoy the crisp chill of winter when it hits. The environmental response to this reality has been widespread use of the skylight in private houses and of the atrium — a large glass roof or skylights — in public places.

Designed with great regard for the spatial qualities of the structure and the environmental needs of those using the space, these atria have become an identifiable symbol of present-day Canadian architecture right across every regional boundary.

Responding also to climatic imperatives is the indoor street, now a hallmark of Canadian architecture. On even the most blustery of winter days in the charming city of Quebec, for instance, one may stroll narrow streets in shirt sleeves, perusing the goods of local merchants as they appear in characteristically narrow store fronts. This is not, however, the old Quebec of 200 years ago but the indoor world of shopping centres and malls which have appeared at the outer

edges of the original city. In Montreal, this kind of indoor stroll can be enjoyed in a network of underground shopping malls and major buildings, all linked by subway.

Similarly, the Eaton Centre in Toronto and the West Edmonton Mall in Edmonton, Alberta, with their vaulted glass ceilings and huge interior gardens (and, in one case, a lake) do not necessarily reflect the character of their respective regions but employ climatic control as a guiding principle in their design.

Modern west coast homes typically employ an open casual design to allow views of the natural environment.

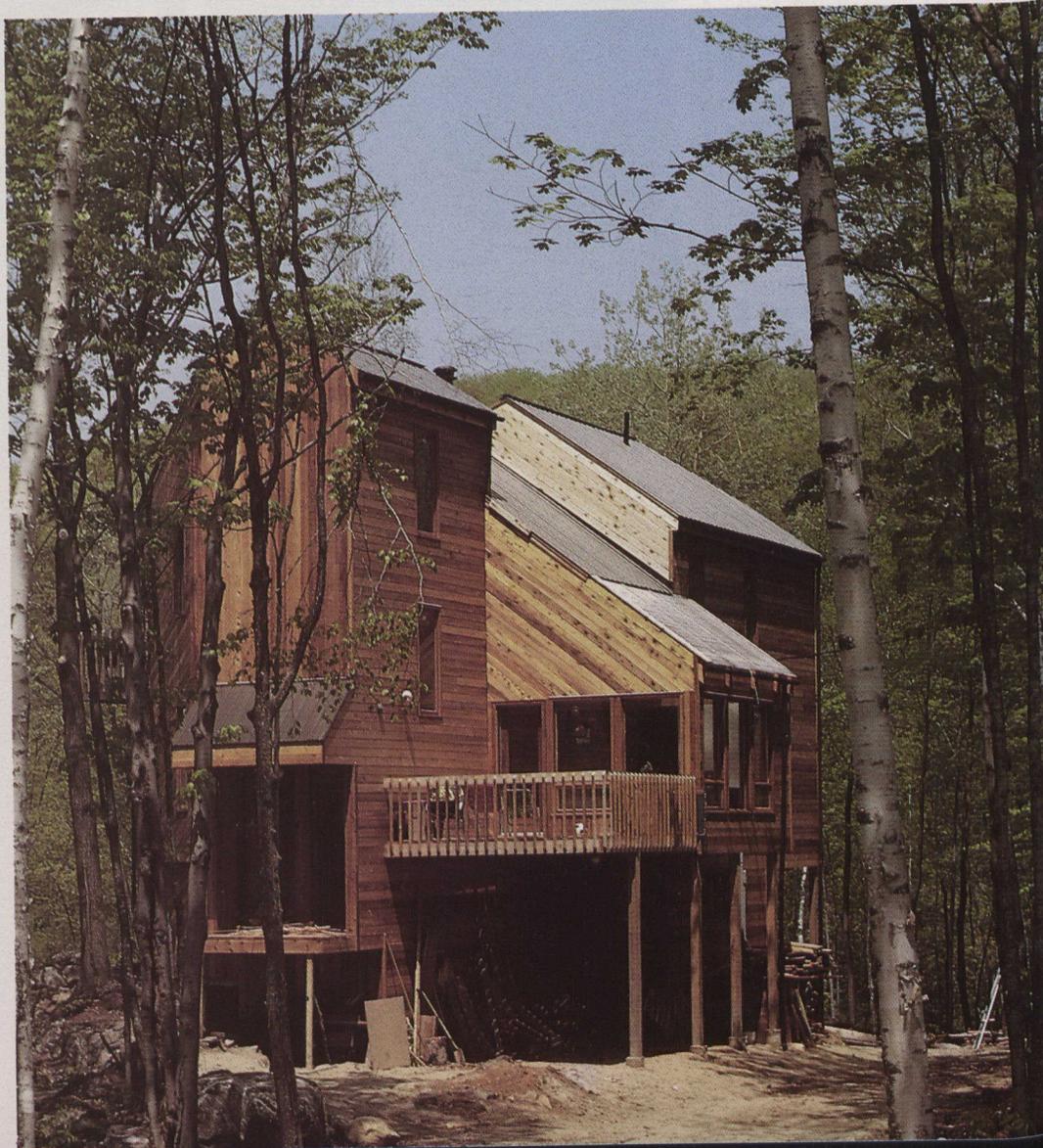
### Into the Future . . .

Canadians have no homogenized architecture any more than they have a homogenized literature or folk music. This is no melting pot. But there are definable elements in the architectural development, past and present, that articulate the distinctly Canadian experience. Because of the size of the country, much of that experience has been and will always be linked to regional realities.

As Canada moves forward to the future, trends will continue to attach great importance to energy efficiency. Experts also predict that respect for heritage buildings will stimulate a revival of older architectural traditions, including the re-establishment

of the street as a place of community definition, the erection of buildings of moderate height, continuing respect for regional identity, and the promotion of friendliness and accessibility in Canadian cities.

While a strong national identity has bridged once-distinct geographic and cultural lines, anyone who travels across Canada will immediately spot happy peculiarities of architectural design that distinguish one sector of the Canadian population from another. For within each region of this country there are and will continue to be irrepressible expressions of regional character, ethnic heritage, geographic uniqueness, commercial endeavour, community spirit and natural beauty.



# Canada's Pièces de résistance

In architectural offices all across Canada, talk is of "building in context." As never before, Canadian architects are becoming increasingly sensitive to how their buildings "fit" into neighbourhoods. It's not just using the same brick or matching window and door placements: designing a building in context means considering the scale and measure of surrounding structures, taking into account local building materials, popular architectural forms in the area, and the history of the neighbourhood.

Concern for context has given shape to many innovative building projects across Canada in the past few decades. In so vast a country, choosing just a few representative examples is no mean feat. The buildings selected here are all outstanding in some way — whether for artistic beauty or exceptional technical advances. More importantly, these buildings exhibit thoughtful approaches to their "contexts."

With an international client such as the Sheraton Hotel chain, the designers of the Halifax Sheraton in Nova Scotia could easily have fallen victim to the "luxury hotel syndrome" and produced an anonymous corporate high-rise tower. Instead, local architectural firm Lydon Lynch chose to defer to the waterfront site and to the neighbourhood — past and present — in its design. The neighbours to the south are restored eighteenth- and nineteenth-century wharf buildings that have been renovated into shops,

restaurants and an art college. The arms of the U-shaped hotel extend into the harbour, much as the fingers of the wharves stretch into the water. Unlike the polished tower to the north, the Sheraton takes its cue from the low-rise wharves and rises to a maximum height of seven storeys.

The building materials too were selected with the site's history in mind. The exterior is made of granite aggregate blocks designed in consultation with a local manufacturer. The colour, texture, density and random pattern of the blocks relate to the cut stone of the wharf and to previous buildings on this site.

A university situated in the heart of a modern urban centre must strike a balance between a cohesive campus on the one hand, and a structure integrated with the city that surrounds it on the other.

Before the construction of a single campus, the University of Quebec at Montreal (UQAM) was scattered throughout the downtown area. The site of the new university, located in the eastern sector of Montreal's commercial core, covers two city blocks. The site is historic: Montreal's first cathedral and episcopal palace burned down here in 1852. The chapel of Notre-Dame de Lourdes and the steeples and south transept of St. Jacques remained and are now integrated with the new campus and surrounding structures.

Architectural firm Dimitri Dimakopoulos and Partners laboured to ensure that the



surrounding urban context was respected. Building heights were kept down along St. Denis Street in uniformity with other structures, but stepped up along Berri Street where buildings are higher. Both the steeple and south transept of St. Jacques Church are preserved. The silvered Byzantine dome of Notre-Dame Chapel, not part of the campus itself, is integrated into an adjoining complex of terraced parks.

UQAM's construction is of reinforced concrete clad in beige brick. The university's façades are articulated to integrate with the domestic character of its neighbours and broken into bays and balconies to echo the local idiom. To match the commercial street context, the scale along Berri Street is more urban. The stone spire of St. Jacques and the rough bulging ashlar of Notre-Dame provide nostalgic contrast.

**Toronto's Eaton Centre: successful shopping complex, tourist attraction and meeting place.**

But what happens when there is no existing "context," no immediate neighbourhood for an architect to respond to and respect? As so often is the case, urban growth can consume hitherto untouched farm fields in a matter of months. This was the experience of Jones and Kirkland, a young Toronto architectural firm, which won a national competition five years ago for its design of a civic centre for Mississauga, an expanding city on the outskirts of Toronto. The selected site for the new city hall was a rather desolate field with only a sprawling shopping mall nearby.

The architects delved into the area's history for civic and agrarian traditions on which to base their design. They

# A Treasure of Stone and Light

At the confluence of the Ottawa River and the Rideau Canal, commanding spectacular views of the Gatineau Hills and the cities of Ottawa and Hull, the permanent home of the National Gallery of Canada rises like a giant candelabrum in the heart of the community. Designed by world-renowned Canadian architect Moshe Safdie, the new National Gallery with its glass-covered colonnade and its geometrical, neo-gothic tower, had become a landmark even before it officially opened on May 21.

The new Gallery — under construction for four and one-half years — offers a symphony of spatial experiences atypical of contemporary architecture. The structure is also a marked departure from the ho-hum interiors of the converted office block that housed the gallery's collections for the

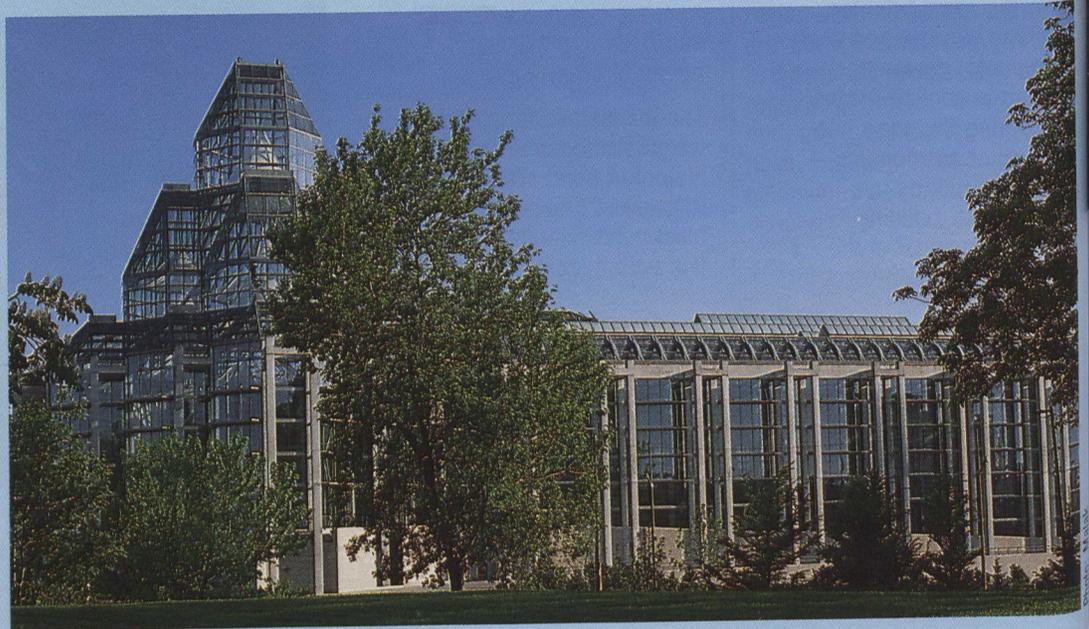
Inspiring the "range of emotions one experiences when listening to a piece of music."

previous 28 years. Says Safdie: "I hope that people walking through the building will feel the complexity and range of emotions one experiences when listening to a piece of music."

Safdie conceived the building as a series of smaller pavilions, each with a distinct character and spatial defini-

tion, so that visitors could orient themselves and contemplate works of art in comfort. The public spaces, with their exuberant, celebratory architecture, are like streets and piazzas leading to the galleries. By contrast, in the more serene architecture of the galleries, the works of art become the focus of the visitor's attention.

Representing the best in contemporary Canadian architecture and building technology, the new National Gallery celebrates its geographic surroundings, respects its architectural neighbours and creates a setting worthy of the works of art it houses.



came up with a scheme that incorporated a clock tower and peaked and pyramidal copper roofs, to allude to Ontario's nineteenth-century public buildings, as well as typical farmyard forms, to refer to the region's long farming history.

Inside, however, the building is undoubtedly twentieth century — and heading for the twenty-first. Its fitness centre, daycare centre and recreational areas reflect the demands of today's Canadian employees, and its amphitheatre, art gallery and civic square re-establish the city hall as the focus for community activity it once was.

Mississauga City Hall has been hailed as "landmark architecture." It is without

doubt Canada's foremost example of a post-modern building that enjoys widespread popularity with architects the world over.

Another architectural landmark in Canada — one that has helped put Toronto on the international map — is the Toronto Eaton Centre. Popular from virtually the day it opened in 1979, the shopping complex is visited by about 1.5 million weekly — tourists and Torontonians alike. The architecture of the centre has played no small part in its astounding success, not only as a commercial venture but also as a major tourist attraction and meeting place.

Unlike the open landscape surrounding Mississauga City Hall and the serene water-

front location of the Halifax Sheraton, the site for this shopping complex is on frenetic Yonge Street, reputed to be the longest street in the world and certainly one of Canada's busiest. Still, as in the other designs, the common objective of building in context — integrating the project into the fabric of the neighbourhood — is clearly evident.

The Zeidler Partnership of Toronto started by designing a three-storey, glass-covered *galleria* that stretches the 270-m length of the centre. Running parallel to Yonge Street on the city's grid pattern, the *galleria* is a street in its own right, albeit indoors. Like many pleasant streets, it has trees, benches, balco-

nies, terraces, bridges, and sidewalk cafés, with a restful garden at one end and a fountain at the other. Pedestrians on Yonge Street often duck into the centre to continue their journey more pleasurably in the climate-controlled indoors, proof positive that the centre is seen as a natural extension of the city.

As the eyes of the world turned to Calgary and the 1988 Olympic Winter Games last February, they saw more than one kind of world-class feat performed. Besides athletic excellence, architectural distinction was also recorded and given form in the Olympic Oval on the campus of the University of Calgary.

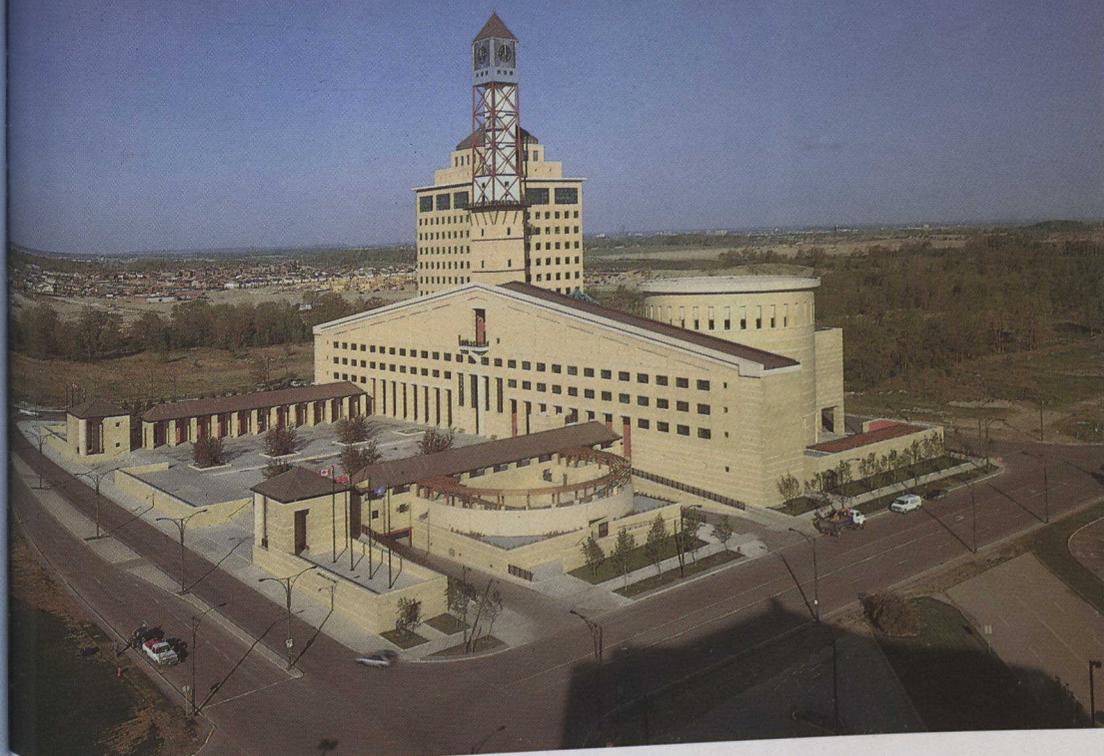


Photo: Robert Burley

In designing the Oval, local architect Graham McCourt enclosed the huge 25 200-m<sup>2</sup> rink without compromising perfect artificial ice conditions. The facility offers three speed-skating tracks, two running tracks, two international-size hockey rinks and a weight training centre during the winter. In summer, the entire space is converted into a fieldhouse with artificial turf for training in various sports. The building is directly linked to the university's sports medicine computer to allow monitoring of the athletes' vital signs during training.

The Oval is one of the largest buildings in the world to exploit the use of natural light. A reflective light shelf below the ring of windows that encircles the structure was developed and tested in a "sky lab." This precast concrete shelf increases the amount of daylight into the Oval, greatly reducing the need for artificial light, thereby lowering operating costs. The windows also create the illusion that the rink is outdoors. Even speed-skating traditionalists like the feeling!

Despite its size, the Olympic Oval is no higher than its campus neighbours. It sits beautifully in the landscape, the diamond-shaped facets of its roof seeming to reduce the building to a more human scale.

Canada's North has a unique raw beauty. Its silences are resonant and its landscapes magnificently primitive. Architecture, in this context, faces challenges uniquely physical and spiritual.

Not surprisingly, the extreme climatic conditions of the Arctic require radical architectural techniques. For the Arctic Research Laboratory situated in Igloolik, Northwest Territories — a small island well north of the Arctic Circle — steel and fibreglass prefabrication provides a solution.

The laboratory is a circular, mushroom-shaped building on two levels. The lower level houses entrances, along with storage, service and equipment facilities. The upper level has a sky-lit, central conference and multi-purpose room ringed by cantilevered offices and laboratories.

**Mississauga City Hall: a post-modern design resembling a nineteenth-century Ontario barnyard.**

The ground floor is constructed of insulated concrete sandwich slabs. The first floor is 22-gauge, zinc-coated, sheet-steel decking topped with concrete slabs that are either carpeted or exposed and polished.

Fibreglass-reinforced plastic panels chosen by architects Papineau, Gérin-Lajoie, LeBlanc and Edwards are used as a skin because of

their excellent rigidity in withstanding the most severe windloads, their durability, their ease of erection, and their aesthetic and maintenance properties. The panels are packed with 5 cm of polyurethane foam.

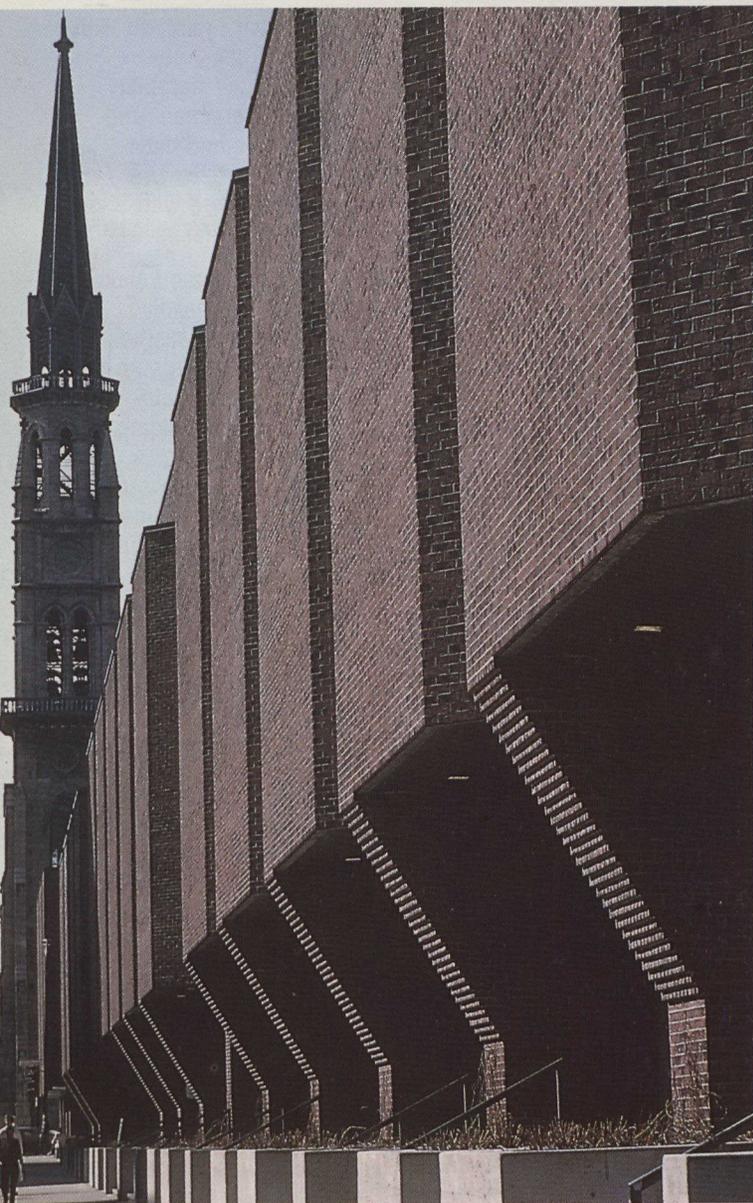
The Arctic Research Laboratory is both technically sophisticated and aesthetically simple. It brings up to date the clear geometry of traditional Arctic building forms, namely the igloo. Its simplicity of shape and detail, which may appear crude in a gentler region, somehow befits the harsh North.

In the opinion of some, the most conspicuously and consciously "Canadian" building is the Museum of Anthropology on the campus of the University of British Columbia in Vancouver, which houses a rich collection of artifacts of West Coast Indian culture. This building is classed as eminent Canadian architecture because of the architect's sensitive handling of the collection and sympathetic treatment of the site.

"On the west coast, there is a great and noble response to the land that has never been equalled," was the message

**Vancouver's Museum of Anthropology recalls the distinctive architecture of West Coast Indians.**





museum curators and world-renowned architect Arthur Erikson wanted to convey to visitors. With an eye to historic Indian culture, the building was set in a treed area and stretched out parallel to the nearby shoreline of a small lake, reflecting the traditional setting of an Indian village. Floor-to-ceiling windows draw in the landscape and offer views of the distant Pacific Ocean and of the setting sun. The structure of the building — a post and beam construction — recalls an important feature of West Coast Indian architecture.

**Building in context:** St. Jacques' spire at the heart of the University of Quebec at Montreal.

One might ask, what is unique about Canadian architecture? What makes it Canadian? It is simply this: building in context is the nub of current architectural debate around the world; building in Canadian context is what makes the buildings uniquely Canadian.

Photo: Canadian Centre for Architecture, Montreal

## *The Canadian Centre for Architecture: A Cultural Resource for the World*

Early in 1989, the Canadian Centre for Architecture (CCA) in Montreal will open its doors to 100 permanent staff and up to 10 scholars. The public will be welcome to walk in the sculpture park that backs the centre, visit its exhibitions, and purchase books on architecture in the bookstore. They will also learn from the centre's home itself: the painstakingly restored Shaughnessy House and the new \$37-million building that wraps around the historic home.

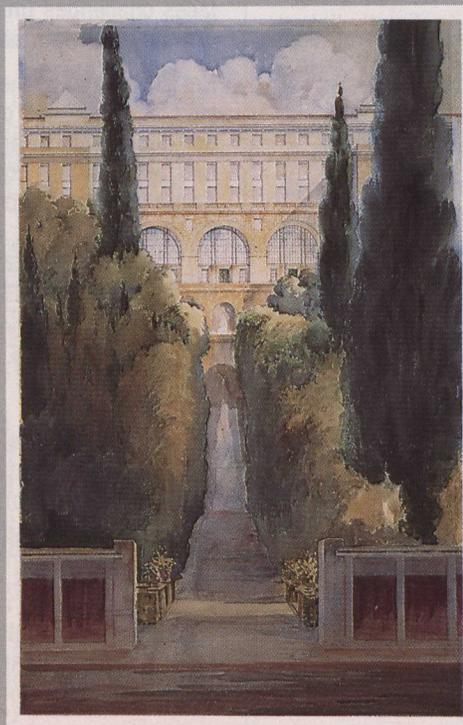
The centre's mission is to research, learn, preserve and expand the knowledge of architecture. Architects will come to Montreal to examine a \$50-million collection of 120 000 books, photographs, 45 000 photos and daguerreotypes, 25 000 drawings and prints, and an archive of architects' materials.

Until the inception of the centre, many of these important books and unique papers were not available to scholars

and architects. Now, they will be preserved in the climate-controlled, below-ground levels of the centre, protected by the full range of curatorial techniques used in museums and art galleries.

Architects deal simultaneously with the subtleties of aesthetics, the practicalities of construction, and the management of commissions. They produce buildings that are among the most imperishable artifacts of civilization. The public uses, lives in and looks at buildings; architects, however, need to study their final structure and also the workings of the minds that conceived and realized them. The Canadian Centre for Architecture offers scholars and architects a rich lode of this essential information.

The CCA's collection includes Ernest Cormier's watercolour of the Université de Montréal.



# Homing In on Housing

**T**he time-worn image of Canada as an endless expanse of mountain and prairie is belied by the facts. To be sure, the wilderness is still there, but most Canadians live in a narrow band of populous modern cities stretching across the country along the southern boundary. The cities are hubs of commerce and culture and each year they get bigger. The population of metropolitan Toronto, for instance (now at 3.5 million), grows at a rate of 2 per cent per year. One of its suburbs doubled in size over the past five years, and the growth of many other suburbs is similar.

As cities grow, accommodating families with regard to both comfort and disposable income presents a major challenge. Architects openly declare that modern housing is their most difficult design problem and continually work to conceive housing solutions which at one stroke can offer privacy, space, convenience, energy efficiency, beauty and economy — even smack in the middle of town.

This would not be difficult were their clients more open to high-density forms of housing such as apartments, shared houses, and co-operative dwellings, but Canadians have come to view the single-family dwelling as the norm.

Erecting separate houses which marry space, privacy and economy in the downtown core is seldom possible, but by working together, urban planners, developers and architects have arrived at some ingenious compromises.



The most renowned adventure in this regard was Habitat, an architectural experiment at Montreal's 1967 World Fair. Created by Canadian architect Moshe Safdie, the structure attempted a radical departure from standard high-density housing solutions. With an unusual internal design rejecting straight corridors and common entrances, Habitat featured private terraces and gardens for every unit. While it proved enormously popular with the original tenants, it unfortunately also proved enormously expensive to build and has never been repeated.

Another celebrated example is the Pacific Heights Housing Co-operative in Vancouver. In an area of extreme density (over 245 units per hectare),

the co-op has used city-owned land on which to erect an unusual structure to reclaim a once-noisy downtown street for family dwelling. The central features of the co-op's project are the reconstructed façades of six Victorian houses and the block of units designed onto them. The restored houses, with their varied angles and jutting verandah roofs, have reduced street noise by 50 per cent, and the project has confirmed that families can be accommodated at high densities in an agreeable environment.

On the other side of the country, in St. John's, Newfoundland, architects have achieved success incorporating inexpensive publicly

**The Forest Road Infill Project provides dignified and comfortable non-profit housing in St. John's, Newfoundland.**

sponsored housing into existing neighbourhoods by mirroring the style and colour of the traditional Newfoundland house. The Forest Road Infill Project is a 26-unit non-profit string of wooden houses down a steep grade, each unit painted in a different bright colour, each offering dignified and comfortable housing to those who could not otherwise afford it. With the appearance of a typical Newfoundland street, the project has scored a victory for its regional sensitivity and practical benefit to the community.



© Jake Rajs/The Image Bank

An architectural experiment in high-density housing, Habitat features private terraces and gardens for every unit.

Developers agree that the acid test for new habitats is whether they feel like separate houses; for if they do, they will be quickly occupied. In response to this market reality, many designers have turned their attention to creating the illusion of privacy where space is at a premium. The townhouse is a fine example. Architects of townhouses, like those of micro-circuits, have learned to exploit every opportunity of space in a design both functional and aesthetically pleasing.

In Kanata, Ontario, a rapidly expanding satellite city near Ottawa, an increasing demand for housing has led to a flurry of townhouse construction. Privacy and ease of maintenance are major design features.

Developers of the Pickford Court project have met the Canadian desire for seclusion by erecting buildings of pin-wheel design which feature entrances on all four sides of each building. All 112 two-storey units have separate entrances, access to both a children's recreation area and a swimming pool, and a host of conveniences from automatic dishwashers to *en suite* bathrooms. Construction costs were greater than those of traditional row houses but, even so, the units rent for about \$150 a month less than their downtown counterparts.

For those who can afford it — and 64 out of 100 Canadians can — the single detached house is still the most desirable habitat. While prices vary widely from city to city, a home buyer can typically afford a 150 m<sup>2</sup>

three-bedroom bungalow or split-level house with an informal living room (probably with fireplace), a dining room, two bathrooms, a laundry nook, and a functional kitchen with an eating area.

Even when they are built on small lots, the popularity of these single detached houses has put a strain on land near city centres. The result has been the rapid rise of suburban communities — huge villages of houses in proximity to major centres — often large and distinct enough to become towns or even cities in their own right.

With an objective of self-reliance and individual identity, these communities incorporate schools, hospitals, fire departments, recreational facilities and parks, and are supported by secondary industries of shopping complexes and services which themselves employ large numbers of community inhabitants. Each community is sufficiently self-contained, distinct, and small to engender an authentic sense of community identity. In cities of ever-increasing size, this is a valuable asset.

The Pacific Heights Housing Co-operative reclaimed a downtown street for family dwelling.

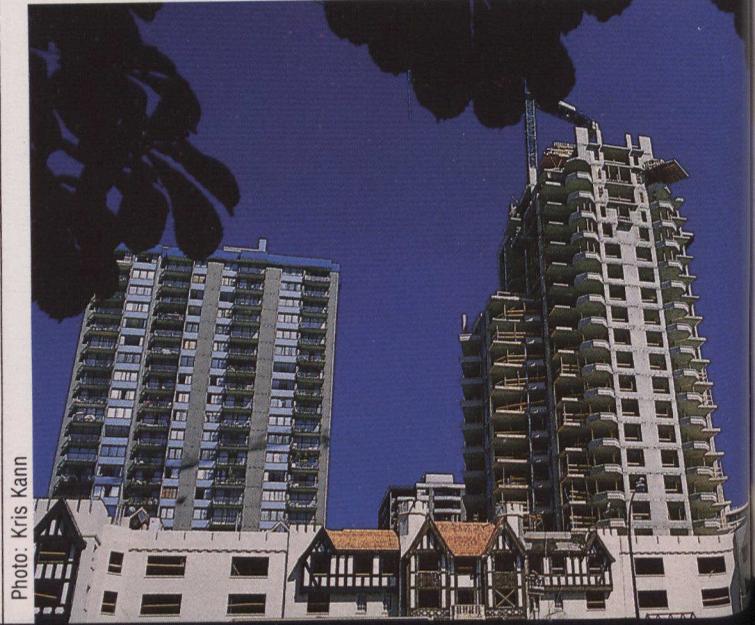


Photo: Kris Kann

# Books for a Growing Audience

Canadian children's books have come of age, both at home and abroad. Still relatively small in terms of revenue and size, the "Kid Lit" picture book publishing industry is booming. Compared to the situation that existed a dozen years ago, remarkable progress has been made.

What helped change events was the establishment of the Canadian Children's Book Centre in 1976 — a national non-profit organization designed to promote the reading and writing of indigenous children's literature. Kathy Lowinger, executive director of the Book Centre, says that in 1976 in Canada "there were a mere 38 English-language children's books published." Few publishers appeared to be interested in the market. Happily, this has changed and now more than 300 authors are published — both in English and French — with many selling in the 50 or more bookstores specializing in kids' titles that have sprung up across Canada in the past decade.

As for the quality of these publications, Hamish Cameron — associate editor of *Quill & Quire*, the monthly tabloid of the Canadian book trade — says "the best of what is being published here is as good as anything done elsewhere in the world." Indeed, Canadian children's book publishers are now receiving more international recognition than ever. At the 1987 Bologna Children's Book Fair, the largest annual event of its kind, the 29 Canadian publishing houses represented reaped over \$1 million

through co-publishing and translation rights with foreign publishers.

Many factors are responsible for this boom. But undoubtedly, the single most important one is the emergence of a number of small, independent publishers, including Tundra, Annick Press, Groundwood Books and Kids Can Press. These houses have developed increasingly sophisticated skills both in marketing and in the arrangement of cost-sharing deals with companies abroad.

Hussey of Toronto's Kids Can Press: "Like almost everyone involved in children's literature in the 1970s, we had to learn quickly. We knew that to survive we had to change public attitudes and come out with quality products that were competitively priced." (Kids Can Press sales have gone from a meagre \$20 000 in 1978 to over \$1 million in 1987.)

Creating top-notch books was a task that necessitated the emergence not only of new children's writers but also of

and illustrators across Canada who devote all or part of their time to bringing children's books alive and who are establishing their reputations not only at home but around the world.

## Robert Munsch

Robert Munsch, for one, didn't set out to become Canada's number one selling author of children's books. It just happened that way.

After graduating from high school in Pittsburgh, Pennsylvania, he entered a Jesuit



Canadian children's books have come of age.

Owing to the success of the smaller publishers, many of the large, well-established Canadian firms have placed a much heavier emphasis on their own children's book divisions. Says Valerie

illustrators; children's books, after all, have to be visually appealing to the critical eye of a child. Bright attractive colours and interesting story lines that capture and hold the young reader's attention are essential.

In both fields the task has been admirably met. Today there are scores of writers

order and studied to become a priest and an anthropological missionary. On weekends he worked in an orphanage where he fell in love with "have-not" kids. After seven years of study, Munsch came to the realization that the priesthood was not for him — his weekend work was far more enjoyable.

Munsch decided that he would spend his life working with children. He studied early childhood education and took a job in a non-profit day-care centre, where he began telling stories. It was at this centre that he met his wife Ann. Together they came to Canada to work in the Department of Family Studies at the University of Guelph, 80 km south of Toronto. When the director of the department heard Munsch telling his stories to children, he encouraged him to have them published. Munsch sent off some manuscripts and a month later was signed by Annick Press of Toronto.

Today, more than 1.5 million of Munsch's books have been sold and interest in the author is increasing all the time. (Some 425 000 books sold in the first six months of 1988 alone.) His stories have been translated into every major language and are available on tapes and records. Since his debut in 1979 with *The Dark*, Munsch has published two and sometimes three books each year. They are consistently winners of the "Our Choice" award from the Canadian Children's Book Centre and, for one of his albums, *Murmel, Murmel*, Munsch won the 1985 Juno Award for children's Album of the Year.

One of his stories, *The Paperbag Princess* (more than 500 000 copies sold), has achieved such cult status that other writers have referred to it in their books. Munsch's stories are primarily about contemporary urban, domestic life. The words of the stories are simple and rhythmic and the stories themselves so popular because they deal with familiar, recognizable childhood experiences.

In one amusing Munsch story, *Thomas' Snowsuit*, a school teacher tries to put a young boy, Thomas, into his snowsuit. Instead, the teacher herself ends up wear-



**Roch Carrier's *The Hockey Sweater*: a classic that continues to delight young and old alike.**

ing the snowsuit, leaving Thomas in the teacher's dress. Then, when the principal arrives on the scene and tries to get the snowsuit on Thomas, the principal ends up in the teacher's dress and the teacher in the principal's suit, with his pipe in her mouth! Thomas, of course, remains without his snowsuit.

Full of contemporary references, from computers and chewing gum to snowsuits and cheeseburgers, Munsch's books also have a folk-tale resilience and robustness that make them contemporary classics. And like folklore, the stories have a life of their own outside the picture-book format. Munsch, you see, gives live performances for children where he engagingly tells his stories aloud. Two recordings by Munsch, *Munsch: Favourite Stories* and *Murmel, Murmel*,

*Munsch: More Outrageous Stories*, show that the written versions are really like scripts or musical scores.

Today, Robert Munsch is so popular that his shows are sold out months in advance. He is considered to have the potential to eclipse all others in his field.

#### **William Kurelek**

Eleven years after his death, William Kurelek's reputation as a writer continues to grow and his children's books are now more popular than ever. This is due in large part to *A Prairie Boy's Winter* (1973) and *A Prairie Boy's Summer* (1975) — two classics that continue to win new audiences both in Canada and around the world. To date, more than 400 000 copies of Kurelek's books have been sold worldwide and rights have been sold to Norway, Sweden, Finland, Denmark, Greenland, West Germany, the United States and Great Britain.

Since its first publication in 1973, *A Prairie Boy's Winter* has won more awards than any other Canadian book. It was the first Canadian book to be chosen "Best Illustrated Book of the Year" by the New York Times and the first to be featured in Graphis' prestigious selection of the best illustrated children's books of the preceding four years.

*A Prairie Boy's Winter* and *A Prairie Boy's Summer* are reflections upon Kurelek's childhood years. *Lumberjack* (1974) recounts, on 26 beautiful canvases, Kurelek's own experience as a lumberjack in the Canadian North. *A Northern Nativity* (1976) is the unique account of a boy, William, who dreams that the Nativity takes place in northern snows and that the Christ Child is born to Inuit.

Kurelek's books for children have won numerous major international awards and



© 1986, Stéphane Poulin/Tundra Books

Stéphane Poulin is delighting children around the world with tales of a young boy and his mischievous cat.

foreign editions have been published in Britain, France, Germany and Holland.

William Kurelek is perhaps best known as one of Canada's most important painters. Influenced by Bosch and Brueghel and by his prairie roots, his Ukrainian heritage and Roman Catholicism, Kurelek's realistic and symbolic paintings record his historic culture and religious vision. Indeed Kurelek's children's books truly come alive with his full-colour paintings.

### Roch Carrier

Roch Carrier is one of French Canada's best-known writers as well as one of its funniest.

His only children's story to date, *The Hockey Sweater*, has become a classic and continues to delight young

and old alike. Since its first publication in 1984, some 35 000 copies have sold. The story and accompanying illustrations by fellow Montrealer Sheldon Cohen have combined to win the Communication-Jeunesse Children's Jury Award, 1984; the American Institute of Graphic Arts Certificate of Excellence, 1985; and the "Our Choice" Children's Book Centre Award, 1985.

Originally published in French, *Le Chandail de Hockey* was made into an animated film by Sheldon Cohen for the National Film Board of Canada. The "short" won the British Academy Award in 1981; the Silver medal in Salerno, Italy; the Ruby Slipper in Los Angeles; the Red Ribbon at the American Film Festival in New York; plus six other international awards.

A second Roch Carrier children's book is due for release this year. Tentatively entitled *The Champion*, it is in Carrier's own words: "dedicated to all the girls and boys because all of them are champions."

### Stéphane Poulin

In the forefront of French Canadian writers/illustrators is Stéphane Poulin. Already very successful at 26, Poulin first distinguished himself two years ago as artist/illustrator of the bilingual ABC picture book set in Montreal — *Ah! Belle Cité! A Beautiful City* (1985). Last year, he unveiled his story-telling talents with *Have You Seen Josephine?*, originally published in French. It is a charming, amusing account of the little boy Daniel and his mischievous cat Josephine. Already translated into English and in its third printing, it tells the story of their games and travels through Montreal's colourful east end.

Poulin's list of achievements is indeed an impressive one, particularly given his young age. He was scarcely out of

art school when he won the top professional award of Communication-Jeunesse in competition with Quebec's leading illustrators for children. In two days in 1986, Poulin's *Ah! Belle Cité!* canvases sold out during a solo exhibition at Montreal's prestigious Galérie d'Art français — an incredible feat for a 24-year-old artist. And in both 1986 and 1987, Poulin won the Canada Council Children's Literature Prize for illustration.

In the fall of 1987, a second Josephine book, *Can You Catch Josephine?*, was published and a third was released in the fall — *Could You Stop Josephine?* Both were in French and English.

### Ann Blades

At the age of 19, Ann Blades left Vancouver with her husband to teach at Mile 18, a small Mennonite community about 115 km north of Vancouver on the Alaska Highway. As the children there had no books about them or their way of life, Ann Blades decided to write one. She taught herself to paint in order to illustrate her story and used a little girl named Mary as a model. The result was *Mary of Mile 18*, first published in 1971.

The story became an overnight sensation and has remained popular ever since. It has garnered many awards, including the Canadian Association of Children's Librarians Book of the Year, 1972; the Look of Books Design Award, 1972; and the Toronto Public Libraries Top 100 Books Award, 1972.

*Mary of Mile 18* has been translated into Danish, Swedish and German and has been published in the United States and the United Kingdom.

Ann Blades, who no longer teaches, is now a registered nurse and lives in Vancouver where she continues to write and paint.

### Kathy Stinson

Following the birth of her second child, Kathy Stinson left her teaching position to become a full-time mother — an experience which brought her in touch with children's books in a way that teaching had not. "Some of the books were good, but some of them were so nothing that I couldn't believe that I couldn't do better," Stinson explains. So in 1981 she enrolled in a "how to write and get published" course and turned to the Canadian Children's Book Centre for guidance.

Stinson's first two manuscripts, *Red is Best* and *Big or Little*, were both accepted by Annick Press of Toronto for publication in 1982 and 1983. *Red is Best* — the story of a small girl who prefers to wear or use red things even though the same or "superior" items are available in other colours — won the Canadian Children's Book Centre "Our Choice" award and the International Order of the Daughters of the Empire (IODE) Children's Book Award.

In addition, the book has been translated into French, for both Canada and France, and also into German, Dutch, Swedish, Danish, Finnish and Spanish.

Since 1982, Kathy Stinson has published five more books, two of which have been translated into French. All have been award winners.

Established as one of Canada's premier authors of books for preschoolers, Stinson has recently decided to try her hand at writing for an older audience. This has proved to be a challenge. Says Stinson: "It's like starting to write all over again. In the beginning of my career it was, 'Maybe I can do this,' and now it's like that again. I hope I can do it because I'm having such a good time . . ."

So are her readers!

# Pursuing New Courses: International Education and Training

The histories of education and civilization go hand in hand. From the earliest known civilizations in Mesopotamia and China, through the flourishing of the Maya and Aztec ones to those of the present day, education — ranging from formal theoretical study to the practical acquisition of technical skills — has been a critical force. In fact, so key is education to the development of society, that the United Nations recognized it as a fundamental human right in 1948.

Today, in a world of rapidly increasing and ever more complex knowledge, education and training are linking more cultures than ever before. As a result, more international students are studying in foreign countries; teachers are increasingly working abroad; universities and colleges have established a myriad of linkages; and technology and private enterprise are assuming a growing role in educational projects.

## Coming to Canada

Approximately one million students are currently receiving their education outside their home countries, and Canada is among the world's top six host nations. Drawn from every region of the globe, 35 000 post-secondary international students enrolled in Canadian universities and colleges in 1986-87, with Hong Kong, Malaysia, the United States, China, Singapore and the Philippines figuring as the leading source countries.



Bell Canada International has provided communications training around the world.

The students' fields of study are as diverse as the students themselves, ranging from high concentrations in mathematics, engineering, and the social and physical sciences, to lesser numbers in the humanities, agricultural sciences, health and education, and fine and applied arts.

Why are students choosing to study in Canada? Many are drawn by the world-class professors, advanced facilities, and the diversity of academic and vocational courses at Canadian universities and colleges. Others are familiar with Canada's multicultural heritage or have learned of the educational opportunities through former international students. Whatever the reason, there are now record numbers of international students studying at Canadian graduate schools where they make a major contribution to advanced research.

Recognizing the importance of international students, the Canadian government recently extended their and their spouses' eligibility for employment opportunities. Granted greater access to temporary jobs, they are now better able to finance their studies and gain practical experience.

Vocational and short-term specialized training is also a growing trend in Canadian education. Increasingly, students and trainees are enrolling in Canadian institutes of technology, colleges, and professional training programs. And through the cooperative efforts of both the private and public sectors, Canada has recently established two prototype training centres offering highly advanced instruction in aviation and telecommunications to African, Asian, Caribbean and Latin American managers. The International Aviation Management Training Institute (IAMTI) in Montreal is the world's first centre devoted entirely to the training of aviation managers.

Most of its students come to the Institute on special fellowships to gain access to Canadian expertise and instructors.

In a similar fashion, Canadian telecommunications companies, government departments and universities banded together to found the Telecommunications Executive Management Institute of Canada (TEMIC) in 1987. By broadening the experience of managers from the Third World, TEMIC will help spread the benefits of telecommunications technology around the world.

## Canadians Overseas

Canada, however, is not only host to some of the world's brightest students; for many years Canadians have also been active in educational projects abroad, often as a component of the country's international development assistance program. And with the March unveiling of an updated Canadian aid

strategy that establishes human resource development as a top priority, international education and training have been given an added impetus.

Canadian educational activities in the developing world range from basic education and literacy programs, the development of teaching materials and curricula, through training for business and public administrators and health and education professionals, to wide-ranging educational planning projects. A major focus of Canadian involvement is occupational and technical training. As a component of large developmental construction projects, training often takes the form of "on site" apprenticeships in trades such as construction. Alternatively, it may be delivered at technical colleges built, equipped and partially staffed by Canadians.

Whatever their form, all educational activities supported by the Canadian International Development Agency (CIDA) must now reflect the priorities of the new aid strategy. Projects will emphasize training linked to each nation's economic and developmental priorities; will provide greater access to learning opportunities, particularly

for disadvantaged groups, including women; and will aim to become self-sustaining. Finally, CIDA scholarships for international students and trainees will double over the next five years.

The Canadian private sector is equally active in educational activities abroad. For the past 11 years, for example, Bell Canada International has trained employees of Saudi Arabia's national phone company in all aspects of operations — from phone installation and repair, to computer systems operation and managerial skills development. Today over 300 Bell employees work in Saudi Arabia and hundreds of others are involved in training in Malaysia, Venezuela, and five west African nations.

Another Canadian company, the Montreal-based engineering firm Lavalin, has devised curricula, teaching materials and training programs for a diverse range of clients. The company recently completed a four-year contract with the National Apprenticeship Centre in Colombia under which it provided advanced technical training to teachers, and developed business administration courses and an adult education program.

Finally, Educansult Limited, an education consulting firm, is advising the United Arab Emirates' government on the establishment of that country's vocational education system. Six technological colleges are scheduled to open this September.

### Making the Links

Canadian universities and colleges are breaking down traditional classroom walls and extending their work around the globe. Currently, there are several hundred linkages between Canadian post-secondary institutions and those throughout the world. Most projects entail exchanges of professors and students, collaborative research and publications. But that is often only the starting point. Many linkages with developing nations also include the provision of books, equipment and teaching materials to help strengthen Third World educational institutions.

For example, Dalhousie University on Canada's east coast has transferred computer hardware and educational software to the business management and public administration departments of the University of Zimbabwe. The sophisticated equipment, designed at Montreal's McGill University, has furnished a student computer lab and is used for faculty research and administrative support.

The network of linkages extends to other fields and regions of the world. The University of Calgary's Faculty of Medicine and the Institute of Medicine at Nepal's Tribhuvan University have together developed new curricula and teaching materials, and implemented general and post-graduate training programs for doctors in Nepal. British Columbia's

Acquiring valuable skills at a Canadian-supported technical college in Kenya.

Malaspina College trains forestry instructors from various Indonesian vocational institutes. And recently, the École Polytechnique de Montréal signed agreements of co-operation with three Chinese universities.

Canadian universities and colleges frequently maintain a number of different linkages simultaneously. Carleton University in Ottawa, for example, has links with more than 40 institutions in countries that include the U.S.S.R., France, China, the United States, Sri Lanka and Tanzania. As a result, many Canadian post-secondary institutions have established special "international centres" to co-ordinate their international initiatives.

### Teaching with Technology

Today's technology is also adding a new dimension to teaching. Recently, Canada played a leading role in the launch of two groundbreaking distance education programs. Last September, the establishment in Canada of the International Francophone Centre for Distance Education was announced at the Francophone Summit in Quebec. Then in October, the Commonwealth Heads of Government agreed at their meeting in Vancouver to create a Commonwealth Distance Education Network which will be headquartered in the same city and to which Canada is the largest single contributor.

Distance education draws on a range of techniques — including computer conferencing and teaching via telecommunications services. Together the Francophone and Commonwealth initiatives will enhance access to education in as many as 70 developing nations. Through such innovative approaches, Canada will continue to develop new forms of education that respond to the world's changing needs.



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# 2001: A Space Station

**S**cience fiction will soon be fact. The commonly envisaged space station of literature and films took a key step toward becoming reality with the 1987 Canada-U.S. agreement to build a permanently manned, orbiting space station by the end of the century.

The station, orbiting 450 km above the earth, will consist of several habitable crew modules, mounting structures for earth-observation and astronomical instruments, a shuttle docking port and, eventually, free-flying unmanned platforms and commercial laboratories. The United States is building the main structure and two habitation modules and is

negotiating with Europe and Japan to provide two more modules and other facilities. With international participation, the project is expected to cost at least \$18 to \$20 billion (US) over the station's 30-year lifetime.

The space station agreement took nearly four years to negotiate. Under its terms Canada will provide a robotic manipulator system, called the mobile servicing system (MSS), which will be used by crew working inside or outside the station. In return, Canada will share in the management and operation of the station, have access to the station's facilities, and have the right to put Canadian crew members on board.

However, the agreement also allows Canada to withdraw from the project, with reimbursement for its investment in the MSS, if the United States decides to use the station for military purposes that are unacceptable to Canada. This ensures the continuity of the Canadian tradition of peaceful involvement in space.

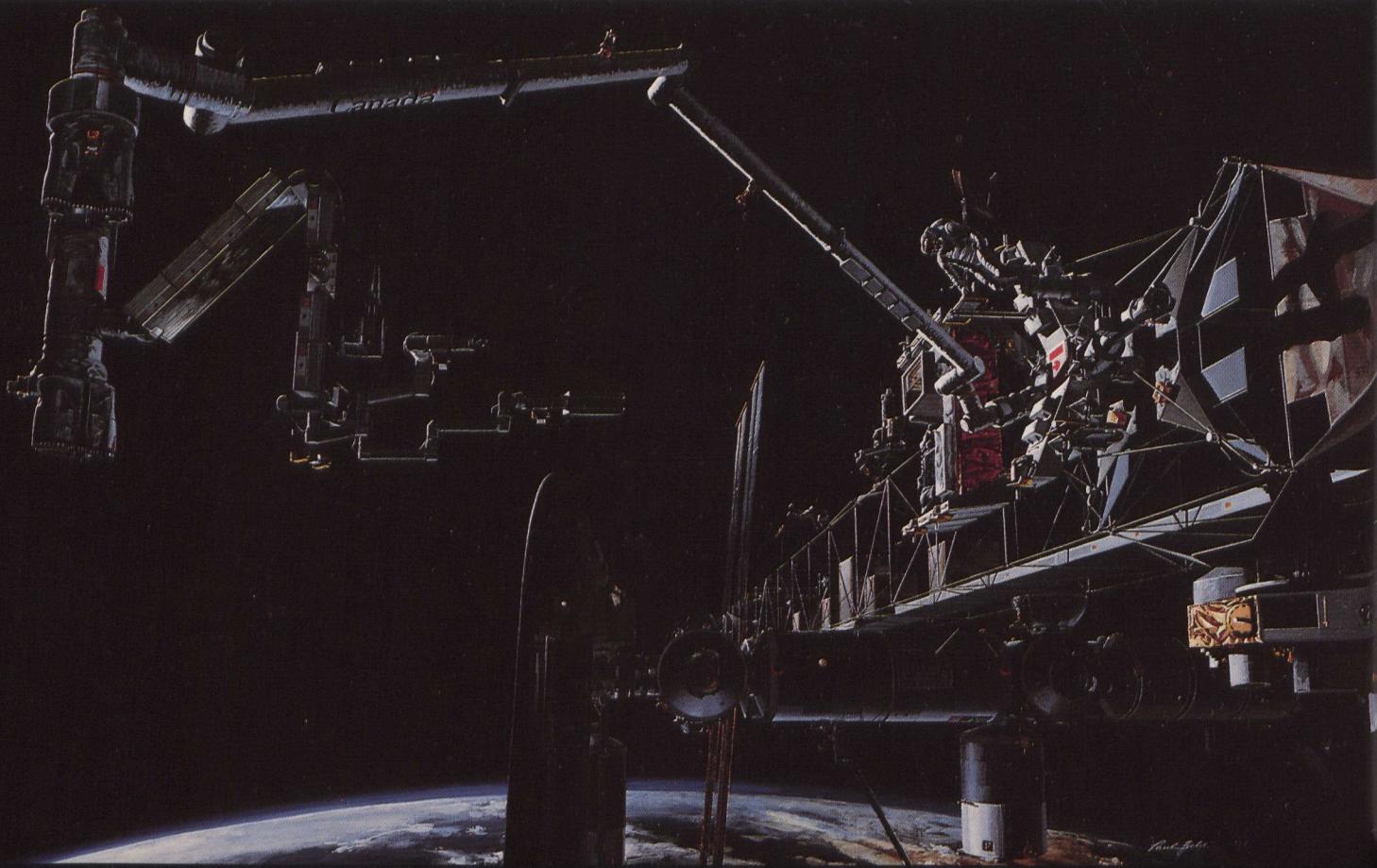
## The Mobile Servicing System

The mobile servicing system will play a major role in the construction of the space station and will be among the first station components launched by the American space shuttle in the mid-1990s.

After completion of the station's construction phase, the MSS will haul cargo and do maintenance and repair work. It may also be used to dock the shuttle.

The challenge of designing and building the complex mobile servicing system is being met by Spar Aerospace Ltd., the Canadian company that built the successful Canadarm. The MSS program will enhance Canada's existing expertise in space robotics and develop advanced computer-control technologies. Spar Aerospace

Canada will participate in the building and operation of an international space station.



is currently working on a state-of-the-art computer graphics simulator to be used in the design and testing of the MSS and eventually for training astronauts in its use.

## Spin-offs

Although the focus of the MSS program is on robotics for space, the project is also encouraging earth-based spin-offs. Spar has already begun development of industrial manipulators for use in dangerous environments — inside nuclear reactors and mines, under water and on high-power transmission lines. And according to the Canadian Institute for Advanced Research, the space station project “has the potential to be a major — perhaps the major driving force in a number of key technologies for the next quarter century. It . . . will have a particularly strong impact on the field of advanced automation and robotics. The technologies developed for the space station can and will be applied on earth.” If Canada develops expertise in new competitive industries, “there would be a very handsome return on the government’s investment,” the institute added.

In a related development, the National Research Council (NRC) of Canada together with Canadian industry has built the space vision system (SVS). A computerized machine vision system, it will provide astronauts operating the Canadarm with graphic and numerical data on the positions and motions of the arm and the payload it’s trying to grab. Canadian astronaut Steve MacLean will test the SVS prototype on the shuttle, and this technology will also be incorporated into the MSS.

## Canadians on Board

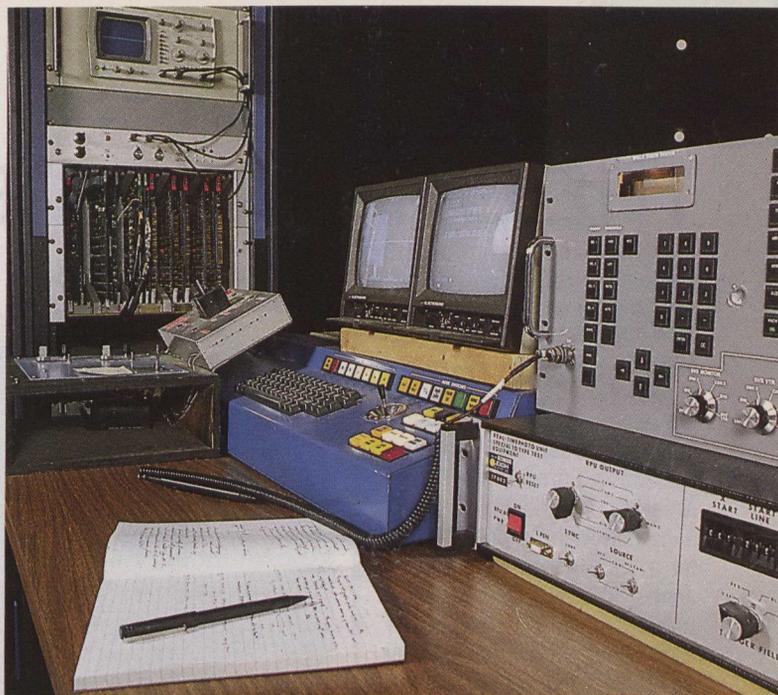
The MSS project is appealing because it is small enough to manage technically and financially in a modest space program. At the same time, it is an essential and highly visible element of the space station, and one that will further the Canadian reputation for technological excellence.

But there’s more than prestige involved. The MSS is also Canada’s ticket on board the station. Like most countries, Canada can’t afford to build its own research labs and space processing factories. Its scientists and astronauts depend on access to facilities built by the other partners.

By providing the MSS, Canada has gained a 3 per cent share in space station facilities and resources. Roy VanKoughnett, head of research operations for the NRC’s Space Division, estimates Canada will place someone on board the station for about six months out of every two years. (It’s expected that crew tours of duty on the station will be either 90 or 180 days.)

A Canadian astronaut may either go on the shuttle flight that delivers the first elements of the MSS to orbit or accompany some of the later elements after the station has been built. In the latter case, a Canadian might become the first to serve a full tour of duty on the station. “We expect to get one or the other,” VanKoughnett said. “Canadian crew will participate in on-orbit verification of the MSS.”

Currently, VanKoughnett and the U.S. National Aeronautics and Space Administration (NASA) are discussing a proposal to send two Canadian astronauts to the Johnson Space Center in Houston for training in the techniques of extravehicular activity (EVA), or “spacewalks” outside the spacecraft. In the future,



astronauts will use the MSS to repair, service and maintain the outside of the station. EVA training will therefore aid in the design of the MSS. “It’s an effort to increase our knowledge and experience and provide a better input into the space station program,” said astronaut Marc Garneau.

VanKoughnett added that “eventually we want Canadians doing EVA and taking operational responsibility for the MSS.” He said this training will be essential for Canadian astronauts if they are to participate fully in space station activities.

## Preparing for 2001

The future uses of the space station seem unlimited. Some forecasts predict the establishment of a multibillion-dollar space materials processing industry after the turn of the century. Zero gravity enhances the production of ultra-pure drugs, crystals, glasses and ceramics, and new alloys and semiconductor materials. And because these products combine high value with low volume and weight, they will likely be economical to produce in space. To assist

**Sophisticated computers control the Canadian-built space vision system.**

Canada’s entry into this promising industry of the future, the Canadian government has established a \$100-million “user development program” which encourages the design of scientific and commercial projects for the space station.

Preparing for the space station requires access to zero gravity, however, and this has become difficult since the *Challenger* shuttle accident. As an interim measure, the NRC has been renting NASA’s zero gravity training plane, the KC-135, which provides researchers with half-minute segments of zero gravity while it flies a roller coaster pattern of climbs and dives. But only so much can be accomplished on the KC-135, and access to the shuttle over the next decade is essential if Canada expects to effectively exploit its share of space station facilities.

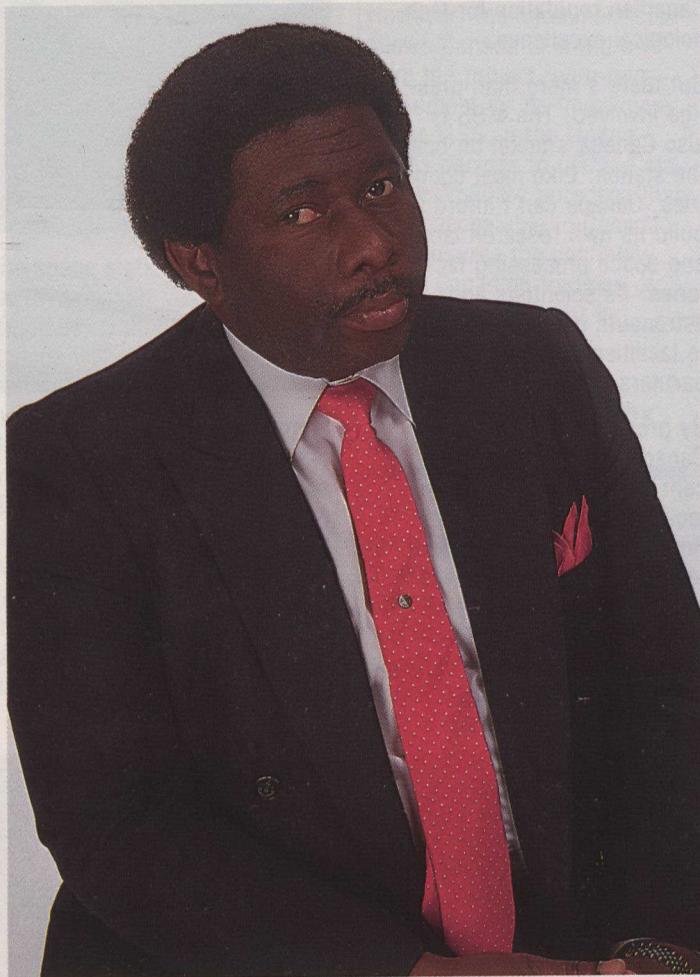
Despite such hurdles, as the world approaches the twenty-first century, the once only imagined dreams of the future are rapidly becoming the realities of today.

# O LIVER JONES: THE LATE-BLOOMER OF JAZZ

Oliver Jones is "hot"! The Canadian-born jazz pianist is in demand all over the world, having completed tours to widespread critical acclaim in Europe, North America, Australia and Japan. Now he's preparing for a 1989 African tour. Jones' success story is unique in that, at 54 years of age, he has been playing jazz seriously for only the past seven years.

Born in 1934, Jones grew up in the working-class district of St. Henri in Montreal. Falling in love with the piano at an early age, he performed his first concert when he was only five. He began formal training at age seven and two years later began studying under Daisy Peterson, the sister of Canada's best-known jazz man: Oscar Peterson. "She was a good teacher," Jones recalls, "understanding and encouraging. She knew I had talent and made sure I got the proper training I needed, giving me a solid classical grounding."

Soon Oliver Jones was performing in local cafés. During the forties, there were well over 300 clubs in Montreal, the majority of which featured live shows. That meant that a lot of work was available for musicians, either playing with a dance band or supporting a club act. Even in the smaller towns surrounding Montreal, live music was in big demand.



In 1951, Jones moved south of Montreal to Valleyfield, Quebec, to become a member of a house band in a hotel. Six years later, Jones was back in Montreal, playing for American Al Cowans. At that time, late night jam sessions were very popular. Musicians like Jones would show up at one of the several after-hours clubs and unwind by "jamming" the night away. According to Jones, these affairs were very competitive but were good learning experiences for young musicians.

**Oliver Jones: "on the road to musical genius."**

Towards the end of the fifties, however, the music union, declaring that club owners were taking advantage of the musicians, imposed a hefty fine on musicians who were discovered jamming for free at the after-hours clubs. According to Jones: "For years, many wouldn't take a chance, and it killed the whole jam scene."

It was in 1963 that Jones met and started playing with Jamaican singer Kenny Hamilton. The next year, they were booked for a month in Miami, Florida. As it turned out, Jones was gone for 16 years, relocating in San Juan, Puerto Rico, where the band frequently played. Their repertoire consisted of "Top 40" pop songs and Jones was both accompanist and musical director.

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*Oliver Jones' style . . . is a robust and swinging one that is reminiscent of fellow Montrealer Oscar Peterson's in its finesse.*

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The band grew more and more popular and in its hey-day toured North America supporting such stars as Bob Hope, Jimmy Durante, Connie Francis and Phyllis Diller. They also played in West Germany and the Far East in United States Overseas shows entertaining American troops.

Tired of the "Top 40" circuit and feeling uncomfortable alongside musicians half his age, Jones returned to Montreal in 1979. There had been a possibility of his getting a job teaching at McGill University, but three eye operations (which failed to restore vision to his right eye) prevented him from pursuing this. Instead, he went to work at Tiffany's, a cocktail lounge on Montreal's trendy Crescent Street and before long, Jones was approached by jazz bassist, Charlie Biddle, to join his band.

"It was a hard decision to make because it meant financial uncertainty," Jones explains. "And in your mid-40s, the risk seems almost too great." But the risk paid off.

The transition from pop to jazz was difficult, Jones admits. He had considered himself a good commercial pianist but only a mediocre jazz musician, and he lacked confidence. But Jones improved quickly and played regularly at the Four Seasons

Jones recorded his first jazz album in 1983 on the CBC (Canadian Broadcasting Corporation) label. After that, he met up with record-producer Jim West, owner of Justin Time Records, a small independent Canadian company that focuses exclusively on jazz artists. Since then, Jones has recorded six albums on that label. *Requestfully Yours* served to promote Jones' reputation in Europe. In 1986, *Lights of Burgundy*, his fifth album, won Canada's Juno Award for best jazz album of the year.

Oliver Jones' style is a unique blend of influences. It is a robust and swinging one that is reminiscent of fellow Montrealer Oscar Peterson's in its harmonic finesse.

"A lot of people ask me if I get tired of the comparison, but not when I'm compared to one of the world's best jazz pianists," says Jones. "If I can do one-tenth of what Oscar has accomplished, I will consider myself having done something in the world."

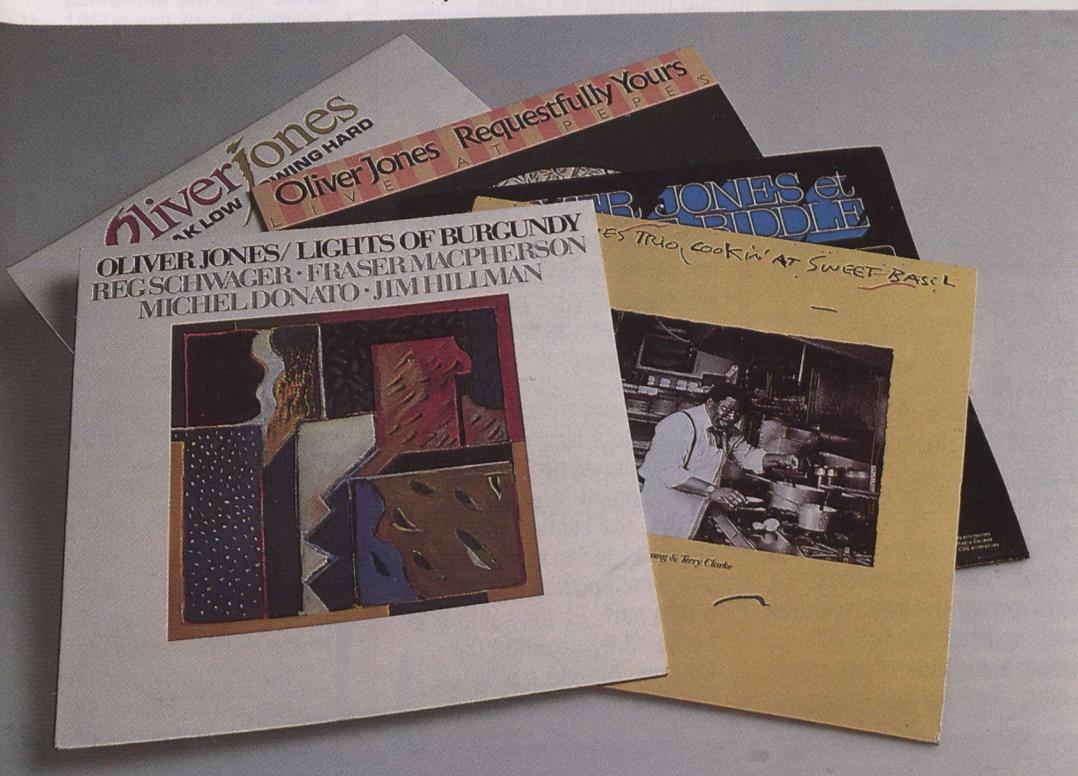
Jones' velocity and accuracy bewitch his audience. Like a true follower in the Art Tatum tradition, Jones is extremely fast, but never sloppy. His complex and technically brilliant improvisations show influences of Peterson, Brubeck, Tatum and Garner. His playing is very percussive and possesses an underlying be-bop current, and his enlightened sense of dynamics impresses even the sternest of critics.

On September 24, Oliver Jones performed at the Queen Elizabeth Hall at the Southbank Centre in London, England. Part of the Canada Nouveau Promotion of Canadian Design and the Arts in London, the show received rave reviews from the audience and critics alike.

The next major step in Jones' career is his upcoming tour of Africa. Tentatively scheduled for March and April of 1989, it will take Jones to such places as Cairo, Egypt; Lagos, Nigeria; Dakar, Senegal; Abidjan, Ivory Coast; and Yaounde, Cameroon.

Coinciding with this event is a documentary film on Oliver Jones produced by Duckworth Films of Montreal. To be filmed in Africa during the tour, its purpose is not to record the tour, but rather to focus on jazz as a by-product of the slave trade and hence a largely African phenomenon.

The working title for the hour-long film is *Oliver Jones in Africa* and it is scheduled for release in early 1989. It is the second film on Jones by filmmaker Martin Duckworth. The first, *Le jazz: un vaste complot*, was premiered on July 2 at the Montreal International Jazz Festival. It featured two other reputed jazz pianists as well as Jones: Leonid Chezyk of the Soviet Union and a Canadian from Montreal, Jean Beaudet. Jones, as well as acting as official host for the event, played at the festival for the seventh consecutive year.



Hotel with Biddle, and later split his time between The Queen Elizabeth Hotel and Biddle's own place, *Biddle's Jazz and Ribs*.

But Jones moved up quickly. In 1982, he played at the famed Montreal International Jazz Festival. The following year he was featured there in a solo concert. According to Jones, that event really boosted his confidence: he realized that he could play and entertain without support from other musicians. These days, approximately one-third of Jones' work consists of solo performances.

Len Dobbin of Montreal's *The Gazette* newspaper said of the album: "Musicians Oliver Jones, Fraser Macpherson, Reg Schwager, Michel Donato and Jim Hillman, producer Jim West and engineer Morris Appelbaum all helped to make the LP one of [the best], if not the best ever produced in Canada."

Last year, Jones released *Speak Low, Swing Hard*. It received rave reviews the world over, some critics hailing it as Jones' best yet.

Jones' albums have won praise from jazz critics and fans alike.

However, Peterson's style is for the most part "virtuoso," whereas Jones' is more subtle and romantic. In Peterson's view, Jones is "on the road to musical genius." Leonard Feather, the revered American jazz critic, recently referred to Jones as "one of the best musicians I have ever heard."

# Toronto:

## New City in the New World



**P**eter Ustinov once observed that Toronto seemed to be New York City, run by the Swiss. Indeed the people of Switzerland, known for their clean pristine landscape and propensity for precision would be readily "at home" in this city of 3.5 million — Canada's largest urban centre.

What is one to make of this "new city" in the New World? At first glance, it may appear American with its ubiquitous grid of highways and buildings. While Toronto is seen to spread out like Los Angeles and have as many suburbs as Detroit, the comparison is superficial only.

For one thing, Toronto manifests an architectural continuity stretching outwards from the city's core in a manner quite different from most American cities. It also displays a continuous canopy of green, formed in part by its extraordinary system of natural ravines, and in part by its unique urban forests in extensive low-rise residential neighbourhoods.

Toronto's name is of Indian derivation and means "place of meeting." This is apt since long before it was settled, native peoples passed through the area following a trail and canoe route that was a portage between lakes Ontario and Huron. The Toronto Passage, as it was known, was used by French explorer Étienne Brulé as early as 1615 and was popular with French fur traders.

During the 1780s, the United Empire Loyalists — American colonists who supported the British cause during the American Revolution — moved north and settled around the upper St. Lawrence River and lower Great Lakes. In 1834 the site was incorporated as the City of Toronto with an elected civic government.

With the arrival of the railways during the 1850s, the city's regional grasp was widely extended. Wholesale, banking and railway

entrepreneurship grew accordingly, and Toronto was made the capital of the province of Ontario at Canadian Confederation in 1867.

Today, Toronto is the pre-eminent centre of commerce and industry in Canada. Visitors (including France's President François Mitterrand) invariably remark on the thriving architectural culture that is everywhere in evidence here, whether in the dazzling downtown sculpture garden of gleaming towers or the carefully maintained residential areas, many of them restored for a new and vital existence.

From the observation deck of Toronto's landmark CN Tower, the world's tallest free-standing structure at 553 m, the contemporary city stretches to the north, east, and west horizons, covering 5 600 km<sup>2</sup>. To the south it is bordered by beautiful Lake Ontario. Toronto's physical features include a natural

harbour sheltered by sandy islands, backed by gently rolling, well-watered, fertile country. The area has a fairly mild climate, by Canadian standards, with winters much less severe than on the Prairies or in the Maritimes for instance.

In economic terms, Toronto's growth is indisputable. Over the past five years, property values in the downtown core have doubled. The office vacancy rate has hovered near 8 per cent, well below the 18 per cent average of other major North American cities. Last year, retail sales jumped 12 per cent to \$20 billion, unemployment dropped to less than 4 per cent, 75 000 new businesses started and 17 million tourists spent more than \$2 billion.

Toronto's skyline features the landmark CN Tower, the world's tallest free-standing structure.



© G.V. Faint/The Image Bank

Home to the seventh largest stock exchange in the world, Toronto has emerged as the "head office" location for more than half of Canada's financial institutions, insurance and real estate companies, and publishing houses. It is also the principal centre of conventions thanks to the excellent facilities the city provides. Toronto, in fact, recently hosted the 14th annual Economic Summit of major industrialized nations held at the Metropolitan Toronto Convention Centre.

Those familiar with the city in the 1950s will find it greatly changed today. Of the essentially English provincial city there remain few traces. The most notable demographic change in Toronto has been the increase in non-European immigrants. In 1987, the number of people of British origin in Toronto stood at 28 per cent, and of Italian origin, 12 per cent (the largest settlement outside Italy). These two biggest groups are followed by large Scottish, Irish, Jewish, Chinese, Portuguese, Greek, Caribbean, French, Indo-Pakistani, Ukrainian and Polish communities. During the late 1980s, Toronto's sizeable increase of immigrants clearly established the city as one of the most racially and culturally varied in the world.

Among the noticeable effects of this increased immigration is the *mélange* of languages one hears in the streets, on radio and on television. Today, Toronto's rich multicultural composition is reflected in the performing arts as well as in ethnic newspapers and magazines.

In addition, city streets are lined with numerous ethnic shops and grocery stores and a great variety of excellent ethnic restaurants. The famed Kensington Market — where foods from all over the world can be bought in a European setting — shows that Toronto comes honestly by the description "cultural mosaic."

There is more to Toronto, however, than ethnic diversity. One of the city's most exciting dining and shopping spots is in the Bloor/Yorkville streets area, known for its high-fashion boutiques, movie theatres, and fashionable restaurants. Yorkville, a hangout for hippies in the 1960s, is now a focal point for antique and art dealers, designer clothing, trendy bistros and chic nightlife.

**Kensington Market:**  
a cultural mosaic of  
people and foods  
from around the  
world.



© Derek Caron/Masterfile

In recent times, culture and entertainment have flourished in Toronto. The era has produced new radio and television stations, a burgeoning film and video industry, more than two dozen professional theatres and an increase in both the number of private art galleries and merchants specializing in some aspect of service to the various cultural industries.

Toronto is also the centre for English Canadian media. Home to the CBC (Canadian Broadcasting Corporation), the city is also headquarters for national newspaper chains such as Southam Inc. and Thomson Newspapers. The latter's *Toronto Globe and Mail* is considered Canada's most respected English-language daily newspaper and maintains regional editions across the country.

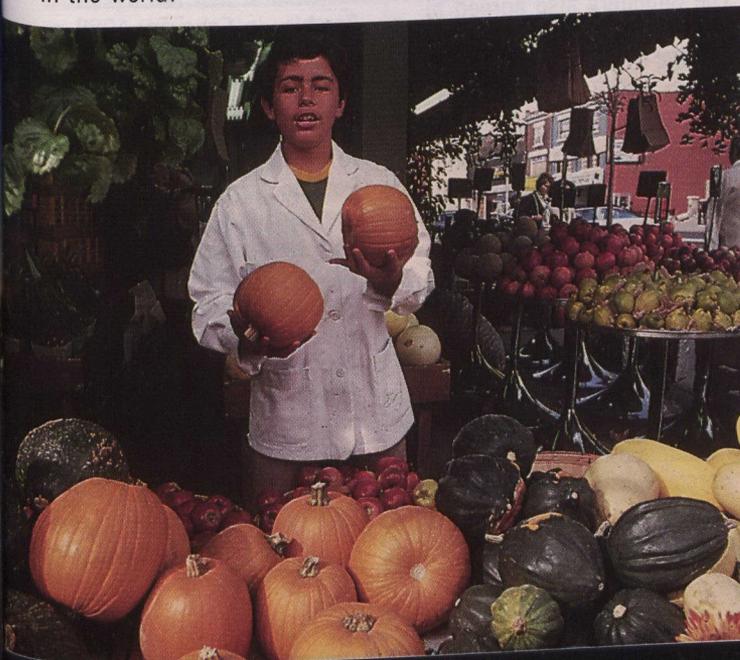
Undoubtedly, Toronto is the main urban cultural focus of English Canada. It is home of the largest Canadian post-secondary institution — the University of Toronto — and the more recent York University and Ryerson Polytechnical Institute.

Toronto is home to the largest Chinese community in Canada.

The Toronto Symphony and the National Ballet of Canada, which are two of the country's most eminent artistic groups, the numerous museums, the innovative Ontario Science Centre and the world-renowned Royal Ontario Museum, all make Toronto an important cultural centre.

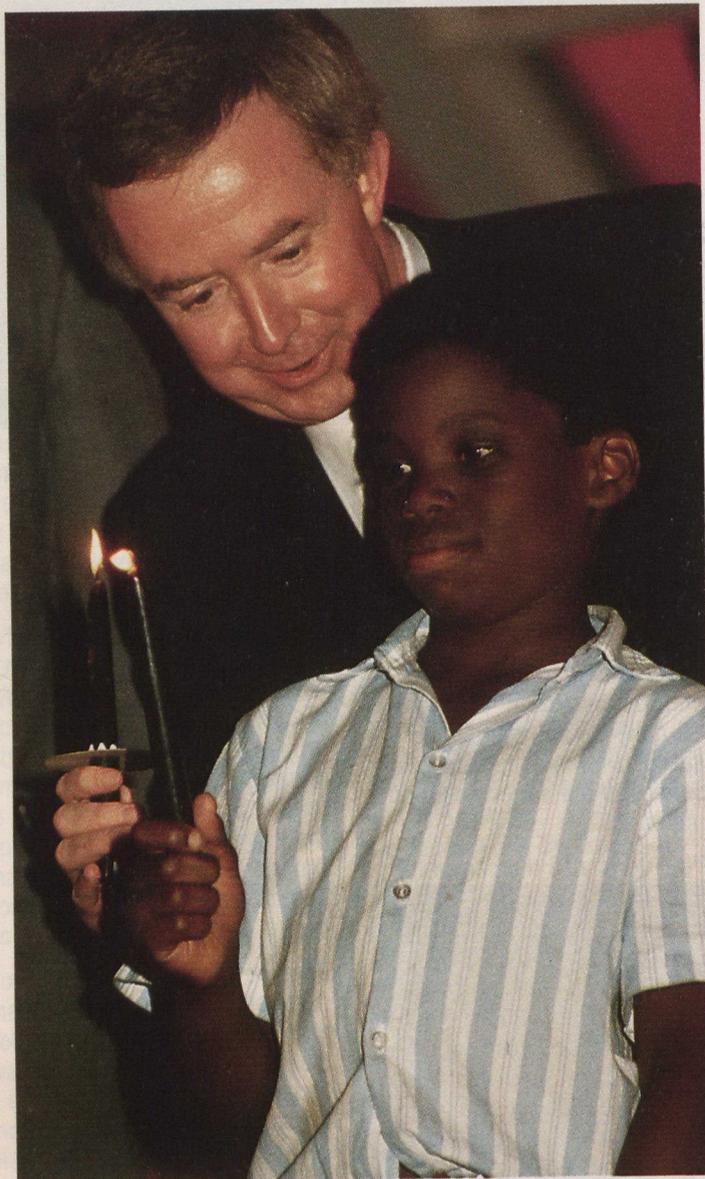
Perhaps the most common comment Torontonians hear from foreign visitors is what a clean, safe city Toronto is. In fact, some say it is one of the most admired in North America.

By international standards, however, Toronto is still quite a young metropolis. It is, nevertheless, growing into a legitimate cosmopolitan centre, and more and more, people the world over are realizing what the city has to offer.



# CROSS CANADA CURRENTS

## Action against Apartheid



Secretary of State for External Affairs Joe Clark led a candlelighting ceremony in support of the victims of apartheid.

The Commonwealth Committee of Foreign Ministers on Southern Africa recently turned the ever stronger international spotlight of opposition onto South Africa and its system of *apartheid*. Meeting in Toronto for two days during August, the

committee examined reports on the impact of existing sanctions against South Africa and that country's international financial links, took steps to widen and tighten economic sanctions, and discussed a Canadian strategy to combat South African censorship and propaganda. The committee also looked at ways to assist victims and opponents of apartheid, help the front line states, and press for Namibian independence.

At the meeting, the eight foreign ministers from Australia, Canada, Guyana, India, Nigeria, Tanzania, Zambia and Zimbabwe agreed to take action to press Commonwealth countries and other governments to widen trade bans. Governments were called on to consider several measures to improve existing sanctions, including stricter customs scrutiny, heavier penalties for violations, and prohibitions on technology transfers designed to circumvent sanctions.

The ministers also agreed to increase restrictions on new lending and new investment, and to try to further internationalize such restrictions. They asked their countries' financial institutions to not expand trade financing and to press for even more restrictive loan rescheduling arrangements. These concrete proposals, if widely adopted, will significantly increase pressure for change on Pretoria.

In addition, committee chairperson and Canadian Exter-

nal Affairs Minister, Joe Clark, presented a Canadian strategy to counter South African censorship and propaganda, which was adopted as a basis for developing a practical Commonwealth response to the challenge. Several ministers indicated their intention to implement specific proposals. For its part, Canada will spend \$1 million to put the proposals into action, including contributing to a legal action fund against censorship; providing journalism scholarships, fellowships and awards for South Africans; and helping groups of concerned citizens to blunt the effects of propaganda.

The Toronto conference was the second meeting of the Commonwealth Foreign Ministers Committee, founded at last October's Commonwealth Heads of Government meeting in Vancouver. Responsible for providing impetus and guidance to Commonwealth efforts on Southern Africa, the committee first met in Lusaka, Zambia, in February 1988. Harare, Zimbabwe, will host the next meeting in early 1989.

In conjunction with the Foreign Ministers' meeting, the Canadian government also sponsored a public forum on South African censorship and propaganda, which drew participants from Africa, the United States, Britain and Canada. A parallel arts festival featured anti-apartheid concerts, exhibits, films and a symbolic candlelighting ceremony.

## Tay-Sachs Gene Flaw Identified

In an important step towards a precise test for Tay-Sachs disease, a genetic defect that causes the disease has been identified by Dr. Roy Gravel, professor of genetics at the Hospital for Sick Children in Toronto. The disease causes mental retardation and is usually fatal by the age of four.

During the past year, Dr. Gravel and his colleague, Dr. Enrico Arpaia, dissected the Tay-Sachs gene. In November 1987, they identified the defective genetic coding that characterizes the disease, distinguishing it from among more than 30 000 other components within the DNA heredity molecule. They subsequently developed a DNA probe, which acts as a "tracer" to identify the subtle abnormalities. The probe is a human-made bit of DNA that binds exclusively around the specific genetic defect, making accurate testing possible.

According to Dr. Gravel, his discovery is important for what it heralds for other diseases. "This is the future for the diagnosis of all genetic disease. It's an absolute test, in that it

distinguishes normal from mutant genes unambiguously in patients or carriers." The test uses as little as a single drop of blood.

Using a procedure developed in the United States, the researchers have been able to discover a hitherto unsuspected mutation of the disease, and there may be more. Because there are some patients with more than one mutation, additional tracers will be necessary. This means it will be at least two years until there is a complete diagnostic test for Tay-Sachs disease. However, the Cetus Corporation's "polymerase chain reaction" used by Gravel and Arpaia makes the tracer a million times more visible, speeding the analysis process. As soon as the team has constructed a tracer for each mutation, diagnostic accuracy will be much greater than the current mass screening process.

The Toronto team is in the forefront of the international search for the genetic cause of Tay-Sachs disease, which is approximately 10 times more prevalent in the Jewish population than among non-Jewish groups.

## Canola Oil Cooking Up a Storm

Canadian canola oil export sales have increased dramatically in recent years as health-conscious people turn to the high-quality oil that has been produced and used in Canada for many years. The light taste and consistency of canola make it a favourite for salads and baking. For those concerned with cholesterol levels, canola has the added advantage of having the lowest saturated fat content of any vegetable oil.

Domestic sales of canola have risen almost 80 per cent in seven years, and the international market demands more every year. Canadian farmers are growing more canola, and Canadian plant breeders are developing new strains of the oilseed plants. Since granting of GRAS (generally regarded as safe) status to canola oil in the United States, sales to that market have increased considerably.

Products such as Proctor and Gamble's award-winning "Puritan" oil, which was chosen "health product of the year" in 1987 by the American Health Foundation, have speeded acceptance of canola in the United States. Many people find canola to be exactly what they are looking for, and Canada is answering their demands. California alone consumes 635 000 tonnes of vegetable oils a year — 270 000 tonnes of which end up on salads.

Canadian Grain and Oilseeds Minister Charles Mayer is enthusiastic about canola: "The recognition conferred by the American Health Foundation will create new marketing opportunities for Canadian canola, one of the most nutritious edible oils available today."

Canadian canola oil is the growing choice of health-conscious consumers.



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## Formolo and Carbone 14 Put to the "Fest"

The Quebec theatrical company "Carbone 14" and Maria Formolo, a dancer from Alberta, were the Canadian contributors to joint festivals of theatre and dance that took place in seven cities in Venezuela and Colombia.

Carbone 14 was acclaimed for its production of *Hamlet Machine*, a multilingual work by German author Heiner Müller, and Maria Formolo "mesmerized her audiences" with her dance adaptation of Inuit art. Robert Desrosiers, director of *Hamlet Machine*, and Maria Formolo conducted workshops as part of the festivals' contribution to the artistic development of Latin America.

The festival of drama, Festival Ibero Americano de Teatro de Caracas, together with the dance festival, Segundo Encuentro de la Danza, were also a part of the celebration of the 450th anniversary of Bogota, Colombia.

The twin festivals, described as "more than a mere cultural exchange," included more than 50 productions, as well as conferences and workshops on drama and dance. Presentations included theatrical and dance groups from Latin and North America, Poland, the Soviet Union, Spain, Belgium, Greece and Canada.

## Animated Film Festival in Ottawa



The only North American international animation festival — the Ottawa 88 International Animation Festival — was held at the National Arts Centre from October 5 to 9. Approximately 300 animators participated in the festival, which featured 100 films chosen by jury from over 600 entries. The festival included animated films for children and a popular series of evening screenings for the general public.

The competitive aspect of the festival attracted some of the world's best animators from countries that included the United States, France, Holland, East Germany, the Soviet Union, Mexico and Spain. The festival also featured retrospectives of major studios such as Bulgaria's Sophia Animation Studio. About half of the animated films shown were made in Canada.

1961

A joint Canadian-Chinese production, *The Nightingale* was featured at the International Animation Festival in Ottawa.

One of five such festivals in the world that take place in France, Yugoslavia, Japan and China, Ottawa 88 was funded by the Ottawa firms Crawleys International Inc. and Hinton Animation Studios, Inc.; the Canadian Broadcasting Corporation (CBC); the National Film Board; as well as all three levels of government.

Ottawa hosted the festival four times between 1976 and 1982; then it moved to Toronto and later to Hamilton. This year, the biennial event returned to Ottawa, where its organizers in the Canadian Film Institute hope it will remain.

## Canada Creates the Right Atmosphere

At Canada's initiative, more than 300 scientists, politicians and policymakers from more than 40 countries met in Toronto, June 27 to 30, to exchange ideas at a conference entitled, *The Changing Atmosphere — Implications for Global Security*.

The Toronto meetings allowed scientists to piece together a mosaic of information from the research being done in many different countries. The sessions also increased awareness among politicians and decision-makers of the need for global action to cope with the consequences of climatic shifts.

Canadian Environment Minister Tom McMillan drew attention to Canada's continuing concern about global environmental issues, from participation in the United Nations' 1987 *Brundtland Report*, through the 1987 Montreal Ozone Protocol, to Canada's sponsorship of the 1988 Toronto conference, that in turn will lead to Canada's 1989 conference on the Law of the Atmosphere.

"I am pleased to support the vital work of the Brundtland commission through this conference," said McMillan. "We hope that it will represent a major step towards the development of an international strategy to protect the global atmosphere."

## A Prize Performance

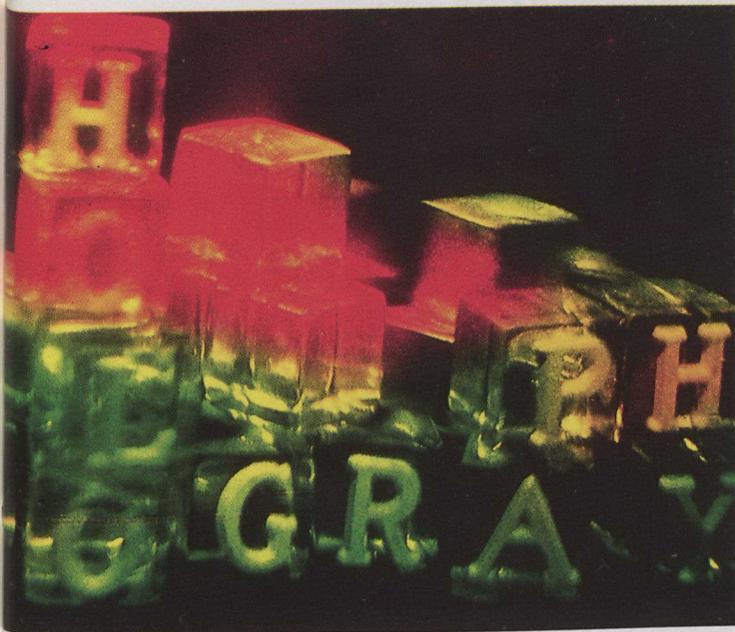
Two young competitors, one from Britain and one from Denmark, danced away with the Eric Bruhn prize on the night of May 14 in Toronto. They were tops in this new international competition for young dancers. The prize is worth \$15 000, but for the dancers there was much more than money on the line.

Toronto's O'Keefe Centre was sold out. The event: an international ballet competition for young dancers, all under the age of 26. Eight dancers came from the Royal Ballet in England, the American Ballet Theatre, the Royal Danish Ballet, and the National Ballet of Canada. They were competing for the first annual Eric Bruhn prize. It was a celebration of youth, from a man who worked to promote young dancers. Eric Bruhn directed each of the four companies represented at the competition, and when he died two years ago at age 57, he left a trust fund to support the prize.

Under the rules of the competition, the dancers competed as individuals rather than as teams. The two winners — Errol Pickford of Britain's Royal Ballet and Rose Ged Poulsen of the Royal Danish Ballet — will split the \$15 000 prize.

The Eric Bruhn competition gives young dancers a chance to turn hard work into glory on a world stage. It also provides an opportunity to thank a dedicated Canadian who touched many dancers' lives, inspired their work and gave them a future.

## Through a Glass Lightly



The world's largest display of holograms is touring Canada.

The world's largest display of holograms is touring Canada. Images in Time and Space, assembled by The Associates of Science and Technology, includes images from Canada, the United States, the Soviet Union and 13 other countries in an exhibition that informs, educates and amazes.

Holograms preserve three-dimensional images for both science and art. The "pictures" are captured by shining a laser through a specially treated glass plate that records the interaction between the light waves going to an object and the same light waves reflected back from it. When light shines from the same angle as that in which the laser was directed, the glass "remembers," and becomes a window onto what was once in front of it, through which the object can be seen in all the roundness of three dimensions.

Visitors to the exhibition cannot resist trying to touch the realistic shapes that seem to extend up to an arm's length from the walls on which the

holograms hang, or to reach through the frame into the three-dimensional images of objects that can be observed from different angles.

The Hungarian-born British physicist Dennis Gabor received a Nobel prize in physics more than 20 years after his 1947 invention of the "window with a memory." Since then, holography has been developed in two major directions: Soviet scientists concentrate on the single-colour reflection holography pioneered by Uri Denisjuk, and U.S. scientists are refining "rainbow" holography which explores the full range of colour.

Holograms in the exhibition demonstrate the incredible speed and accuracy of the technology. Visitors see the shock-waves of projectiles going faster than the speed of sound, and examine detail so precise that it is measurable in fractions of the width of a light wave.

Images in Time and Space has been seen in Montreal and Ottawa. The exhibit will be shown in San José, California, from October through January and will then tour Canada's larger cities for another 18 months.

## The Arctic on Ice

Arctic Ice Water is a new sparkling water that has been bottled, packaged, distributed, and marketed from Edmonton, Alberta, since the spring of 1987.

General Manager of Arctic Ice Water Ltd., Brian Draginda, quotes Canadian and American consumer analysts who say that consumption and sales of bottled water are expected to double within the next 10 years. "People are very health conscious now," he explains. "They are concerned about eating and drinking pure water which is low in sodium and high in calcium. The company distributed well over 100 000 bottles in 1987.

Draginda is currently marketing Arctic Ice Water in the United States where it is available at H<sub>2</sub>O "water bars" in Beverly Hills, Sacramento and San Francisco. "The response has been very rewarding. I've been told that Arctic Ice is the number one seller where consumers buy water by the glass," Draginda says. He is currently negotiating with major food chains in California, and Japan for distribution.

Canadian "Arctic Ice Water": sparkling at home and abroad.



# A Force on the Move

The Royal Canadian Mounted Police (RCMP) Musical Ride represents a history as colourful as the riders' scarlet tunics.



Photo: Malak

The Royal Canadian Mounted Police (RCMP) Musical Ride represents a history as colourful as the riders' scarlet tunics and as proud as their magnificent black horses. In 1874, the first contingent of the Northwest Mounted Police was dispatched to Canada's frontier west to end a flourishing whiskey trade and establish law for coming settlers.

Patrolling hundreds of miles on horseback, the force not only ensured the peaceful settlement of Canada's west but also later maintained law during the Klondike Gold Rush and helped open up Canada's Arctic frontier. Less than 50 years after its founding, the Mounted Police absorbed other existing police forces to form the nation-wide Royal Canadian Mounted Police.

The RCMP Musical Ride recalls this heritage while thrilling audiences with its precision. Performed by a full troop of 32 riders — all police officers with at least two years' active duty — and their specially bred mounts, the Ride consists of intricate manoeuvres originating in traditional cavalry drill formations. Months of intensive training are required to prepare horse and rider for performance.

Most recently, the Musical Ride has completed a two-and-one-half month summer tour of Europe, performing in Ireland, England, West Germany, Switzerland, the Netherlands, Belgium and France. Past tours have taken the Ride to the United States, Bermuda, Denmark and Japan.

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