The Canadian Architect

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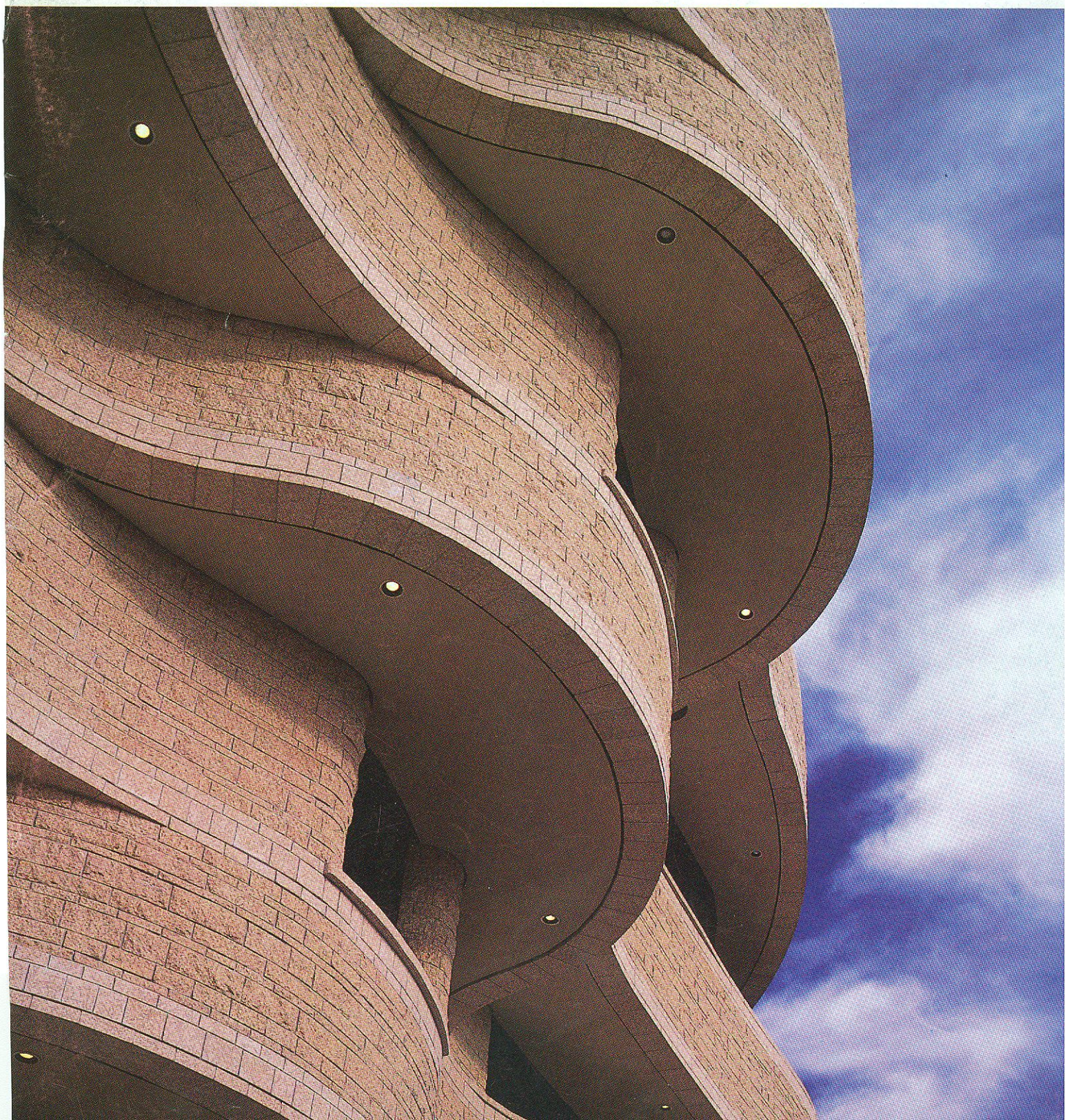

The Canadian
Architect

NOVEMBER, 1989

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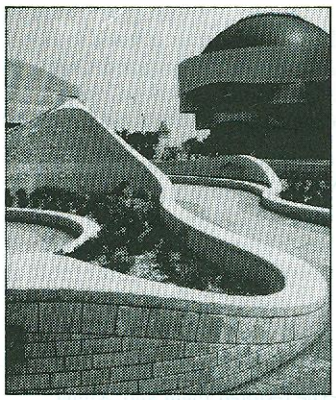

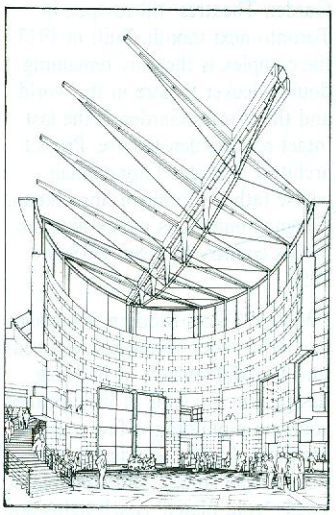

Cover:
Wall detail from the Canadian Museum of Civilization, Douglas J. Cardinal Architect Ltd./Tétreault, Parent, Languedoc & Associes, Inc. Photo by Malak, Ottawa. See story page 18.

The editorial goal of The Canadian Architect is to provide service to the architectural profession in Canada in three related directions: (1) To keep readers informed of innovative trends in building design, products and technology including products and materials. (2) To inform readers about innovative business techniques that will help run a more efficient and profitable practice. (3) To inform readers about new events that will help them as professionals.

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Perspective

Letters

In her statement on the Canadian Centre for Architecture (*The Canadian Architect,* August 1989, p. 16), Phyllis Lambert concludes that the world is starved for an architectural culture, of which the CCA is a beginning. Joseph Baker's critique starts with an explanation of why his critical faculties are disarmed, down about his ankles, and more than slightly constrained, in the face of a gift so rich in resources.

There can be much discussion about what a culture is, but there is little doubt that any critical evaluation will show Lambert's statement to be an underestimation of the intellectual development of architecture and an overestimation of the CCA's place in it.

Baker underestimates the disarming of his critical faculties and fails to distance himself from the irritating obscurities of the neo-classic, academic jargon that clutters contemporary critiques.

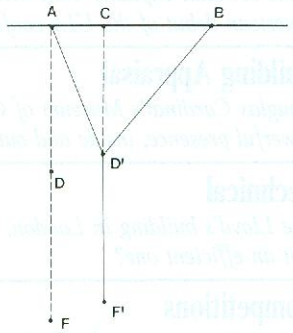
Would someone please tell him that he is writing for a trade journal, as Lambert insists, and when talking to tradespeople, it is mandatory to call a spade, a spade, or a mistake, a mistake. As a professor, Baker should understand that having failed in this mandate, it is important for his self-respect and development to pull his critical faculties back up to a decent level and try again.

Patrick J. Quinn, P. Eng.
Quinn Dressel Associates
Toronto

Re "Great Building Mysteries," by Paul Sandori *(The Canadian Architect,* August 1989, p. 41): that spider was even cleverer than you think! In the position shown in your article, the spider only supports about 1/3 of the weight of the fly. By increasing the length of BD′ relative to AD′, the lifting force can be reduced to suit even the most out-of-shape spider.

Did anyone notice if the spider was wearing an iron ring?

Nigel Brown, P.Eng.
Read Jones Christoffersen
Consulting Engineers
Toronto



Paul Sandori replies:
The little spider certainly deserves more recognition. In fact, his fly-lifting device was a true "simple machine," so that he (she?) could, theoretically at least, lift "any heavy load a small distance, by applying a small force over a large distance" as, I believe, Archimedes put it. Given a fixed point, he could lift the earth just as the learned Greek philosopher proposed to do with his simple machine, the lever.

I know for a fact that the spider was not wearing an iron ring–he never became an engineer. There have been rumours that he gave up because, having looked at the incomes and liabilities of engineers, he decided that catching flies was preferable. That is nonsense. The truth is that, sadly, the spider failed "Structures I" at university because he could not draw bending moment diagrams, so he never got a chance to do anything but catch flies.

Notes

The City of Edmonton has launched a two-year urban design study of 108 Street, from 104 Avenue to the Legislature. The goal is to prepare design schemes that will enhance the city's image as Alberta's capital and link the legislative grounds to Jasper Avenue and the proposed Grant MacEwan Community College campus on the downtown CN lands.

•

Sievenpiper Associates Inc. will be the architects of the new Canada Masonry Centre complex in Mississauga. The firm's concept design was chosen over submissions by Douglas Cardinal Architects Ltd. and A.J. Diamond, Donald Schmitt and Company.

•

The restored Elgin and Winter Garden Theatres will re-open in Toronto next month. Built in 1913, the complex is the only remaining double-decker theatre in the world, and the Winter Garden is the last intact roof garden theatre. Project architect is Mandel Sprachman, whose father, Abraham Sprachman, designed numerous movie theatres in this country between 1919 and 1950.

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"While the Post-Modern movement had valid roots, it has now evolved into the McDonald's of building design. Put a couple of little peaked roofs on a building, a few rounded windows, finish the exterior with puky pastel stucco, add a couple of bogus 'gold-plated' coach lights and you have it."–Paul Harris, a *Vancouver Sun* reader, from an article on the ups and downs of life in Lotusland.

•

Are publicly sponsored developer/architect competitions improving the design quality of the built environment? Almost 75 per cent of the respondents in a recent AIA survey believe the choice of a winning team has more to do with financial considerations and the developer's experience than design issues. The study suggests that these competitions would be improved by the early selection of an architect as advisor.

•

Ontario's building officials want inches, feet and yards in the next edition of the province's building code. Members of the Ontario Building Officials Association complained recently at their annual conference that while the measurements in the Ontario Building Code are metric, most of the plans they see are in imperial, as are most building products. Proposed amendments to the OBC are being debated by members of the construction industry, and at least some of them are expected to be put in place in the spring of 1990.

Awards

Queen's Quay Terminal at Toronto's Harbourfront, by the Zeidler Roberts Partnership, received an "Excellence on the Waterfront" award from the Waterfront Centre in Washington, D.C.

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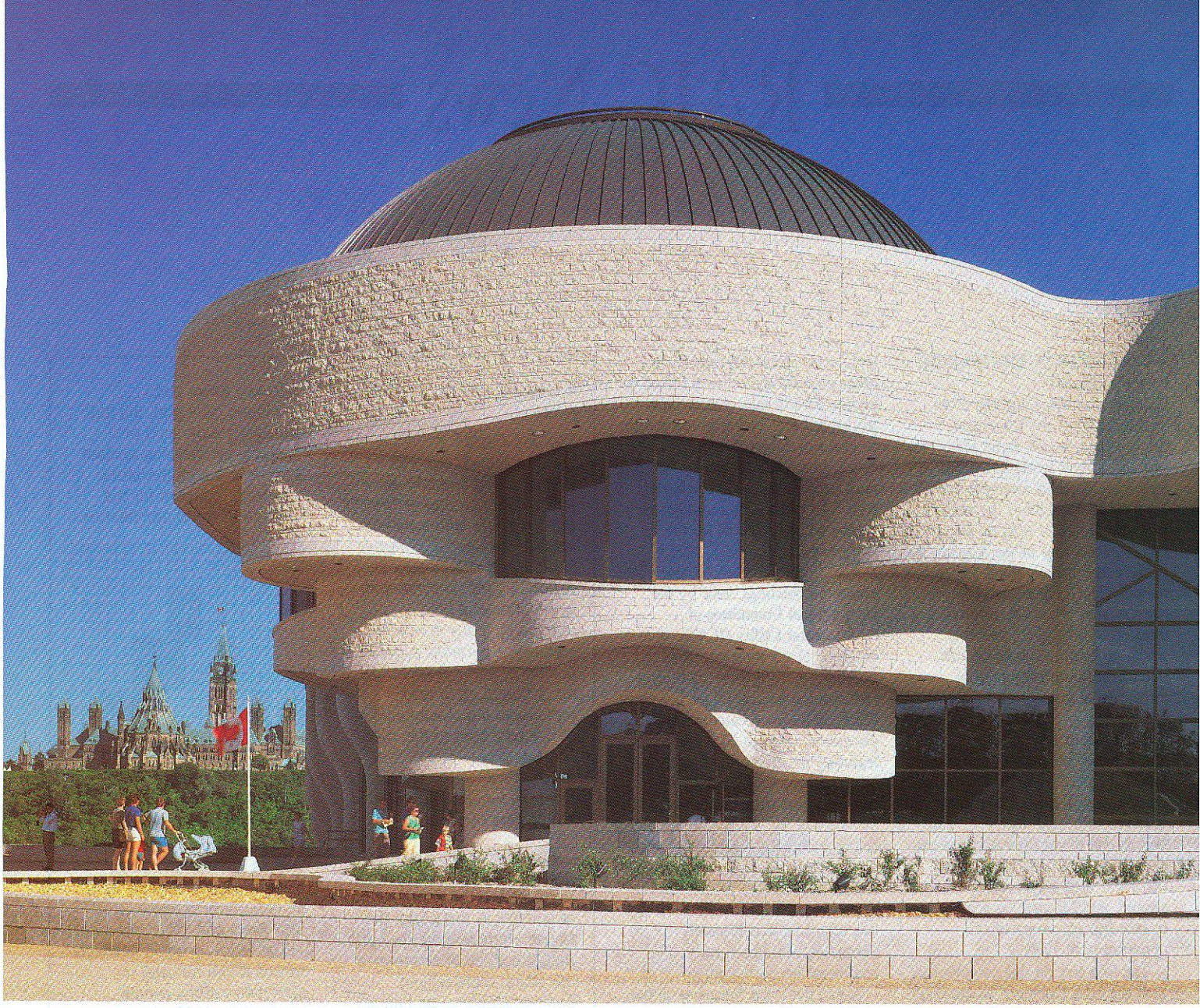
Jack Diamond, whose 25 years in practice have produced such buildings as the Metropolitan Toronto YMCA, received this year's Toronto Arts Award in the architecture and design category.

•

Studio Asymptote, the New York firm run by Hani Rashid and Lise Anne Couture, received an honourable mention in the "Bibliotheca Alexandrina" international competition. First prize went to the Norwegian firm of Snohetta Arkitektur Landskap & Associates.

•

The Ottawa Courthouse and Registry Offices, designed by Murray & Murray, Griffiths & Rankin/Craig Kohler Dickey & Edmundson/Ala-Kantti/Associates, won an award for energy-efficient design for its developer, the Ontario Ministry of Government Services. The Energy Efficient Distinction awards for commercial and industrial building design, created by the Canadian Electrical Association, are open to building owners, developers, architects and engineers. For details, contact your electric utility.



The Canadian Museum of Civilization — Hull, Quebec Architect: Douglas J. Cardinal

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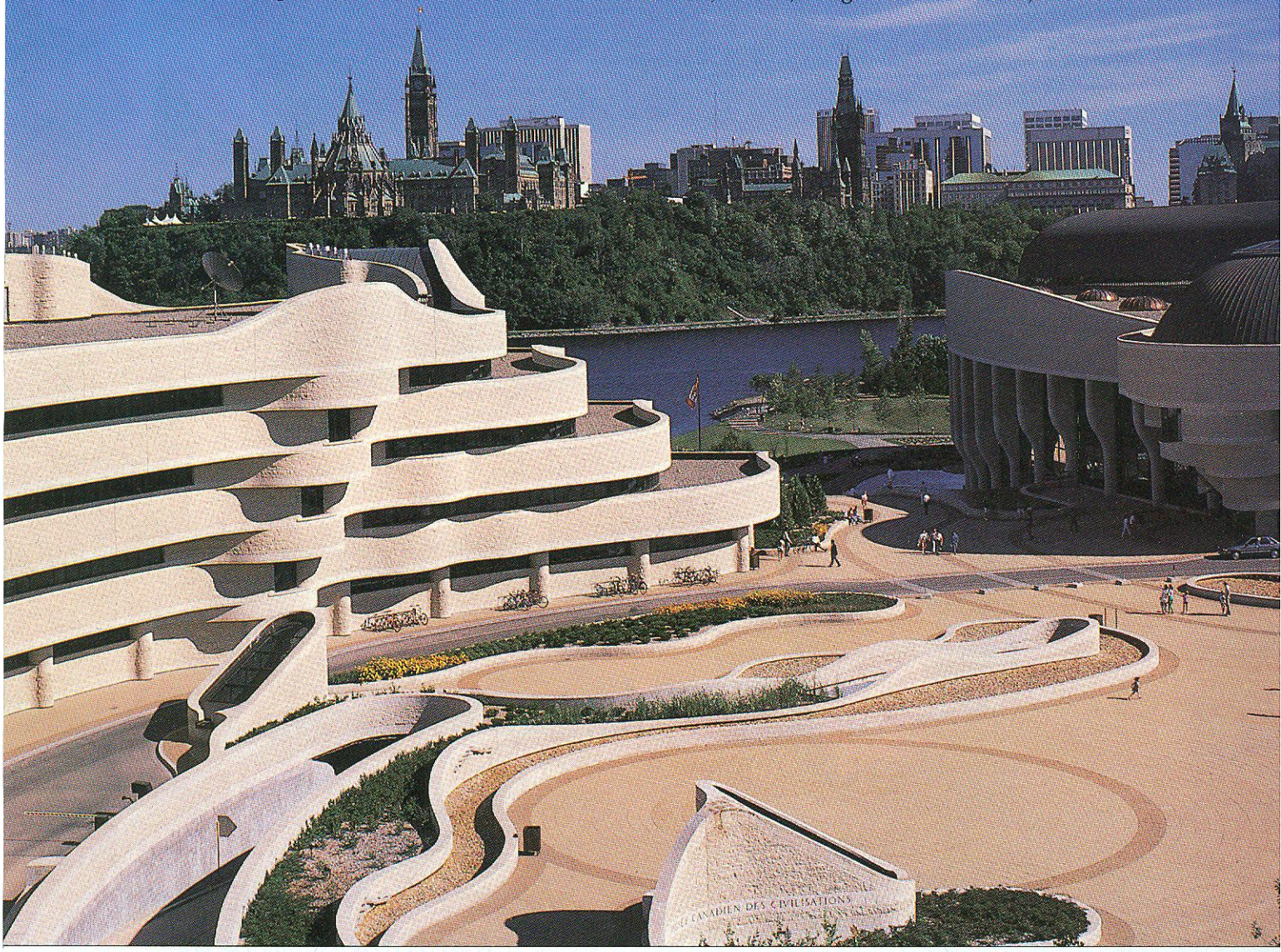
Canadian Museum of Civilization, Hull, Quebec

Canada's latest national monument is perhaps this country's most original architectural statement—a building with echoes from ancient geological formations to sophisticated computer graphics.

Douglas J. Cardinal Architect Limited/Tétreault, Parent, Languedoc et Associés, Inc.



"The museum will be a symbolic form. It will speak of the emergence of this continent, its forms sculptured by the winds, the rivers, the glaciers. It will speak of the emergence of man from the melting glaciers; of man and woman living in harmony with the forces of nature and evolving with them. It will show the way in which man first learned to cope with the environment, then mastered it and shaped it to the needs of his own goals and aspirations. . .

The building itself should truly aspire to be an artifact of our time, a celebration of man's evolution and achievement. It should point optimistically to the future, promising man's continued growth to a higher form of life, exploring not just this continent or planet but outer space as well. It should endeavour to be a spiritual act, and should demand from all those contributing to its design and construction the very best of their endeavours. —Douglas Cardinal, 1983

The museum (formerly, the National Museum of Man) is located on a 9.6-ha site in Hull, Quebec, on the Ottawa River. The site was an old boat landing and the site of the first plant built by E.B. Eddy. The form and undulations of the building were shaped by the need to keep free certain "view cones" delineated by the National Capital Commission. Hence, although the museum is one large, interconnected space at its lowest levels, it opens up above the rue Laurier level to expose an impressive view down to the river and across to Parliament Hill. There is free access to Parc Laurier and thence to the other parkways along the river.

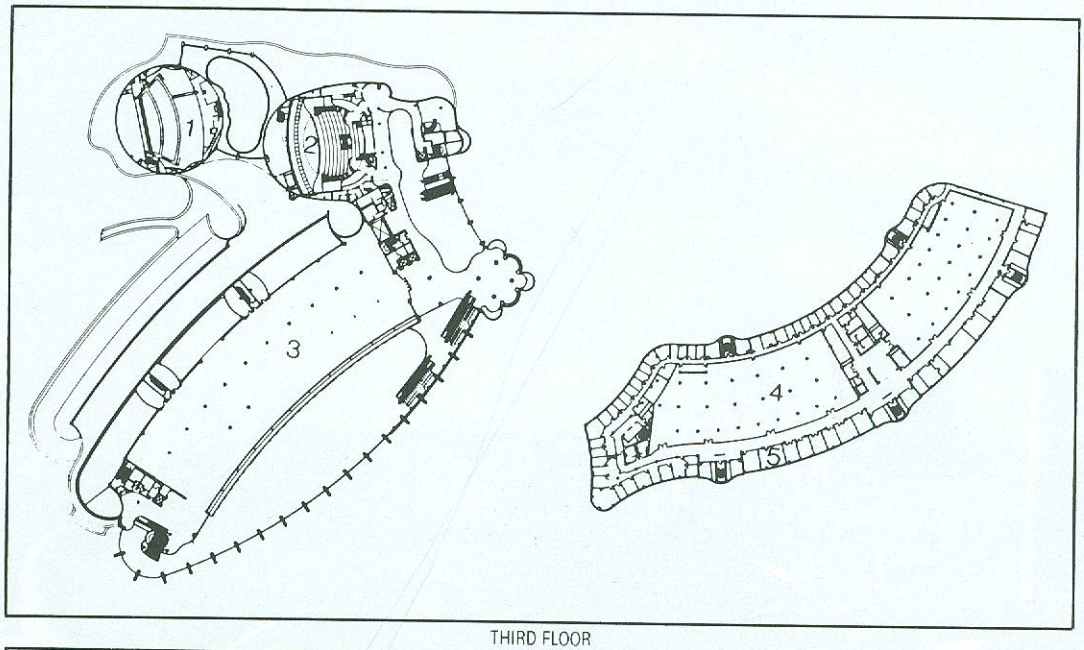
The building, approximately 100 000 m^2, faces Hull in a sweeping arc that embraces a large plaza and integrates the museum's landscape with activities on rue Laurier. To the north is the "Canadian Shield" curatorial wing, housing artifacts, conservation laboratories and administration offices. The "Glacier Wing" to the south houses the public exhibition halls. Its centrepiece is the Grand Hall, with 1,700 m^2 of space and a wall of glass 112 m x 15 m framing the view of Parliament Hill.

Just off the main plaza, near rue Laurier, is the 300-seat Cinéplus, the first in the world to have both a giant vertical Imax screen and a domed Omnimax screen, and a

510-seat live theatre auditorium. A computerized information resource centre, the Médiathèque, which allows access to Canada's entire museum resources and a restaurant are on the Ottawa side of the curatorial wing.

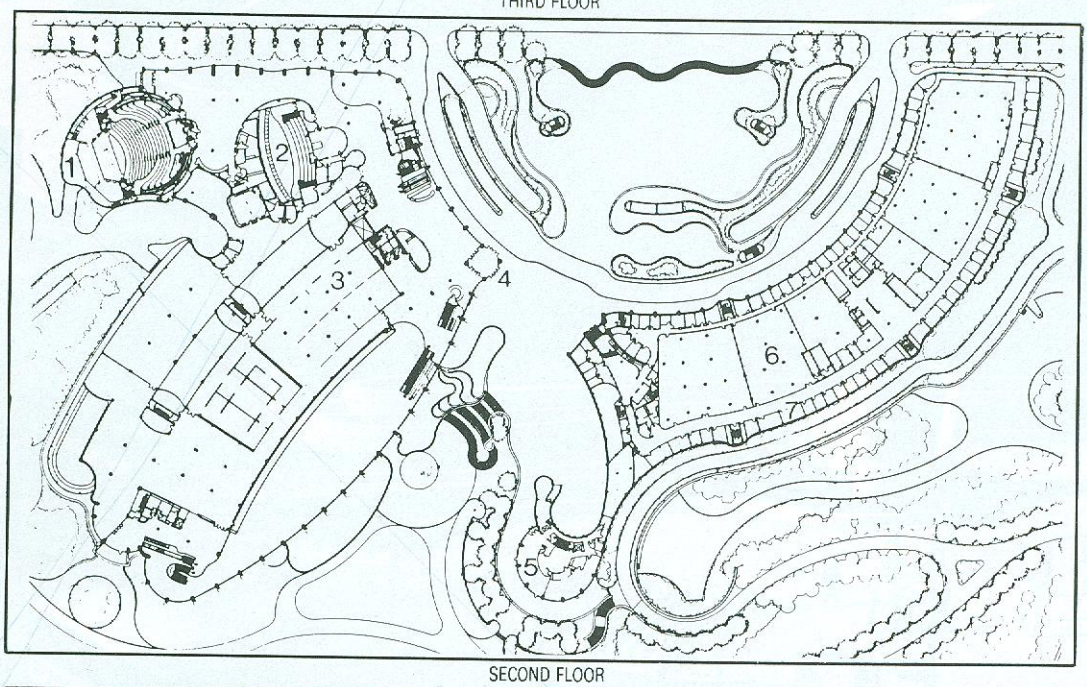
The six storeys of collection holdings in the curatorial wing are buried within an outer ring of offices so that delicate and valuable artifacts have a high degree of environmental and security protection, while offices and other "people spaces" enjoy an exterior location and views. The movement of very large objects and many visitors influenced internal layouts; spacious assembly and marshalling spaces are provided for up to 450 children at a time. Artifact routes 4-m wide can transport large objects from workshops to exhibit halls. The structure was divided into 12 buildings so that it can combat earthquake forces in spite of the large cantilevers and wide spans called for in the program. All design and drafting work was done on CAD software, a necessary strategy given the building's free-form geometry and the numerous offset calculations that were required. Over 30,000 drawings were produced. The building was also designed on the "fast track" method. Decisions about the internal functions were constantly being made during design, resulting in a much larger building area than first planned—and a larger budget.

The project was announced in 1983 jointly with plans for the new National Gallery (Parkin/Safdie Architects, *The Canadian Architect,* June 1988), by the Canada Museums Corporation, an organization set up by the Trudeau government in 1982 specifically to expedite these two projects. The corporation short-listed 12 principal design architects from an initially invited 80 firms, and asked each to describe its approach to the site and program of one of the projects. The short-list included Arthur Erickson, Raymond Moriyama, Barton Myers, Ron Thom and Eberhard Zeidler. The estimated budget for the museum then was $98 million. To date, total costs are $255 million, although only $182 million of that is for building, landscape and fees (under $145 per square foot) The Museum went into construction in 1983 and, apart from some exhibit halls, was opened in June of this year.



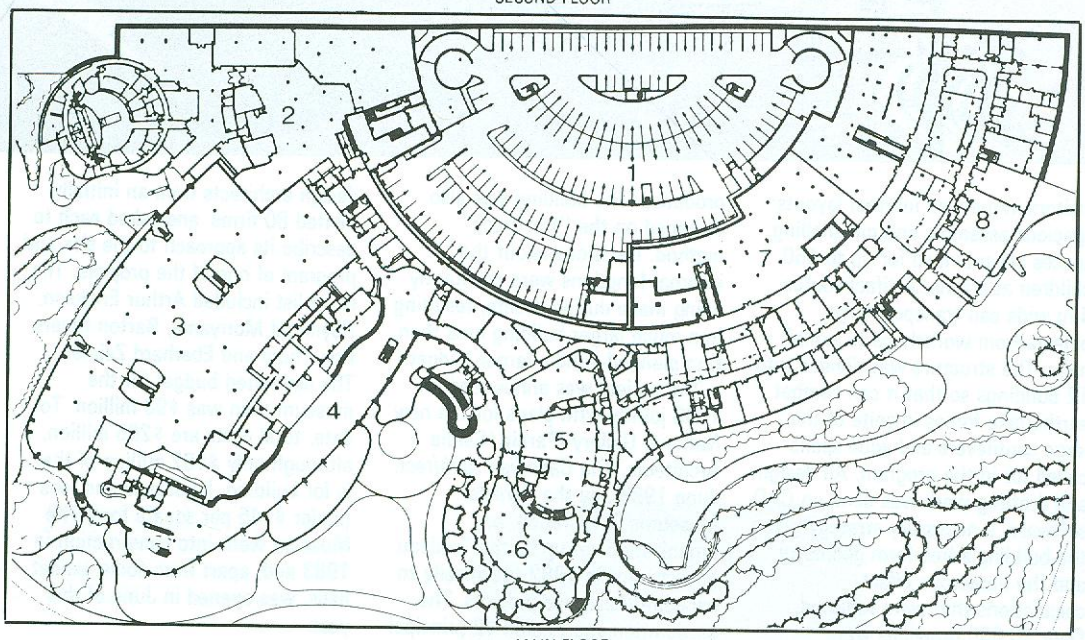
1. auditorium
2. Imax/Omnimax theatre
3. History Hall
4. collection holdings
5. offices

THIRD FLOOR



1. auditorium
2. Imax/Omnimax theatre
3. special exhibits
4. plaza and main entrance
5. restaurant
6. collection holdings
7. offices

SECOND FLOOR



1. underground parking
2. mechanical/electrical
3. exhibit halls
4. Grand Hall
5. museum resource centre
6. cafeteria
7. collection holdings
8. workshops

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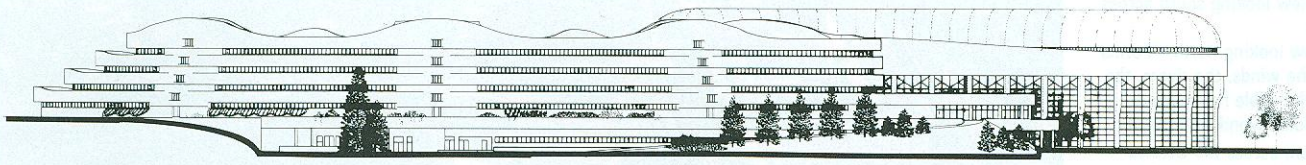
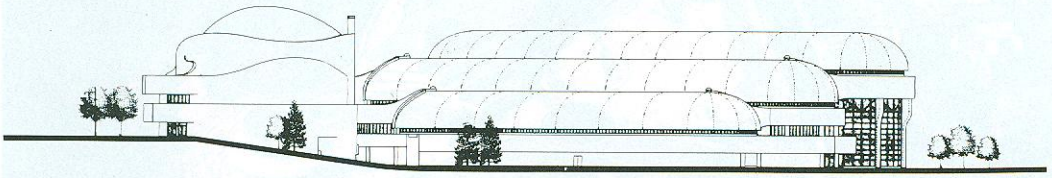
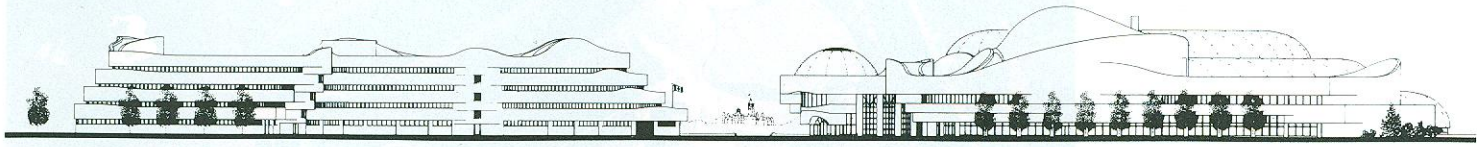
MAIN FLOOR



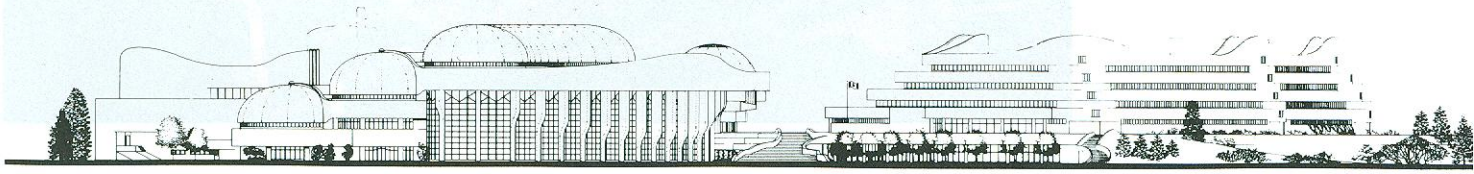
NORTH ELEVATION



SOUTH ELEVATION



WEST ELEVATION



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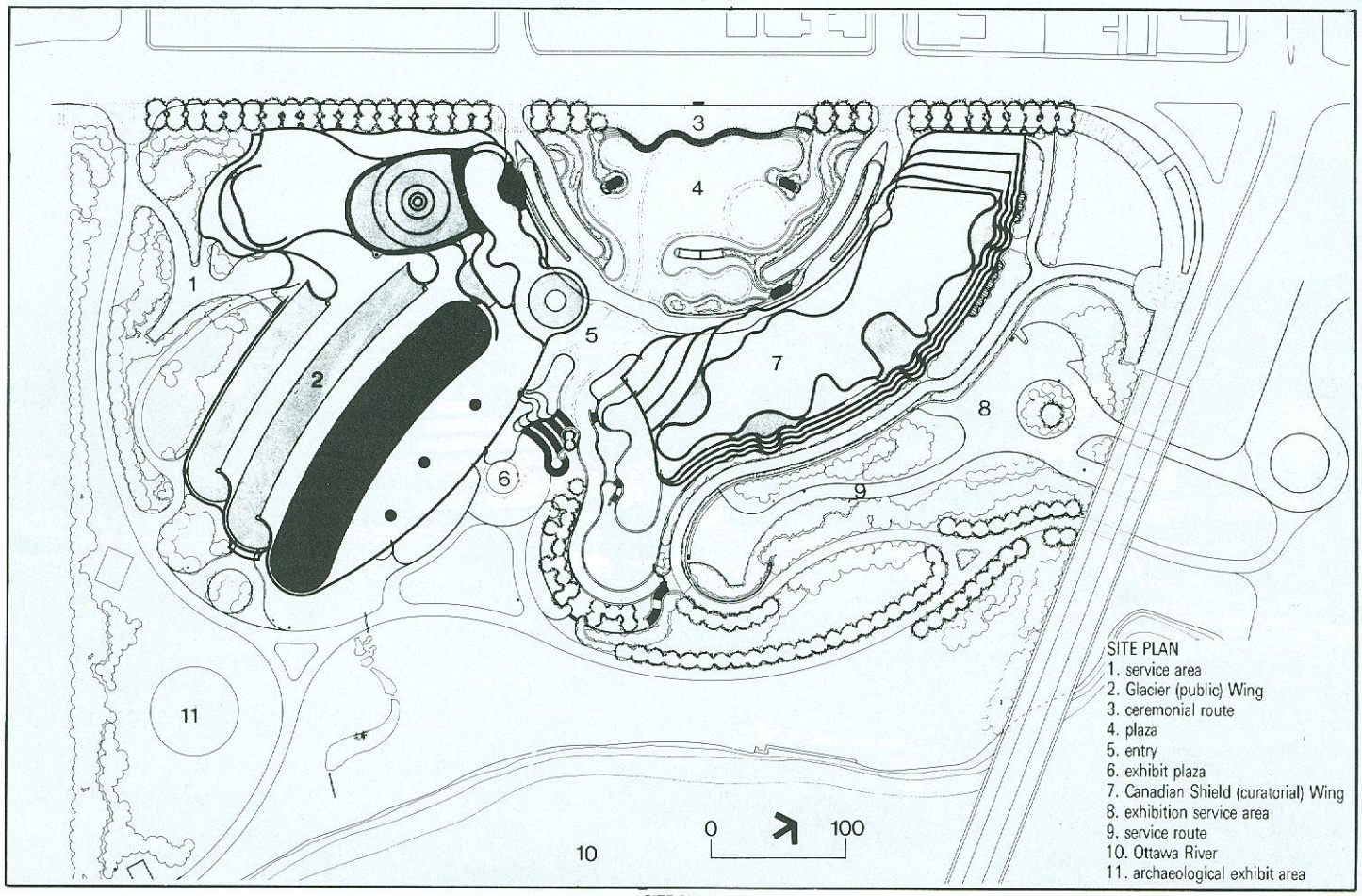

SITE PLAN

1 (lead page) View looking south across the main plaza.
2 Overhead view looking north. "Forms sculptured by the winds, the rivers, the glaciers" face the gable houses and street grid of Hull beyond Rue Laurier.
3 West elevation, across the Ottawa River. To the north is the curatorial "Canadian Shield" wing, to the south the public "Glacier Wing." Pedestrian access between the two wings leads from Laurier Street to parks along the river.

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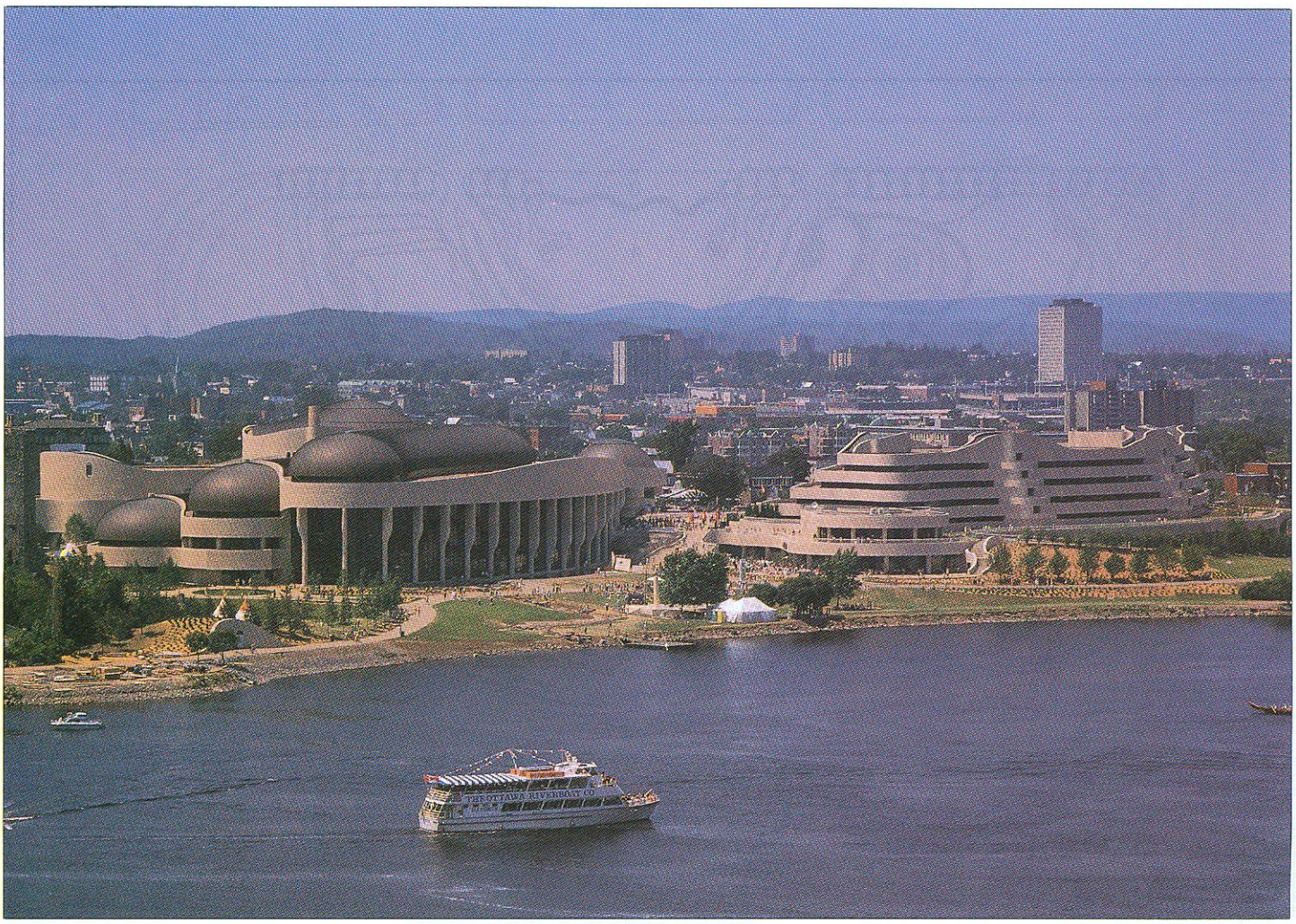
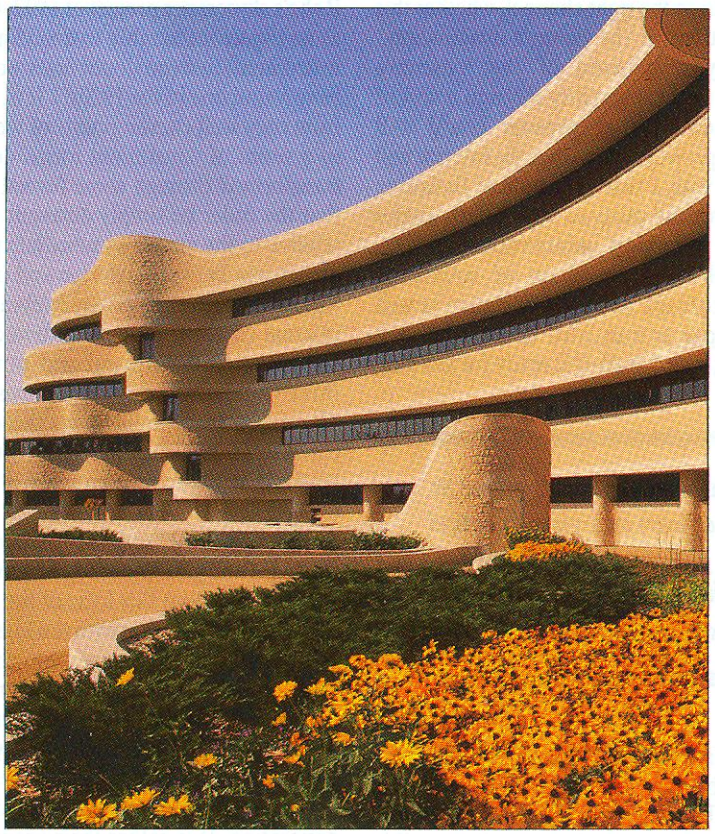


Critique: The Impossible Wave Train

Cardinal's fluid forms have a powerful, disquieting effect in the local neighbourhood, says the author, and they make an ideal medium for the illusions being created inside.

Martin Bressani



The Canadian Museum of Civilization is a sinuous exception to the continuous fabric of speculative buildings that make up the gargoylean face of our cities. Its stone surfaces, sparkling in golden ripples under the sun, contrast sharply with the grey stacks of offices that sprawl on the Hull side of the Ottawa river.

What Douglas Cardinal has given us is a building that, with undulating madness, takes in turn the appearance of a prehistoric geological landslide, an enclosed medieval city, or a Miami parking lot; it has the magic of a Gaudian dream or the technological organicity of a Star Wars battleship. We should not hurry to catch the imagery which folds and unfolds. Like the architect himself, who has shown a clever resilience to any specific interpretation of his *oper magnus* by welcoming them all with equal affability, we should freely decipher the fossil-rich stone and listen openly to the reverberating presence of the building.

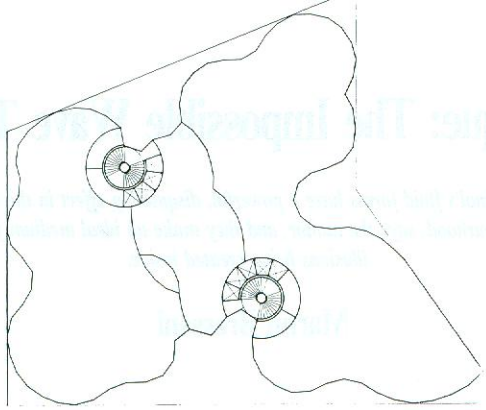
The museum engages the viewer not so much at the symbolic level as at the imaginative one; the vitality of the imagination, rather than the recognition of a set of stable and shared cultural icons, supplements the experience of the building. Indeed, it is when the building betrays too specific symbolic intentions that it fails, as in the use of Canadian geological features to name the two opposite wings ("Canadian Shield" and "Glacier") or, more obviously, the axial development of the front plaza in line with the Parliament buildings across the river. These concessions to context detract from the true source of the building's power. After all, who would dare defend this museum on the basis of its contextualism? Coiled on a site too small for its demanding morphology, it is sublimely indifferent to the few remaining areas of the old Hull. The ghostly carcass of the "vertical digester tower" (abandoned by Eddy's pulp and paper plant), which directly abuts the southeast tip of the museum wing, was also forgotten in the site development.

Far from condemning the monster's rebellious posture, I suggest that there lies the source of its seduction. Walking along in the old neighbourhood, I started to understand why I am quite fascinated by Cardinal's museum. Closing the horizon of streets such as St-Jean-Baptiste and Papineau, the impossible wave train becomes quasi-hallucinatory when seen in contrast to the alignment of the small gable houses. One only has to turn around and glance at the new crop of simulated gables crowning condominium towers to grasp the museum's potency. Through a strange paradox, the alien presence has left the neighbouring houses in an undisturbed stillness. In contrast to the "meaningful" condos, the museum doesn't try to inflate these modest dwellings by raising their gable roofs to a towering pseudo-symbol.

There's no need to stroll around the block to feel the building's prodigious power of estrangement. Inside the museum the visitor is led from freshly-painted West Coast Indian villages, to brand new early French regime and Victorian English towns. Crowning all such simulations is the momentous Imax-Omnimax theatre, under which dome—somehow reminiscent of Boullée's cenotaph for Newton—the museum experience is finally consummated; the consenting museum-goer is transported into the Imperial China of twenty-three centuries ago (the current production being screened). This is not effected without a word of caution; our courteous guide warns that should such hyperbolic simulation make us dizzy, a brief shutting of the eyes, not to say a brief introspective gathering of the self, will remedy the situation. Under the cosmic dome, we lose our bearings, ready to forgo all individuality to enter the space of the image. But perhaps this is the insidious condition of any simulation.

Walking through the "museum of the global village," as its director, George MacDonald, calls it, visitors are constantly pressed to lose themselves in the spectacle at hand. The sterilized visions of portions of Canadian history from which all blood and sweat have been properly obliterated offer a theatricality which calls for applause and amnesia.

Cardinal has served with remarkable reverence the museographic strategy of endless simulation. Excluding the "Grand Hall," whose too-clear geometry and breath-taking dimensions overwhelm the reconstructed West Coast village and totem poles, the constant dynamism and endless movement of Cardinal's curves leave the viewer waiting, as it were, for moments of simulation. The unsettling absence of an easy-to-grasp geometry prepares one for the rapid succession of stage sets which are accepted at face value. Like the television set, whose screen shows curvilinear distortions before it is syntonized, the Museum



Mies van der Rohe's glass skyscraper project plan, 1920-21

of Civilization is waiting to be tuned in to the right channel, whether this is provided by MacDonald's simulations or the viewer's imagination.

The endlessly flowing white gypsum board of the museum's interior–all joints obliterated–adds to the instability through a sort of dematerialization. Apparently, much of that gypsum board will eventually serve as a screen for video projections, so that the interior will literally be disembodied and coated with a rich multitude of flickering images. The curvilinear surface serves the purpose well. Sharp angles would have had too real a presence to support uninterrupted illusion.

Remember that Cardinal himself is a champion of simulating technologies. His use of computers through all stages of design is well known. The most sophisticated equipment translated his pencil sketch into numeric phraseology, stabilizing it and making it ready for working drawings. Architects have often dreaded that the invasion of the computer will lead to uniformity in building form. Cardinal has shown that the opposite can also be true. The computer allows for the most glaring individuality with a minimum of sweat. In fact, it makes possible construction hitherto inconceivable through normal means. But in the computerized space, banality and eccentricity are two sides of the same coin, two aspects of what Jean Baudrillard in *Simulations*[1] calls the hyperreal–the real as filtered through reproduction technology. Pessimistically, Baudrillard makes this displacement an inherent characteristic of modern vision.

"The hollowness of Cardinal's architecture is not without its enticement. The whole building appears as a gigantic optical distortion where the formless finds an odd stability. No specific proportions, no beginning, no end directs our appreciation of the endlessly flowing curvilinear."

What distinguishes Cardinal's use of the computer is that he never allows its presence to be forgotten. It is hard, for instance, not to think of computer-produced shapes when looking at the exterior of the north office wing. If it remotely evokes the cliff strata across the river, it does so only through the analytic gridding of modern instrumentation. The wing recalls more the contour lines of modern topographical maps than the geological formation itself. Seemingly unwilling to give symbolic representation to natural forms, Cardinal gives them that of a topographical engineer. It is a plotting of an absent object. An empty glove.

The hollowness of Cardinal's architecture is not without its enticement. The whole building appears as a gigantic optical distortion where the formless finds an odd stability. No specific proportions, no beginning, no end directs our appreciation of the endlessly flowing curvilinear. The anthropomorphism of the entrance pavilion is almost too strong a focal point for such supple building. Like Mies van der Rohe's skyscraper project of 1922, Cardinal wishes his museum to stand as an object intractable to decoding by formal analysis without special instrumentation (no doubt Mies would have used a computer if he could have found one in the 1920s[2]). It is, for example, impossible–or possible from only well chosen points of view–to reduce the whole composition to a series of constituent forms derived from an internal structure or transformed through some formal operations. Cardinal insists, rather, that the order be simply emanent from the surface itself and therefore relative to the viewer's immediate position in the building. The curious dichotomy between exterior and interior is an instance of this surface logic. Apart from in certain celebrated parts, such as the Grand Hall, the internal cladding of gypsum board follows a logic of its own, with no scruple as to the amount and expense of steel used for framing. The Imax-Omnimax theatre is the most vivid example of the double logic. The dome so prominent on the exterior is only an analogue of the concave screen; they are different in shape, axial position, form and material. Between the two spreads the most elaborately baroque display of steel.

The superficial "stage-set" experience of the inside prevents one from gaining a unifying knowledge that would tie the building together. What is satisfying about this logic of the surface is the absence of an idealized realm. Cardinal shares with the Mies of the 1920s a dislike for *a priori* and reasoned order. He plunges into chaos to retrieve a world as unruled as possible by an overarching order. Paradoxically, this unconciliatory disposition accounts for a liberating vitality.

We may regret that such fluidity only serves a museum strategy that constantly seeks to counteract the instable world set by Cardinal. It is not so much the obsessive use of simulation devices that may be found desiccating. It is rather their use in the service of a most unifying and sterile vision of history. In the end, far from providing a place of memory, the museum's exhibition of pre-digested images serves only to erode the past by leaving the viewer in an aseptic torpor. Cardinal's architecture may be open to such a play, but it also warns us that what we are shown is but a pleasant distortion, and that our dream house is still ours to build.

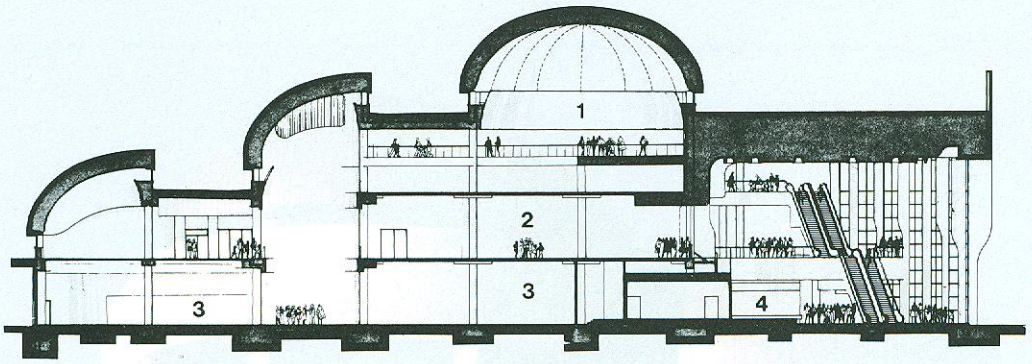
[1] Jean Baudrillard, *Simulations,* New York: Semiotext(e) Inc., 1983.
[2] See K. Michael Hays, "Critical Architecture–Between Culture and Form," *Perspecta 21,* 1984, pp. 14-30.

Martin Bressani is an assistant professor of architecture at Carleton University School of Architecture. *He wishes to acknowledge the help of Claude Jean in the writing of this article.*

4 View of public exhibition halls from south.
5 View from inside the Grand Hall across exhibit plaza, north towards steps to main entry.

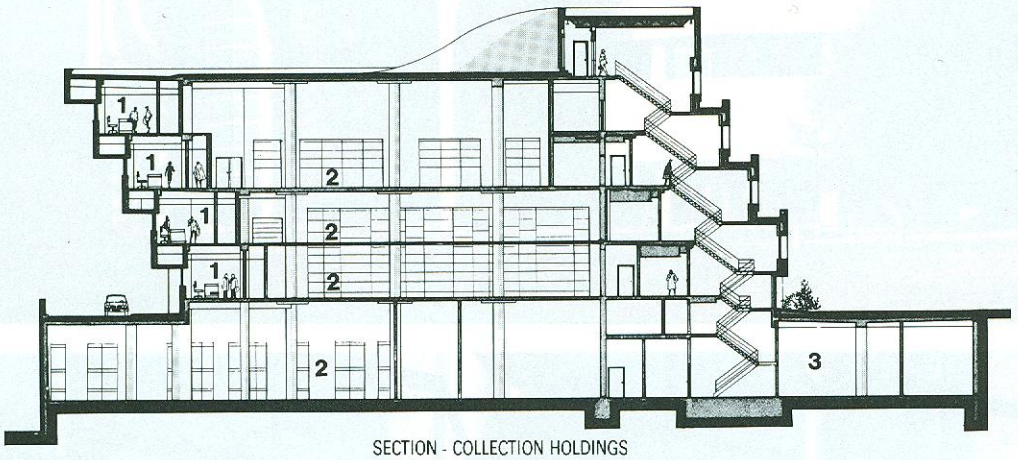
4

5



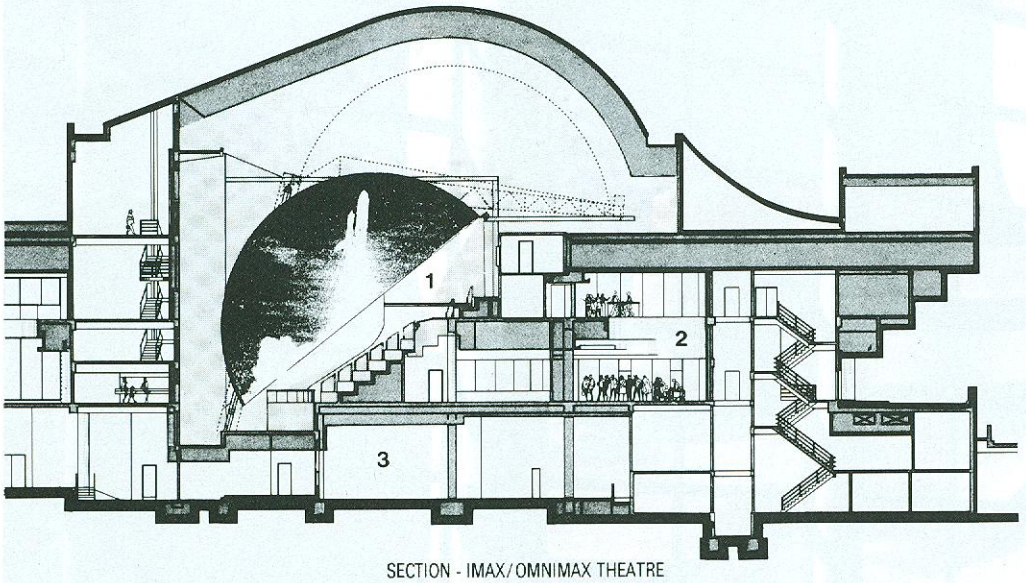
SECTION - EXHIBIT HALLS

1. History Hall
2. special exhibit
3. exhibit halls
4. Grand Hall



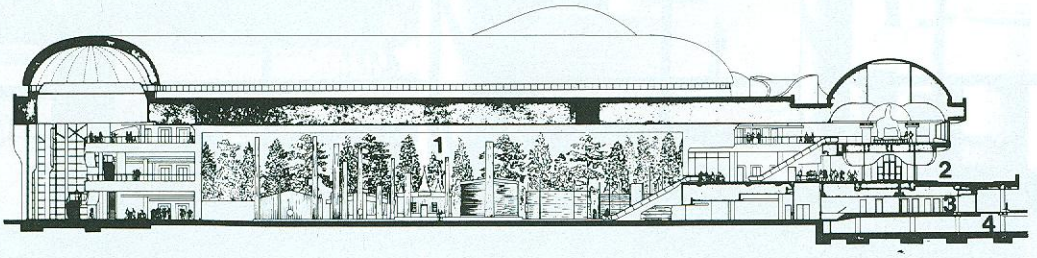
SECTION - COLLECTION HOLDINGS

1. offices
2. collection holdings
3. workshops



SECTION - IMAX/OMNIMAX THEATRE

1. Imax/Omnimax theatre
2. lobbies
3. mechanical/electrical

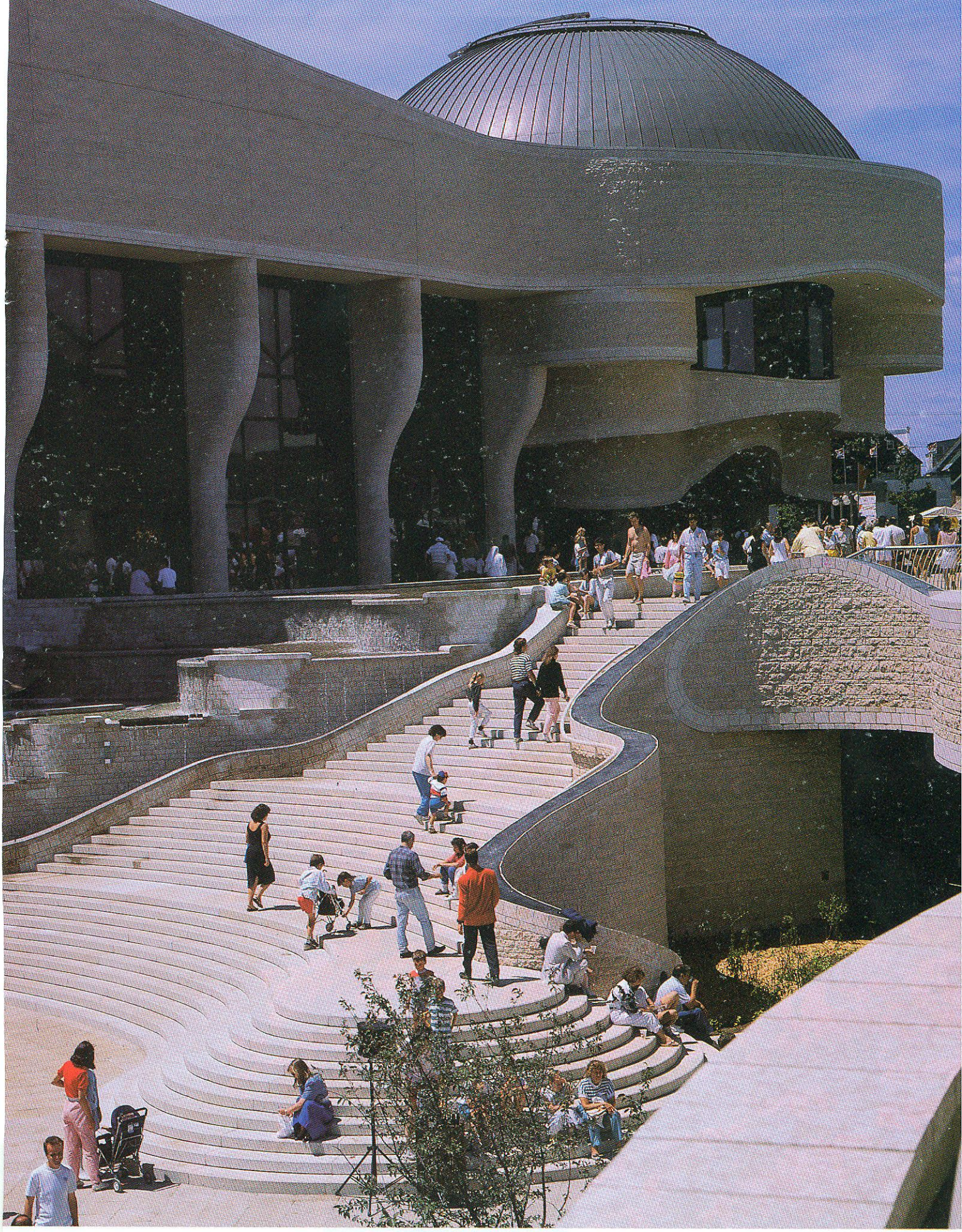


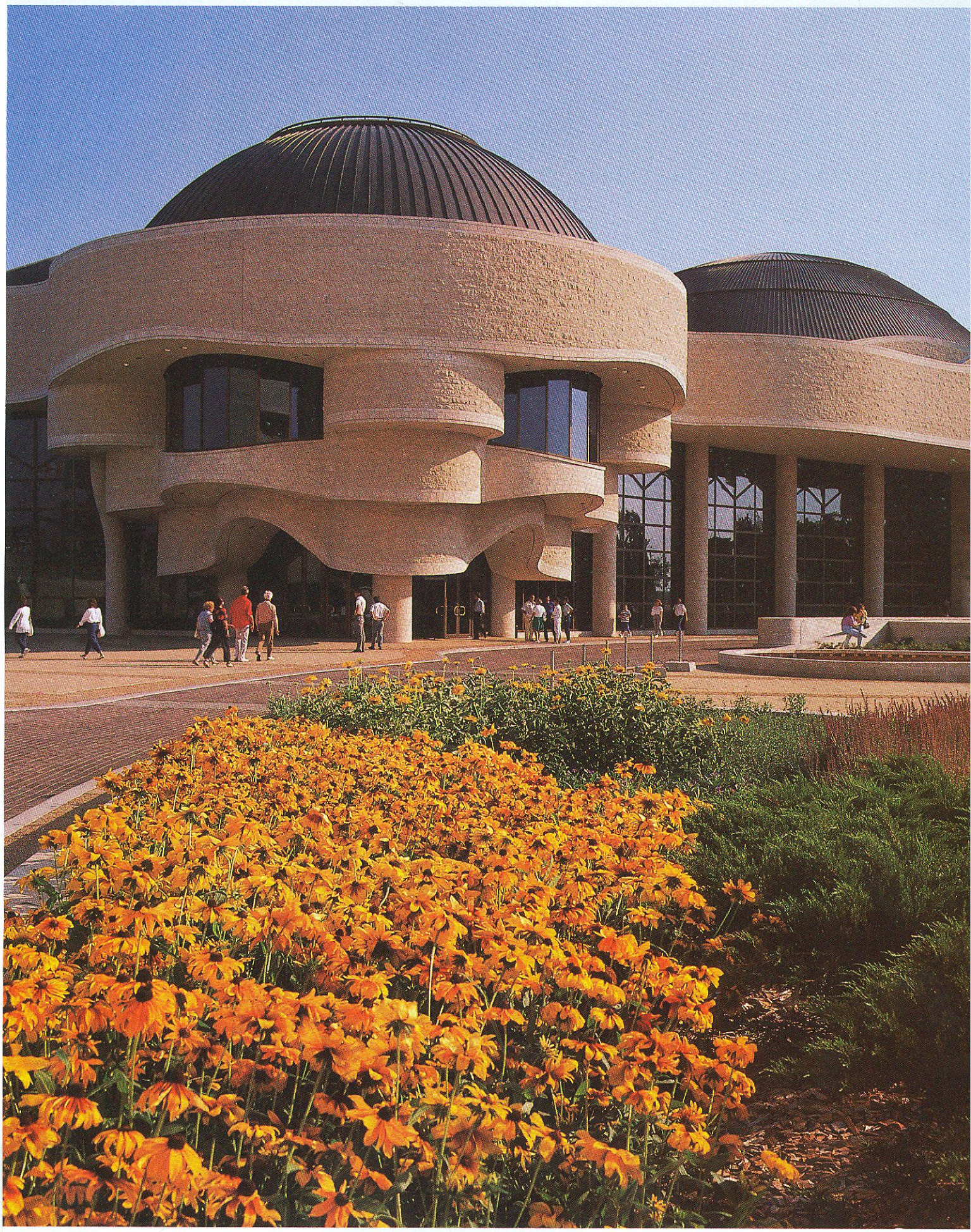
1. Grand Hall & West Coast exhibit
2. main entrance

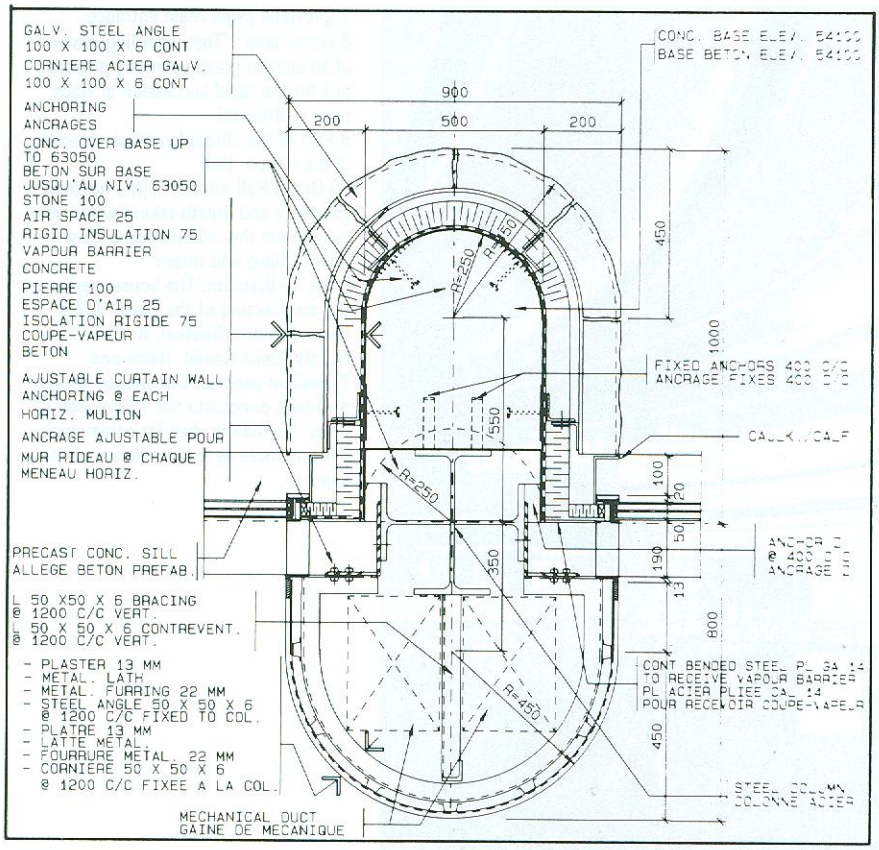
SECTION - GRAND HALL

3. group reception
4. underground parking

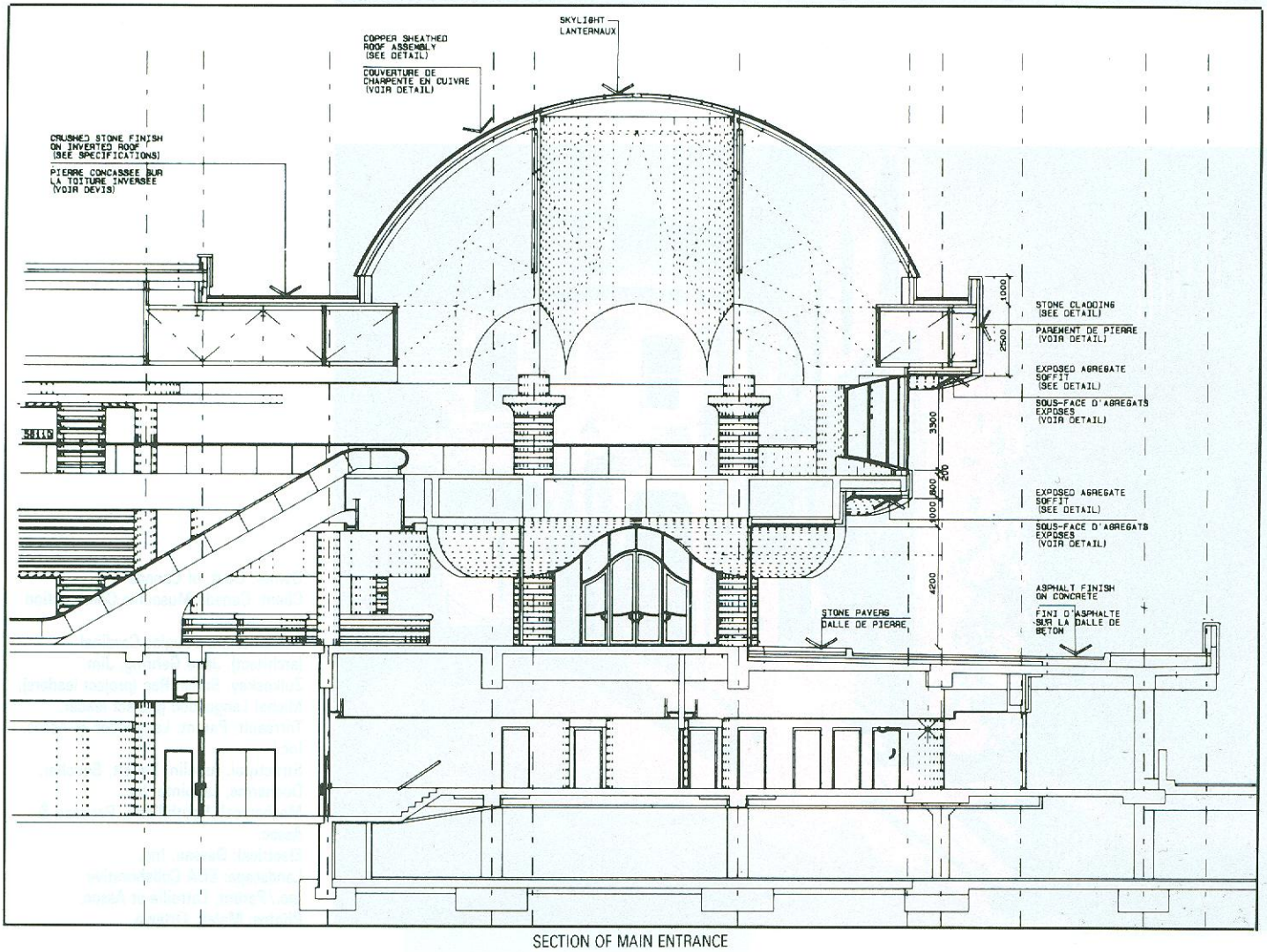
6 Stair approaching the main entry and plaza between the wings. The Manitoba Tyndall limestone, 10-20 cm thick, that was used on the exterior is over 100 million years old and contains many fossils. Saw-cut edges and bands help to articulate the building forms. Every piece of seamed copper roof had to be individually sized and dimensioned (the building has more copper on it than any other in the world).







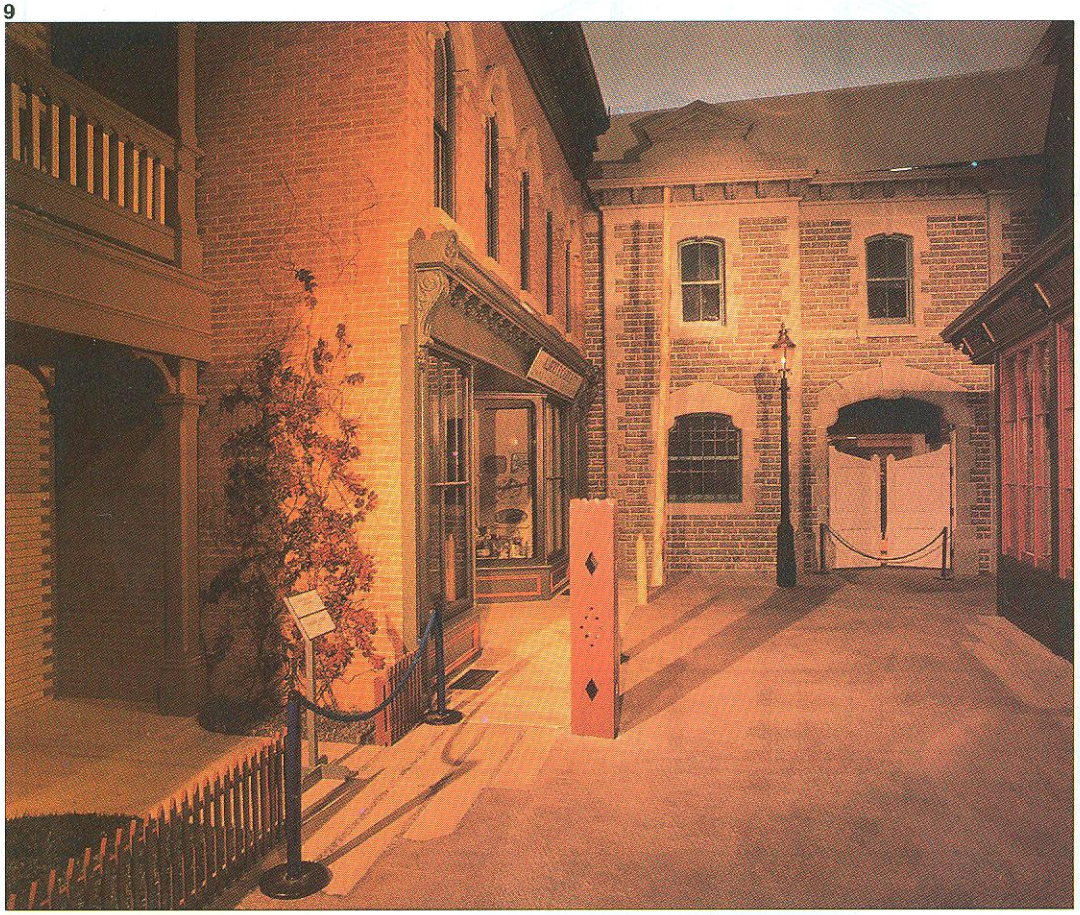
PLAN-DETAIL OF COLUMN



SECTION OF MAIN ENTRANCE

8

9



7 (previous page) Main entrance.
8 Lobby area. "The unsettling absence of an easy-to-grasp geometry prepares one for the rapid succession of stage sets."—Bressani.
9 Part of the chronological streetscape in the History Hall.
10 Grand Hall interior. "(Its) too-clear geometry and breath-taking dimensions overwhelm the reconstructed West Coast village and totem poles."—Bressani. The houses represent the architecture of the Coast Salish, Nuchaahnulth (Nootka), Kwakiutl, Nuxalk (Bella Coola), Haida and Tsimshian peoples. Oar-shaped vertical members punctuate the 112-m wall of glass. The hall is used for ceremonial performances as well as as an exhibit space.

Owner: Govt. of Canada
Client: Canada Museums Construction Corporation
Design team: Douglas Cardinal (architect); Jane Gehring, Jim Zulkoskey, Satish Rao (project leaders); Michel Languedoc (project leader, Tétreault, Parent, Languedoc et Assoc. Inc.)
Structural: Asselin, Benoit, Boucher, Ducharme, Lapointe, Inc.
Mechanical: Bouthillette, Parizeau & Assoc.
Electrical: Dessau, Inc.
Landscape: EDA Collaborative Inc./Parent, Latreille et Assoc.
Photos: Malak, Ottawa