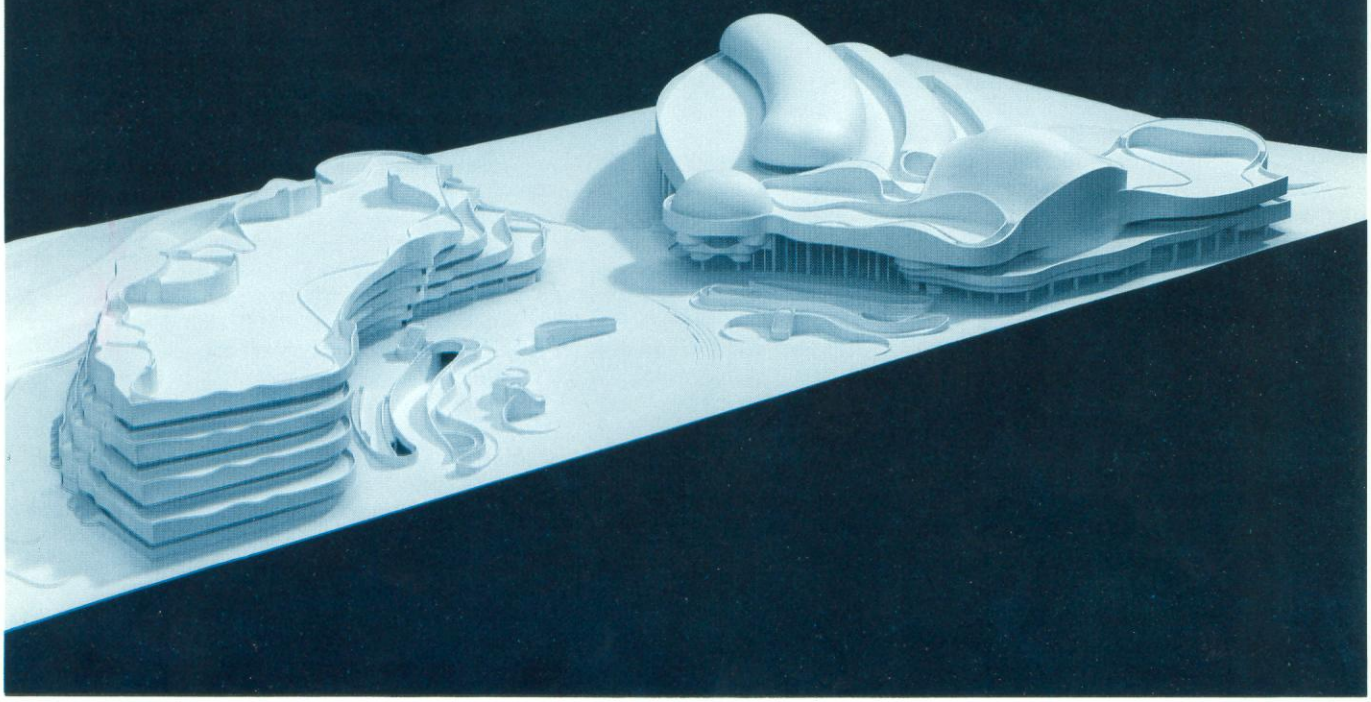
An interview with Douglas Cardinal

"THE NATIONAL MUSEUM OF MAN"

Douglas Cardinal has been called the "Frank Lloyd Wright" of Canada. This comparison does not begin to describe the unique artistry of this native of Alberta. When Douglas Cardinal's current project "The National Museum of Man" is completed, his genius will touch the lives of all Canadians. The Museum of Man will become a national monument; it will house the vast archaeological, ethnographic, folk art and history collections of Canada. Douglas Cardinal will surely achieve international acclaim with this design. The design achieves a new threshold of free form and geometric beauty. But, this feat is not unusual for a man who is used to breaking down all barriers to achieve and maintain the artistic integrity of his designs. This interview will bring alive the beauty and challenge of this project.



Mr. Cardinal, how were you selected to design the National Museum of Man?

The selection process started with a close scrutinizing of over 80 architectural firms. This list was reduced to 12 finalists; each of the finalists was required to submit a design concept and I won the competition. The Cabinet approved the conceptual designs in November 1983; the construction schedule sets a target date of completion by December 1987.

Did you have a special theme to guide your design concepts?

The museum will be a symbolic form. It will speak of the emergence of this continent, its form sculptured by the winds, the rivers, the glaciers. It will speak of the emergence of man. The building itself would truly aspire to be an artifact of our time, a celebration of man's evolution and achievement.

I look at Canada as a mosaic of people. The United States is a melting pot but we remain a mosaic with the preservation of many cultures. Our people protect their identity but they will form part of the Canadian nation. The museum will bring our people closer together because it is a historical center to teach us about our past as we move to the future.

The chosen site could not be more beautiful. The complex will be built in Parc Laurier by the Ottawa River. It has a commanding view of the Parliament Buildings. This site was used as an encampment by Indians and explorers in the eighteenth and nineteenth centuries. Extensive site development and landscaping will enhance the beauty of this unique location.

The model of the Museum speaks for itself, but how do you describe the scope of the work?

We have already completed over 15,000 drawings for this project. This design could never have been attempted without a CAD system; the time and cost would have been prohibitive. All design and drafting work has been processed by our CAD system, from preliminary sketches and schematics, to the development of designs, to the final contract documents. Throughout this entire commission of thousands of drawings, we have never used a drawing board.

This design is one of the largest cultural undertakings in the history of Canada. Initially, we were given four large volumes, about the size of New York telephone books, listing the requirements for the museum. Then, we started translating these requirements to working sketches. We created three more volumes in finalizing the requirements. Remember, this museum will house the nations most important treasures; the security and environmental control must encompass the entire complex of 750,000 square feet and its more than 600 doors.

How do you begin a project of this magnitude?

I wish that I could say that it was just an architectural challenge, but we had to orchestrate, conduct and coordinate the work of countless parties. The Prime Ministers and their cabinets were personally involved. We had to work with

and/or gain the approval of many agencies: National Museums Corporation, Canadian Museums Construction Corporation, Canadian Conservation Institute, Department of Environment, Canada Public Works, etc. And let's not forget the army of engineers and consultants: structural, electrical, mechanical, acoustical, special lighting, theatre consultants, microclimatic specialists, laboratory consultants, landscape architects, traffic consultants, etc., etc., etc..

Needless to say, it was exhausting to compile and control all of the information required by these parties. Fortunately, we developed a system on our word processors. Beginning with the first day of work, we had a computerized database to control all of our design and reporting activities. Again, this project would have been impossible without a total commitment to CAD and a computerized database. The free form of this project requires the precise control of each element and its geometric position, properties and relationships.

Can you walk us through the Museum and highlight its unique features?

As you walk through the building, all artifacts will be arranged in their historical order. You can project yourself back in time to any period, and it will become a living experience. One of the largest galleries, 80 feet wide and 350 feet long, will contain a complete street of houses; this street will be a complete trip across Canada; from the early beginning of the East coast, to the Prairies, to the West Coast. The museum has a magnificent Grand Hall with glass curtain walls providing a breath-taking view of the Parliament Buildings. This hall is 400 feet long and it will probably house a West Coast exhibit with large totems and the monumental quality of that era.

A special Children's Museum will contain many artifacts and exhibits that children can relate to; the children can touch a variety of replicas for a vivid experience and understanding of the artifacts. The museum provides two large theatres: The Omnimax theatre has a huge screen and it also has a dome that can be electronically removed for special projects. The Imax theatre provides another unique screen with a height equivalent to a 5 to 6 story building. The screen is slightly curved and the audience is very close to the screen to absorb their peripheral vision. The frame of the projector is very large, 3 x 4 inches, and the reels are four feet in diameter. It provides an unbelievable clarity and visual experience. Just the cost of the projectors alone is estimated to be a couple of million dollars. The Imax was developed in Canada and is one of very few in operation in North America.

The museum and its halls capture the history, the multi-cultural heritage and a complete representation of its native people. A special gallery was designed to demonstrate how the museum works; an overview gallery will provide an introduction to all of the collections and exhibits. The Resource Center provides a computerized library with a precise catalogue of all artifacts, networked with museums across Canada. Scientists, teachers, students and the general public can consult books, tapes, graphic illustrations and other sources of information about the life and history of man in Canada.

The museum provides a special exhibition gallery for large touring exhibits; correspondingly, the museum will maintain an active traveling and educational exhibit program throughout Canada and exchange programs with other countries. The museum will have excellent facilities to promote the coordinate flow of all services: service and information stations, guides and special tours, security stations, administrative offices, research and conservation labs, a restaurant and cafeteria, inviting spaces for rest and relaxation, etc.

Are you ready to highlight some of the design challenges?

The precise climatic control of the Museum requires the care of an intensive care hospital. A complete vapor barrier had to be developed within each wall and insulation to seal off the internal vapor, humidity and temperatures from outside conditions.

The free form of the geometry and the corresponding offset calculations and layout requirements in the field could not have been achieved with the technology of yesterday. The normal drawing boards could not do the job; all of our sweeping curves and forms would require a compass point in the next room or province.

Our CAD system produces a precise mathematical model with total control of the design process. We quickly discovered any errors in the original land surveys and field control surveys. We can zoom in to any part of the site and find the smallest of errors; we no longer think in terms of "millimeter accuracy"; we have "microscopic precision" at all layers of our design. And, our layers of design always match. Our CAD system automatically processes the thousands of coordinates required for this type of geometry. In seconds and minutes we can achieve man-years of calculations. This freedom of expression is clearly evident throughout this project.

Mr. Cardinal, thank you. You have truly mastered the ability to change the environment without disrupting its beauty and harmony.