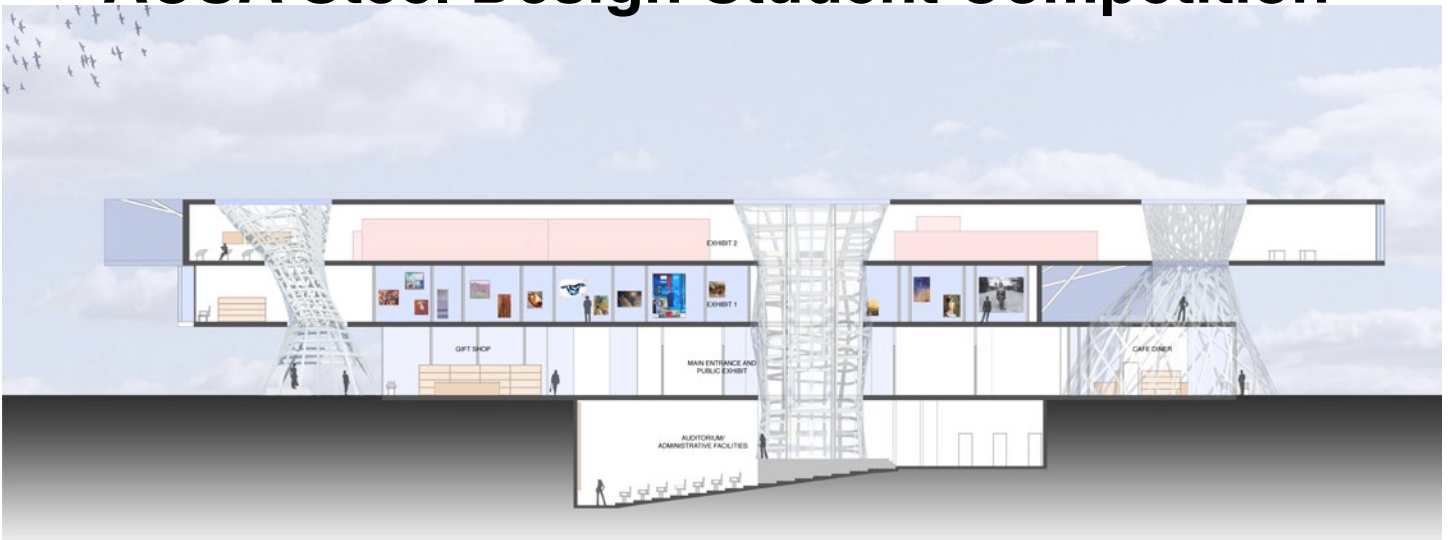


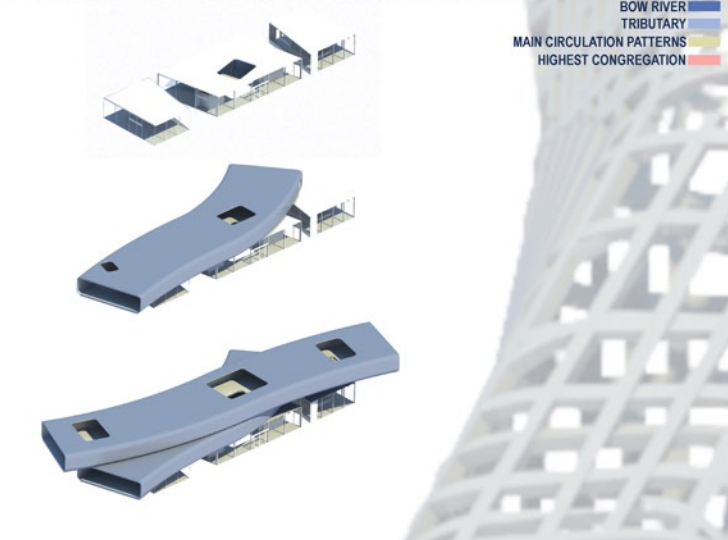
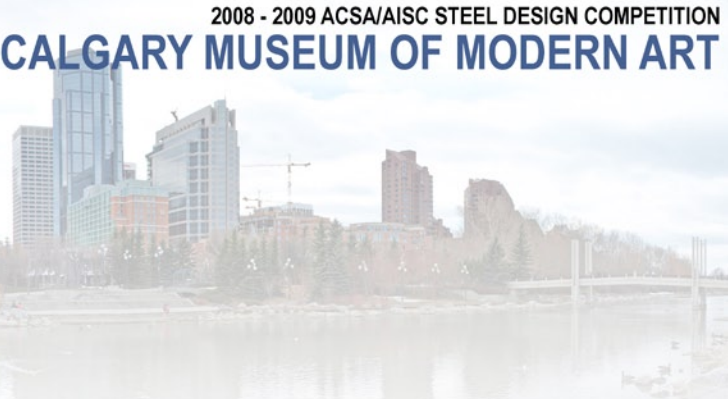
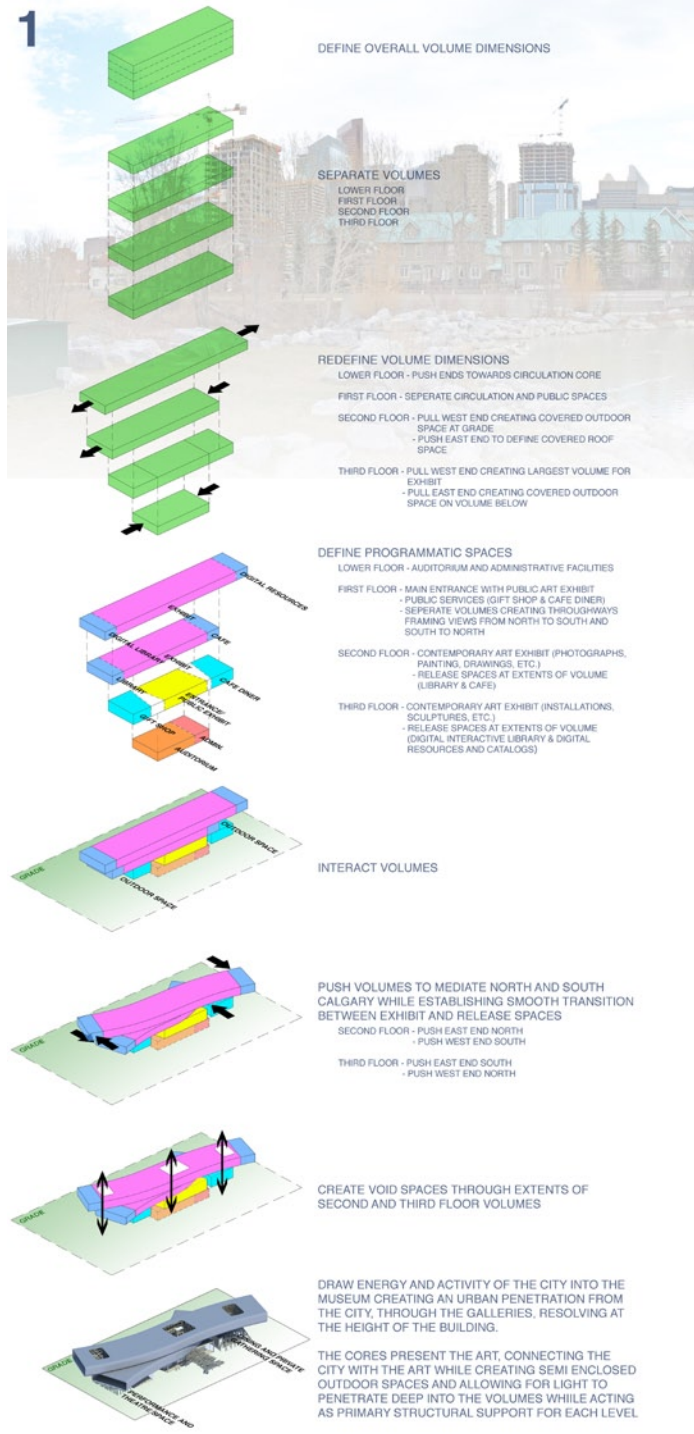
ACSA Steel Design Student Competition



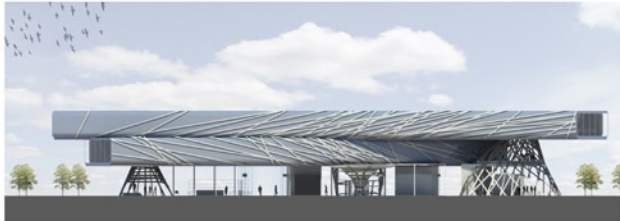
*OPEN Category: Calgary Museum of Modern Art
Mathew Winter
University of Waterloo School of Architecture
Competition Submitted May 6th, 2009*

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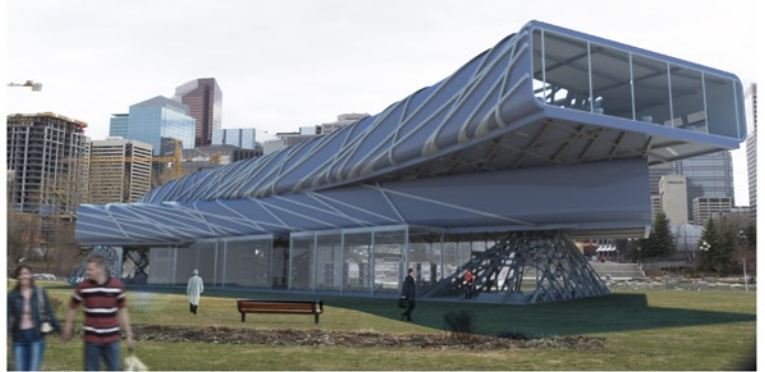
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CALGARY MUSEUM OF MODERN ART



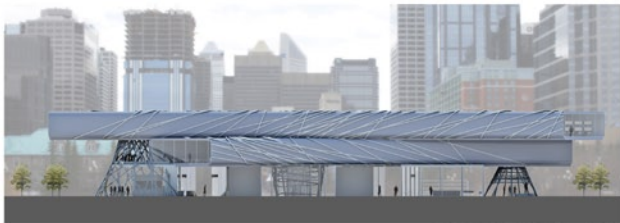
2008 - 2009 ACSA/AISC STEEL DESIGN COMPETITION
CALGARY MUSEUM OF MODERN ART



SOUTH ELEVATION
1:500



EXTERIOR PERSPECTIVE



NORTH ELEVATION
1:500



INTERIOR PERSPECTIVE

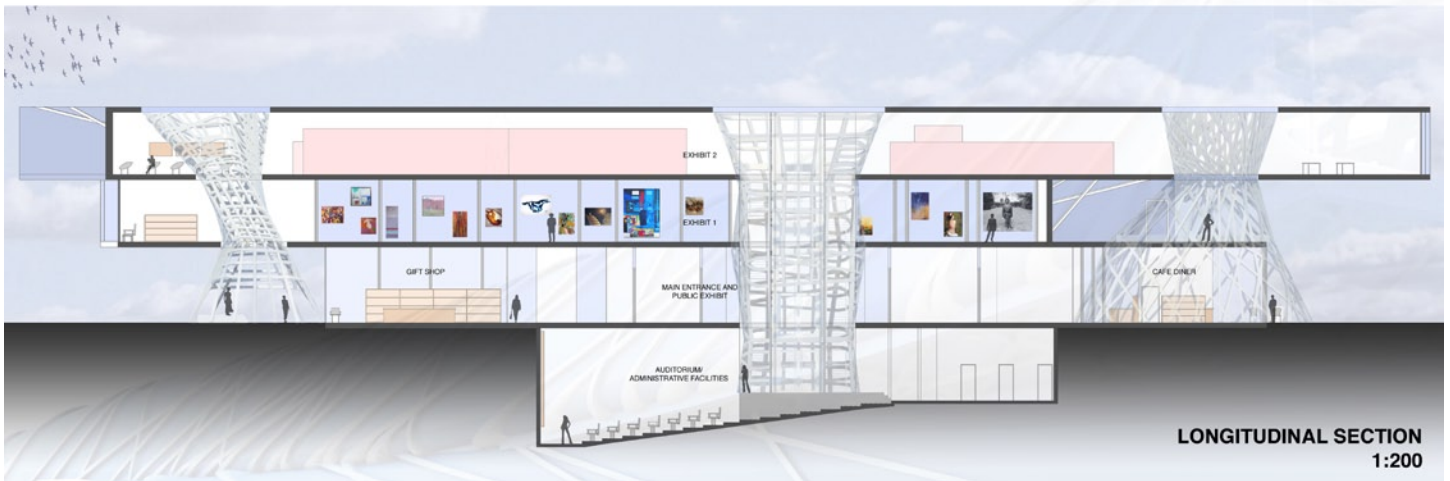
EXHIBITS ARRANGED TO ALLOW FOR A NON LINEAR EXPLORATION OF THE DISPLAYED ART



EAST ELEVATION
1:500



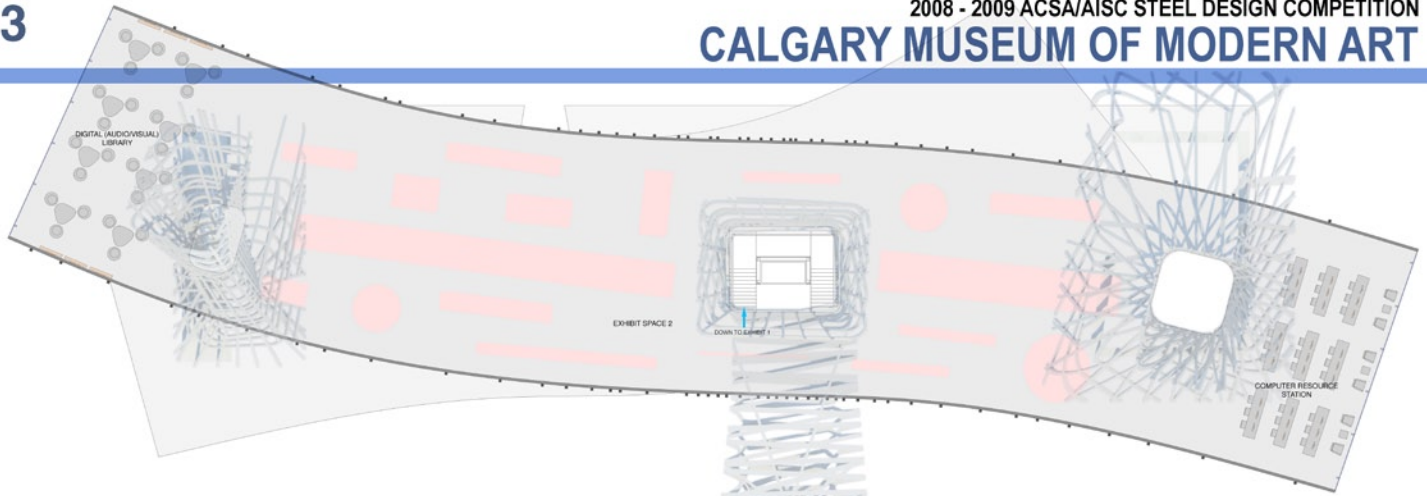
WEST ELEVATION
1:500



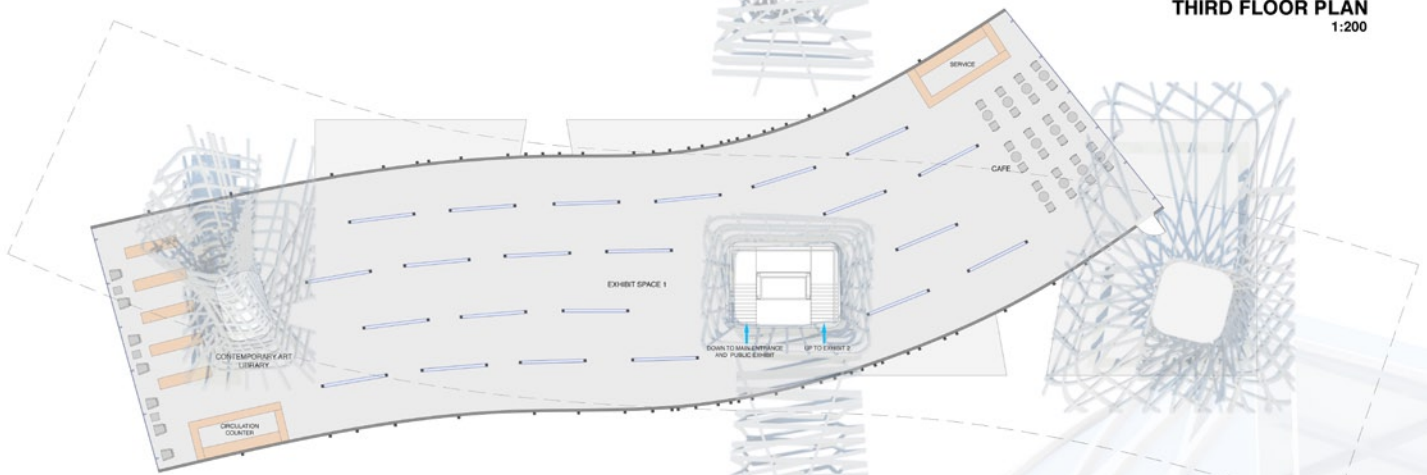
LONGITUDINAL SECTION
1:200

3

2008 - 2009 ACSA/AISC STEEL DESIGN COMPETITION
CALGARY MUSEUM OF MODERN ART



THIRD FLOOR PLAN
1:200



SECOND FLOOR PLAN
1:200

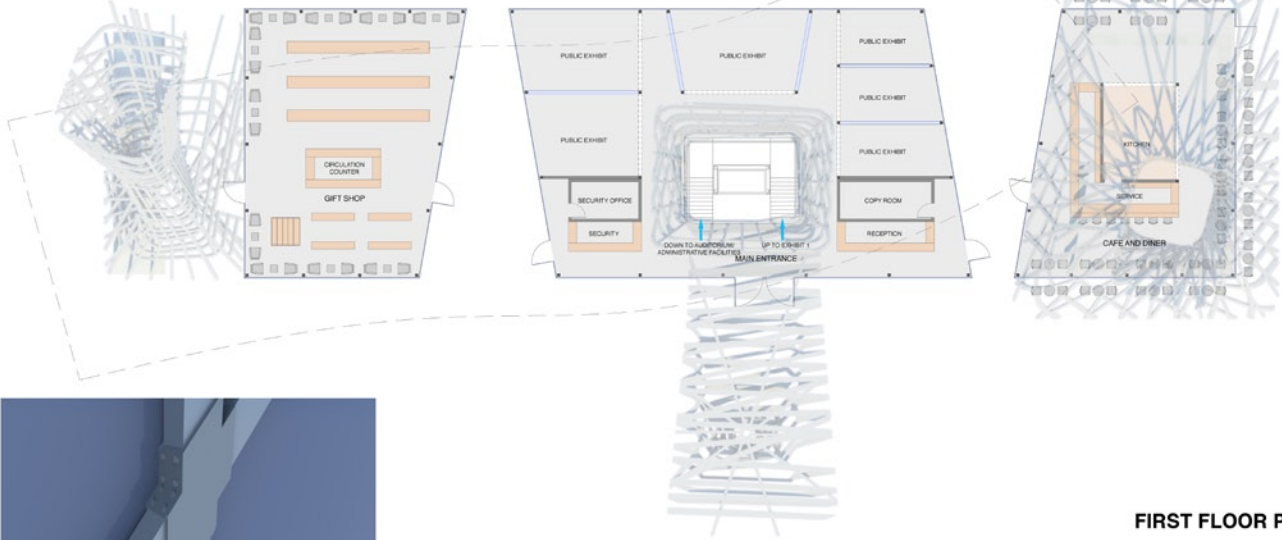


INTERIOR PERSPECTIVE
THIRD FLOOR, FROM WEST END

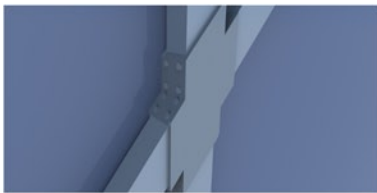


INTERIOR PERSPECTIVE
SECOND FLOOR, WEST END

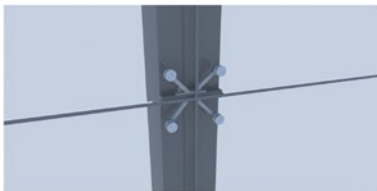
2008 - 2009 ACSA/AISC STEEL DESIGN COMPETITION
CALGARY MUSEUM OF MODERN ART



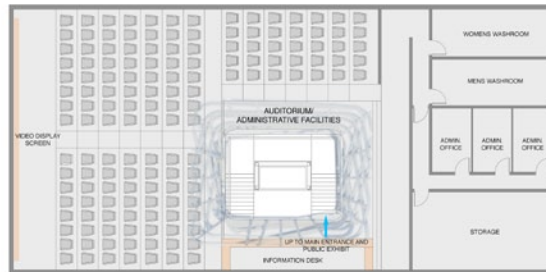
FIRST FLOOR PLAN
1:200



EXPOSED STRUCTURAL STEEL
FACADE DETAIL



H.S.S AND SPIDER CLIP CONNECTION
ELEVATOR SUPPORTS WITH GLASS



LOWER FLOOR PLAN
1:200



INTERIOR PERSPECTIVE
FIRST FLOOR, MAIN ENTRANCE/PUBLIC EXHIBIT



INTERIOR PERSPECTIVE
THIRD FLOOR, WEST END - THE CONTINUOUS SURFACE OF THE FLOOR AND WALLS ACT TO BLUR BOUNDARIES BETWEEN ART AND ARCHITECTURE

Calgary Museum of Modern Art

ACSA 2008-2009 Steel Design Student Competition

For me, like most designers, precedents have always been an extremely useful tool to provide both inspiration and to create opportunities to further understand how the building must function in its design, programmatic layout, and its social and cultural relationships.

The design of the Calgary Museum of Modern Art simply began as a close analytical investigation into what a museum is. How does a museum store art safely while remaining open to the public? How does the design relate to the culture and the city in which it resides? How might its design relate to the art contained and exhibited inside it?

On the most basic level, a museum must serve to function as a place to exhibit art as well as store the art securely. Beyond these basic principles, the design of a museum becomes more about its relationship to the art, to the city it is constructed in, and most importantly to the culture. During my research it became apparent that there are two distinct types of museum designs. The first type of museum is one that serves simply to allow for efficient viewing of artifacts often displayed in renovated warehouses, or large industrial spaces (*FIG. 1*). The directly opposite museum design is one that attempts to create a new urban context, initiating a new and unique dialogue between the city and its museum. In previous times, it was only the painting, sculptures, or drawings that prompted a trip to museum, while now the buildings themselves can make the effort of visiting a museum twice as rewarding (*FIG. 2*). This idea of creating a museum that can be as much as an attraction as the art contained within it to the visitors refers to the “Bilbao Effect” which is a term initiated when Frank Gehry designed the Guggenheim Museum in Bilbao (*FIG. 3*). Gehry’s museum, with its lavish, dramatic, and sculptural characteristics, became a major tourist attraction not only for that art, but also for the building itself.

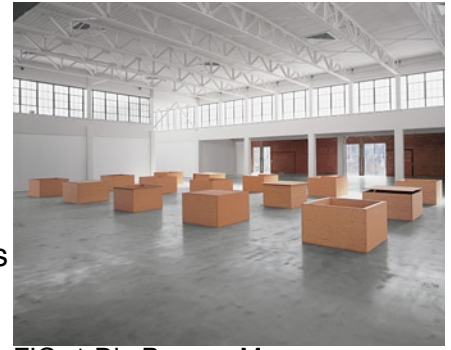


FIG. 1 Dia:Beacon Museum
New York
Interior view of the renovated museum

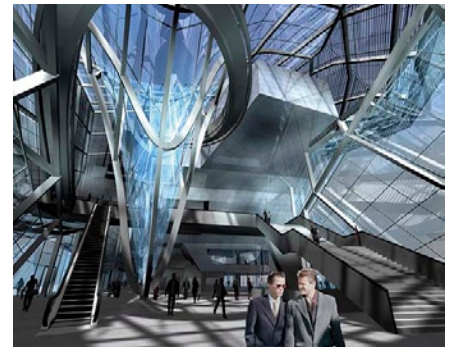


FIG. 2 Musee des Confluences
Lyons, France
Coop Himmelb(l)au
Interior render



FIG. 3 Guggenheim Museum
Bilbao, Spain
Frank Gehry
Exterior night view

FIG. 1 Tufts University - Tufts Magazine

http://www.tufts.edu/alumni/magazine/winter2008/images/features/photo_beacon.jpg

FIG. 2 Wexner Center for the Arts - “Coop Himmelb(l)au: Beyond the Blue”

http://www.wexarts.org/info/press/coop_press/

FIG. 3 Wonder and Pondering’s Weblog - “Slick Designs”

<http://wonderingpondering.wordpress.com/2008/05/27/slick-designs/>

One of the main criticisms on this type of museum architecture is that the architecture has a potential to dominate the art exhibited inside; but should the question then not be, is the art worthy of being displayed in such a beautifully designed museum? When considering the design for the Calgary Museum of Modern art, I proposed a design that attempts to not distract from the art exhibited inside of it through its “overdesigning”, but to rather create a museum with a strong relation to the city and its culture, that can still have a sculptural quality.

Once I identified the type of museum I was interested in designing for the 2008-2009 ACSA Steel Design Student Competition, I began investigating several different types of museums around the world which were of an inspiring design, in the way they uniquely displayed the art, the way in which the building attracts its visitors, and its social and cultural relationships. I studied many building systems in a museum such as the conceptual relationships between the building and the city, public and administration circulation, exhibition organization, and material and structural properties.

The first museum that I began investigating was Zaha Hadid’s Rosenthal Centre for Contemporary Art in Cincinnati Ohio (FIG. 4). Two things struck me as being most compelling in Zaha Hadid’s design for a Contemporary Arts Centre was the idea of an “urban release” and an “urban carpet”¹. The Rosenthal Center’s cantilevered ends of each individual volume projecting outwards from each other over the dense urban streets, had the ability to energize the city as well as the art that was contained and exhibited within it. Hadid was also interested in drawing the energy and activity of the city into the lobby and up into the gallery spaces through the use of an urban carpet made of concrete running in from the sidewalk through the lobby space and folding up forming the back wall of the atrium (FIG 5). “Given the potential dynamism and density of the corner site, the lobby of the new RCCA positions itself on the pedestrian level of the city as a fluid continuum of existing public paths and places. The lobby space, fully glazed and open to the city, is seen as a kind of ‘public square’ drawing in pedestrian movement through the creation of a simultaneously horizontal and vertical composition.”²



FIG. 4 Rosenthal Museum
Cincinnati, Ohio
Zaha Hadid
Exterior Photograph

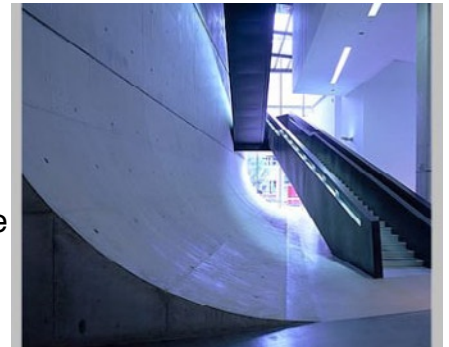


FIG. 5 Rosenthal Museum
Cincinnati, Ohio
Zaha Hadid
Urban Carpet

FIG. 4 Levantin Cultural Center - “Zaha Hadid”

<http://www.levantinecenter.org/lifestyle/architecture/zaha-hadid>

^{1,2}Zaha Hadid Architects - Projects - Cultural - Rosenthal Centre for Contemporary Art

<http://www.zaha-hadid.com/>

FIG. 5 Ego Designs - “2006 Personality of the Year: Zaha Hadid”

http://www.egodesign.ca/en/article_print.php?article_id=58

Both vertical and horizontal, wall and floor, Hadid's urban carpet extends from the public sidewalk into the museum curving upwards at the back of the building forming a continuous surface. This one continuous element ties together all gallery spaces turning the horizontal movement vertical. The urban carpet functions as a tool diverting the horizontal flow into a series of ramped stairs drawing the pedestrian movement from the surrounding areas creating a dynamic public space.

I was fascinated by the idea of blurring the boundaries between interior and exterior and drawing the energy and activity of the city into the building using a building component that transitions from exterior to interior and interior to exterior serving to function as a circulatory boundary system as well a structural wall. For the design of The Calgary Museum of Modern Art I used this idea of interior and exterior penetrations to create three cores which transitioned between the exterior covered program into the interior gallery "relief" spaces. These urban penetrations through the building attempt to draw in the activity of both Northern and Southern Calgary as the museum sits on Prince's Island park directly dividing North and South Calgary (FIG. 6). The museum attempts to mediate the two separate parts of the city through establishing a connection that links the two parts of the city. These penetrations through the building begin from the ground emerging through the building as hollow structural steel cores, and up through the gallery spaces, eventually resolving at the ceiling of the third floor. The cores emerge from the ground in a continuous flowing and twisting motion, representing permanence, in that they are infinitely continual, just as art will have a continual everlasting existence in our culture. From the ground, each core provides a semi-enclosed space. On the west end of the first floor is a covered theatre space for local plays and activities at grade, and an art library and digital media library on the second and third floors (FIG. 7). The main circulation core provides a covered entrance and brings the users up through each floor positioning them directly in the exhibition spaces (FIG. 8). The core on the East end of the second floor provides an outdoor enclosure for the café and for private events (FIG. 9). Penetrating each floor slab, the cores act as a primary structural support for each floor. The H.S.S. rectilinear tubes are fastened to the ceiling joists, which radiate from the openings of the cores.



FIG. 6 Site Plan showing the museum's location on an island separating North and South Calgary.



FIG. 7 Section showing the West core penetrating through the building for different public activity spaces.



FIG. 8 Interior render showing the circulation core bringing users through the building and into the exhibition spaces



FIG. 9 Elevation showing the East core penetrating through the building for different public spaces

As the cores ‘present’ the art for each floor, the ceiling joists radiating outwards from the core openings provide both longitudinal and transversal support for the floors above stretching from the core openings to the extents of each floor volume. The exposed H.S.S. steel rests on a titanium steel façade on the outside face (providing subtle blurred reflections of the surroundings), acting as a continuation of the ceiling joists, as the supports shift from one axis to the axis of the façade. The exposed H.S.S. steel façade is angled in only one direction on either side of each floor volume acting as a longitudinal and transversal release to the city.

An important precedent for the exhibition space layout of my museum was an exhibition by Morphosis entitled ‘Continuities of the Incomplete’ that documented ten years of work by Morphosis displaying models, drawings, photographs, and videos.³ Thom Mayne notes that “In conventional architecture exhibitions, visitors progress from one project to the next along a linear path. A curator may choose to organize the work chronologically or formally, by historical period, typology, or function, yet no linear arrangement can expose the intricate interconnections among the works, the idiosyncratic processes that produced them, nor the complexity of a body of work as a whole. Continuities of the Incomplete challenges the didactic nature of architecture exhibitions, not to mention the indifference they tend to elicit in lay viewers, by transforming the visitor’s participation from passive to active and recasting each as a curator.”⁴ At the exhibition, visitors walk across a glass and aluminum structure spanning a large array of samples of Morphosis’s work where users are invited to stand, walk, kneel, or even lie on the display (FIG. 10). The users have the ability to chart their own path amongst the work jumping from one project to the next in a non linear progression (FIG. 11). What I found most interesting about this specific exhibit was Thom Mayne’s philosophy on how he wanted the visitors to experience the work of Morphosis, and how the visitors take on the role of curator, in the way each visitor uniquely views the work in a non-chronological order.

³ Morphosis Buildings and Projects, Rizzoli International Publications INC, “Continuities of the Incomplete: Connected Isolation, A Unique Panorama”, Page 201-217

⁴ Morphosis Buildings and Projects, Rizzoli International Publications INC, “Continuities of the Incomplete: Connected Isolation, A Unique Panorama”, Page 202

FIG 10 Morphosis Buildings and Projects, Rizzoli International Publications INC, “Continuities of the Incomplete: Connected Isolation, A Unique Panorama”, Page 205

FIG 11 Morphosis Buildings and Projects, Rizzoli International Publications INC, “Continuities of the Incomplete: Connected Isolation, A Unique Panorama”, Page 217



FIG. 10 Continuities of the Incomplete Morphosis
Photograph showing visitors of the exhibition viewing the work of Morphosis



FIG. 11 Continuities of the Incomplete Morphosis
Photograph showing visitors of the exhibition viewing the work of Morphosis

Adapting a similar logic, I wanted the visitors of the Calgary Museum of Modern art to experience the gallery spaces that are organized in such a way so as to invoke a curious exploration, weaving and moving from one glass exhibit wall to the next rather than the conventional linear organization of some museum exhibits (FIG. 11). The transparent exhibit display walls allow for users to view the art in many different orientations, while also allowing users to see other users admiring the art (FIG. 12). The third floor exhibit works in the same way, utilizing the void spaces between the sculptures and installations to allow for a weaving interaction between the art.

Daniel Libeskind's Imperial War Museum in Manchester England was designed with great cultural considerations with the way the world is viewed today. "The concept for the project is that of a globe shattered into fragments and then reassembled as an iconic emblem of conflict"⁵. The museum is comprised of three interlocking forms representing Water, Air, and Earth, which are assembled on the site and are projected beyond it (FIG. 13). The Earth form contains the open museum space, representing the open and earthly territory of both conflict and war. The Air form becomes the entry into the museum with projected images, education spaces, and observatories. The Water form sets up a platform condition permitting views to the canal with a restaurant, café, deck, and performance space. The concept of these three assembled forms are meant to... "Concretize Twentieth century conflicts which have never taken place on an abstract piece of paper, but rather have been fought on dramatic terrain by infantry, in the skies by the airforce, and in the sea by battleships"⁶. The Lowry Centre, Manchester United football fields, and the Manchester Ship Canal and Transportation System are located adjacent to the museum and are united together into a unique perspective for both the pedestrians and for the visitors arriving in the area by car. Libeskind's Imperial War Museum provides new views from within itself while framing the surrounding area. By controlling the amount of window openings and placing them strategically throughout the building, Libeskind was able to limit the amount of views to the exterior making the museum a highly internalized experience, while the only views to the exterior become the narrow window slits and slotted skylights that cut through the vaulted metal roof (FIG. 14). The experience of the museum becomes one that goes well beyond the artifacts contained within the building.

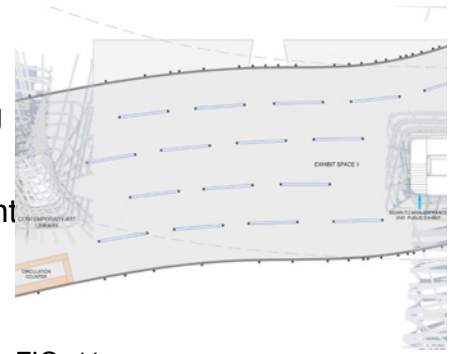


FIG. 11 Floor plan of museum showing how the spatial arrangement promotes non linear exploration of the art by the visitors.

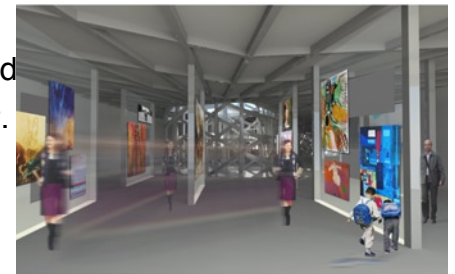


FIG. 12 Interior render showing the transparent display walls allow for visual connections between the art and the other visitors of the museum.



FIG. 13 Imperial War Museum Manchester, UK Daniel Libeskind Exterior photograph showing sculptural forms of the museum.



FIG. 14 Imperial War Museum Manchester, UK Daniel Libeskind Interior photograph showing cut out windows controlling light and views to the exterior.

In an attempt to control both natural light penetration and views to the exterior I considered Daniel Libeskind's astute use of window placement so as to not damage the art exhibited, as well as to create an experience that was highly internalized with the art pieces. Mediating between North and South Calgary, the three floor museum volumes gesture to both North and South at different moments in the public relief spaces allowing for framed views to the park that the museum resides on as well as the two physically disconnected parts of Calgary (FIG. 15). The penetrating cores become the main connection to the exterior in the gallery spaces as they flow through the building and resolve at the third floor ceiling opening up to the sky above, while allowing light to enter through large glazed skylight openings (FIG. 16). At the extents of each floor, large full height windows frame the surrounding built and natural landscape environments. The reduction of direct natural daylight into the exhibit spaces reduce the possibility of the art pieces be subjected to damage from the sun, while setting up controlled and distilled experiences of the surroundings at the end of each floor (FIG. 17).

Frank Gehry's proposal for the Corcoran Gallery of Art uses sculptural folding surfaces with long windows peering through the folds (FIG. 18). This design for an addition to Washington's oldest art museum and the college of art and design creates a new main entrance on New York Avenue leading to the new atrium space housing two distinct types of gallery spaces. Traditionally organized gallery spaces are located in rectilinear volumes in the new atrium while the more sculpturally shaped galleries are located within the three volumes facing along New York Avenue. The newly designed entrance pierces through the skylights at street level creating an equal presence to the museum and to the college of art and design as its visitors arrive.⁷ In Gehry's design, the architecture begins to mutate into sculpture as the wall becomes activated, blurring and challenging the distinct borderline between architecture and sculpture while creating new relationships between space and object both inside and outside. For the Calgary Museum of Modern Art, the floors and walls of the second and third floors act as a continuous surface blurring the boundaries between art and architecture.



FIG. 15 Interior render of computer resource station at extent of third floor.



FIG. 16 Interior render of exhibit space on third floor with light from skylight illuminating the space.



FIG. 17 Interior render looking through contemporary art library and out of West end of museum.



FIG. 18 Corcoran Gallery of Art Washington
Frank Gehry
Exterior model photograph showing the three sculpted folded volumes.

FIG. 18, ⁷ Arc Space - New Addition Gehry Partners LLP
<http://www.arcspace.com/architects/gehry/corcoran/>

The transition between gallery spaces and relief spaces (library, café, digital library, computer resource station) work in the same way, as the definition between the two different types of spaces becomes a smooth transitional shift. With large windows at the extent of each volume, the user is pulled from one end to the other providing unique floor by floor views shifting from North to South Calgary and South to North Calgary, ultimately bringing together the two separated parts of the city via the Bow River and Prince's Island Park where the Calgary Museum of Modern art resides (FIG 19).

By using precedents for the design of the Calgary Museum of Modern Art I was given inspiration for the design as well as an understanding of what a museum must do; how it safely stores the art, how it remains open to the public, and how the building can be a cultural icon. By analyzing and studying Zaha Hadid's Rosenthal Centre for Contemporary Art in Cincinnati Ohio, Morphosis's Continuities of the Incomplete exhibit, Daniel Libeskind's Imperial War Museum, and Frank Gehry's Corcoran Gallery of Art, I was able to logically adapt ideas of exhibition organization, material and structural properties, public and administration circulation, and conceptual relationships between the building and the city.

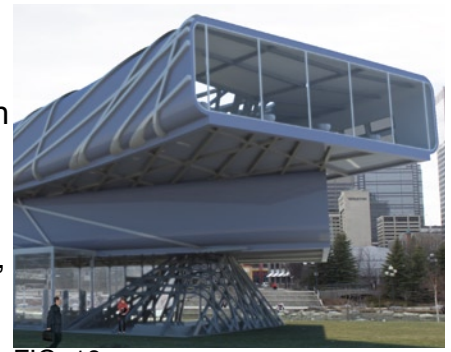


FIG. 19
Exterior render east end of museum showing large windows at the extent of the third floor gallery space

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Images

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