



ROYAL ALBERTA MUSEUM

MEDIA

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VISION STATEMENT

As a memorable and identifiable focal point in the Arts District of Alberta's capital city, the Royal Alberta Museum embodies the story of Alberta, preserving experiences of its people and places, inspiring Albertans to explore and understand the world around them.

The new museum provides a remarkable experience for its visitors, inspiring a spirit of discovery. The new museum creates a highly flexible venue, adaptive to changing concepts about the role of the museum in the community into the future.





DESIGN CONCEPT

Royal Alberta Museum is the largest museum in Western Canada, housing both the human history and natural history of Alberta. The museum has been preserving, collecting and displaying the province's history for over 50 years. After outgrowing their original home in west-central Edmonton, the Government of Alberta made the decision to move the Royal Alberta Museum to a new location in downtown Edmonton. The blank canvas in the heart of the city presented a unique opportunity to create a perfectly-suited facility with more space for displays, growing collections, and state of the art research labs.

The design concept begins from a deep understanding of the Royal Alberta Museum, the province, and the site, creating a museum that is sustainable, contributes to a vibrant downtown, is well designed and fully accessible. It is a place to explore and connect—to Alberta, to ideas, and to people.

The design is a continuous narrative, a dialogue between inside and out, between the city, the building and nature. There is a dynamic weaving of interior and exterior spaces. Nature is brought into the building through the gardens and terraces, and the building extends out into the landscape. It looks upward to the broad Alberta sky and out to the city beyond.

The architecture gives primacy to the stories, the artifacts and the objects of the museum. The collections and how they are preserved and installed is most important. The building is designed to enhance the experience of visitors and museum staff.

The project scope includes 8,200 net square meters of natural history and human history long-term exhibition galleries, children's gallery and bug room, 4,300 net square meters of curatorial, research and collection spaces, a 1,100 square meter feature gallery and associated support space totaling 22,000 net square meters.



DESIGN COMPETITION

The Royal Alberta Museum project was tendered as a fast-track design-build competition. To be awarded the project, DIALOG competed in an international competition that required a full design be proposed. DIALOG teamed up with Michael Lundholm—a highly-regarded Canadian museum planner—and with Ledcor, a reputable contractor that is committed to building what's best for the community. The collection of subtrades that Ledcor's team offered was aligned in DIALOG's values for community wellbeing and building something that is right for the city and province.

For two months, the design team worked closely with Ledcor to submit a complete design. Other globally respected firms competed for the project. The Royal Alberta Museum chose DIALOG's design. The deep understanding of the site and its context, as well as the efficient back of house design, presented the Royal Alberta Museum with a design that is true to their mission and values.

Once the team was selected, the DIALOG & Lundholm - Ledcor design-build team worked collaboratively with Alberta Infrastructure and the Royal Alberta Museum to refine the design and deliver the museum you see today.

EQUITY AND TRANSPARENCY

Royal Alberta Museum has core values of equity and transparency that is reflected through the design of their new space. Though the galleries themselves have strict environmental conditions that keep exhibits safe and preserved, the design responds to this ideal in clever ways.

Before you even enter the museum, large windows allow a glimpse into the museum, intentionally bringing sunlight into the public spaces and revealing the activity within. When the sun sets early on winter evenings, the museum's hive of activity is a beacon along the avenue.

Once inside, visitors experience much of the museum without having to pay admission. The spacious, bright lobby is the central wayfinding point, with views into everything the museum has to offer.

Artifacts are on display in the lobby including an airplane, Albertasaurus and a mammoth cast. The museum experience starts as soon as you arrive. Visitors can see into the Children's Gallery and the infamous Bug Room (the only galleries where natural light will not harm the contents). Windows allow views into the research laboratories to reveal the museum's scientific work. Many Albertans don't realize how active Royal Alberta Museum is in the preservation and research of Alberta's history, so this is an eye-opening feature of the new building, enhancing transparency and equity.

Visitors can also enjoy the gift shop, café and outdoor patios, look into field trip classrooms, and access public washrooms and lockers. Upstairs, the Manitou Asinîy Gallery is open to the public with access to the Manitou stone.





ANCHORED IN PLACE

The Royal Alberta Museum is intentionally designed to be anchored in this place. The design simply wouldn't work anywhere else. Today, the Royal Alberta Museum is in the heart of downtown Edmonton's Arts District, right beside the modern day civic precinct. Historically, it lies at the intersection of Canada's two survey traditions, directly along the historic Canadian Northern Railway Line. The design seizes the perfect opportunity for Alberta's provincial museum to respect and amplify the site's incredible history while responding to the surrounding neighbourhood.



This site is where two historic street grid systems connect: the British Cartesian grid that follows true north, south, east, west (like most of Alberta), and the seigneurial grid from early French settlers that aligns with river frontage, the city's original 'main street.'

Inside the museum, the main galleries are offset by 17 degrees, aligning with the historic grids that represent the human history of the site. Other spaces such as the Children's Gallery and feature staircase are more curvilinear in shape, reflecting the winding river through Edmonton and the natural history of the site.

“The design of the museum is inspired by both its place in the fabric of Alberta’s capital city and by the character of our province. It could not be anywhere else.”

-Donna Clare, Lead Architect, DIALOG Principal

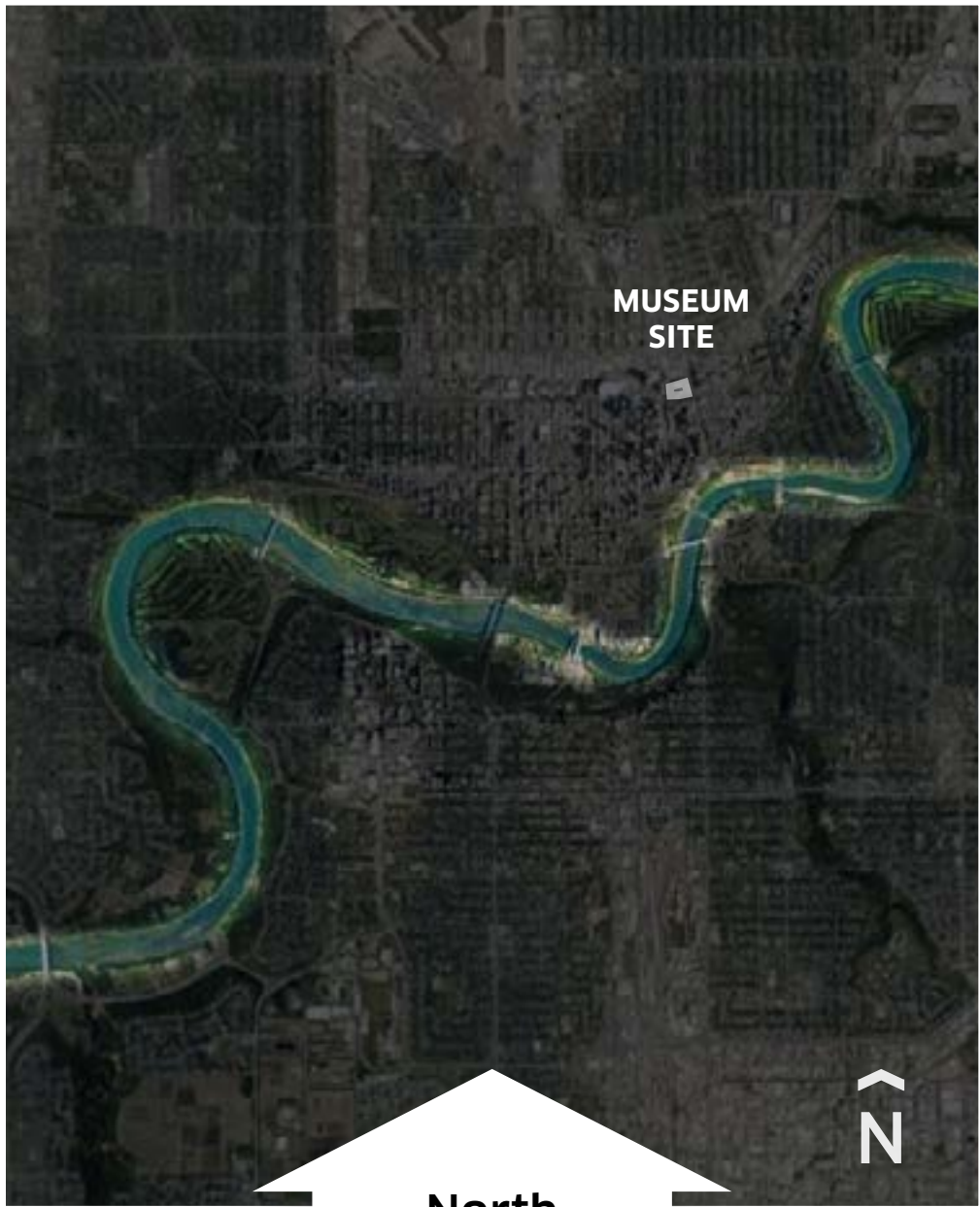


Museum Site Plan

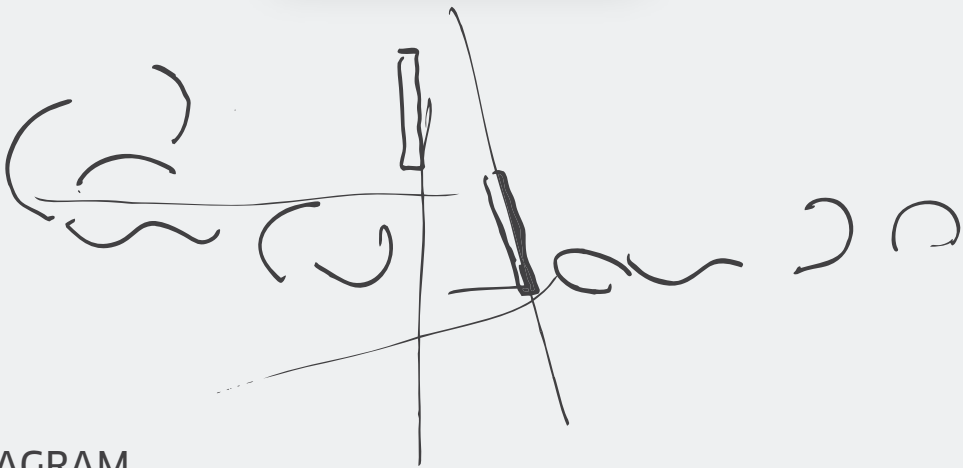


British Cartesian Grid

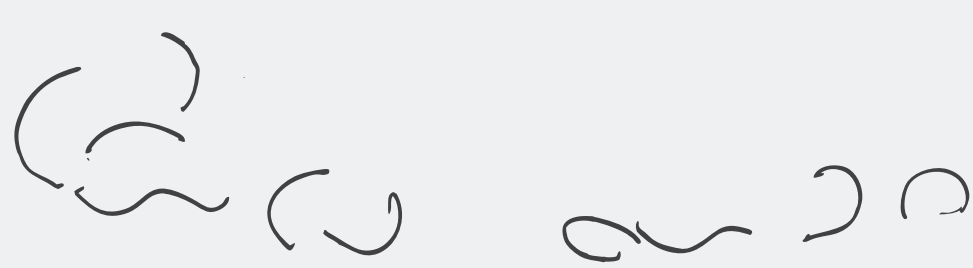
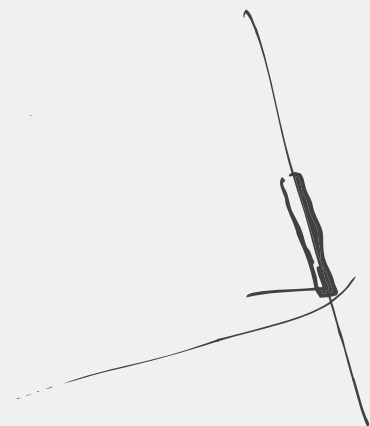
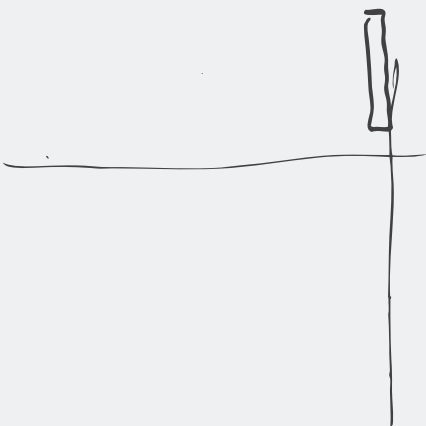
French Seigneurial Grid



North Saskatchewan River



PARTI DIAGRAM
The basic scheme or concept of an architectural design presented in the form of a simple diagram.



Two outdoor courtyards are exact alignments of streets that were lost over years of development in downtown Edmonton.



ISABELLA COURTYARD

FORMERLY 104 AVENUE

This courtyard is a rendezvous point and restful break from the bustle of the downtown core. The plantings provide a pleasant view of nature from inside the adjacent Children’s Gallery and feature gallery lobby. The plantings represent Alberta’s north and Rocky Mountains with Lodgepole Pine and Black Spruce. There is enough space to accommodate a tipi, leading to even more learning opportunities at the Royal Alberta Museum.



FRASER COURTYARD

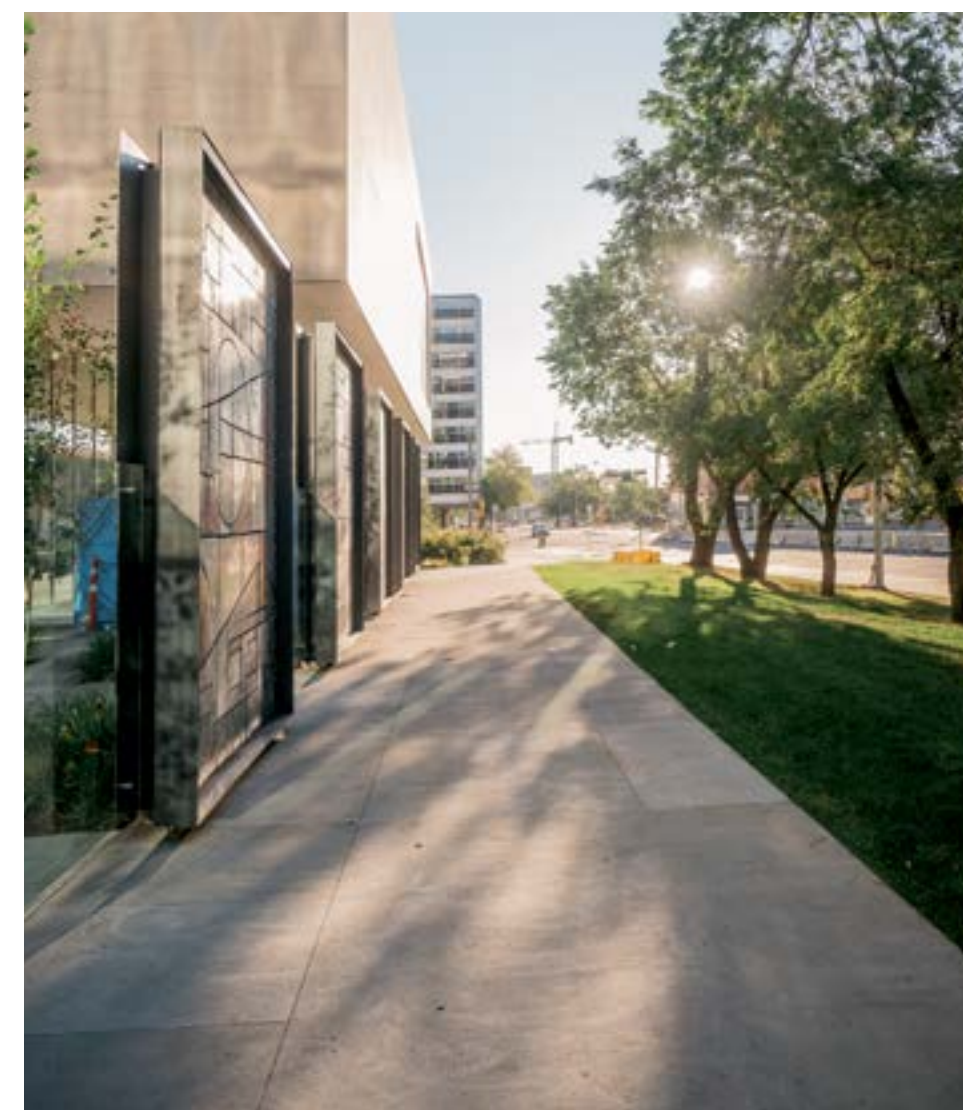
FORMERLY 98 STREET

The café’s patio is a representation of Alberta’s Aspen Parkland. Aspen trees are planted throughout, forming a high canopy to accommodate seating underneath. Day Lilies can be found throughout—a breed developed by researchers in Alberta before rising to popularity around North America.



ISABELLA GARDENS

Blending with the adjacent Isabella Courtyard, this open park overlays the former site of Queens Avenue School built in 1902, converted to Canadian National Railway's office in 1927 and torn down in 1947. An amphitheatre created by canted lawns, sidewalk aisles and an outdoor stage can host festivals and outdoor museum lessons. Interestingly, there are no fixed benches, but the planters and raised lawns provide many opportunities to sit.



103A AVENUE

Existing trees along 103 A Avenue are incorporated into the design, allowing views of nature from within the museum and forming an enjoyable promenade along the southern edge of the site. A previous post office main branch was demolished on the site, but beautiful mosaics by Ernestine Tahedl were saved, restored, and reinstated in almost the exact same place. They line the promenade and provide a screen for the café patio. Alberta is literally reflected in the pathways around the site with the help of sparkling glass cullet embedded in the concrete.

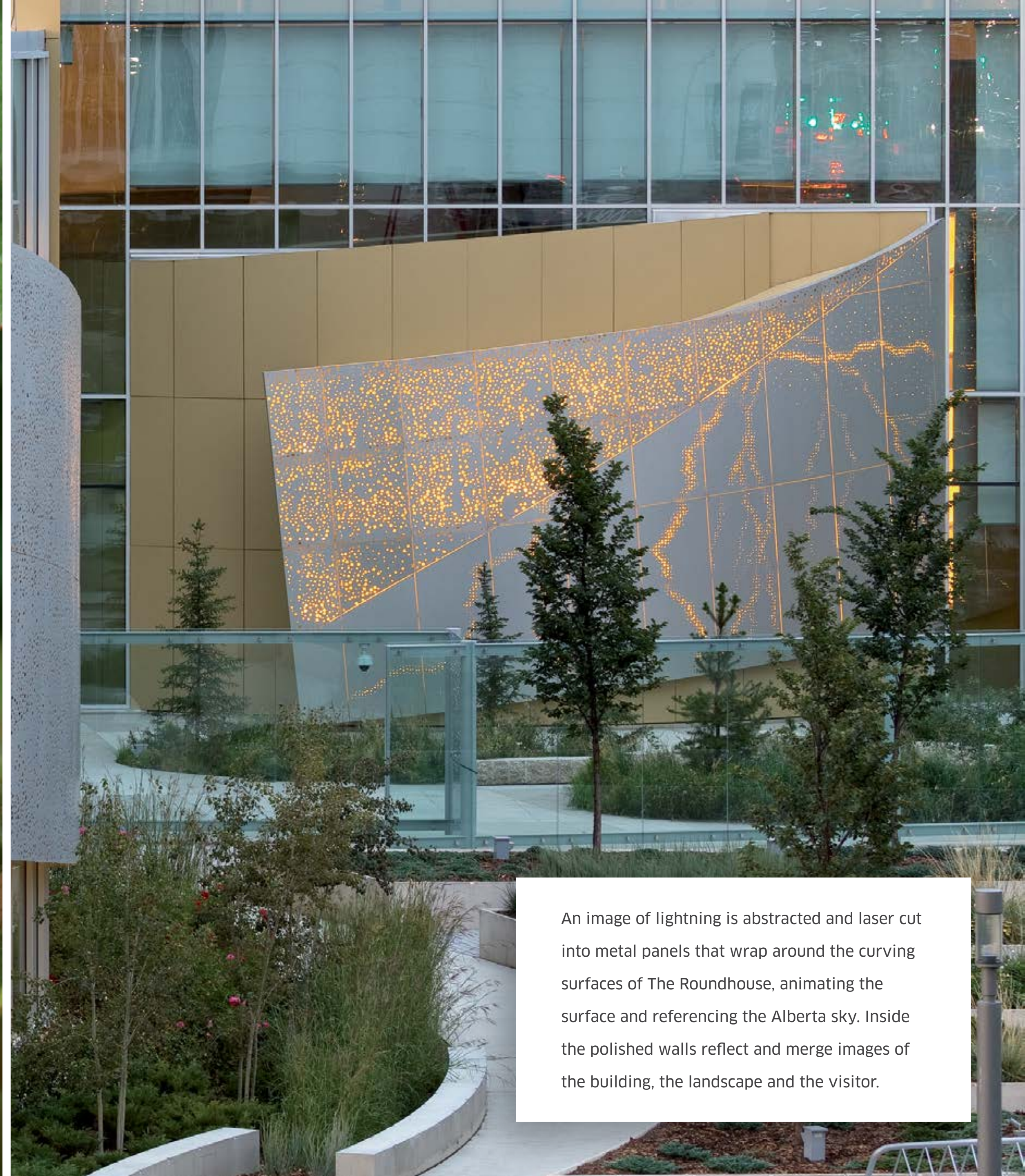


Alberta's distinct seasons were embraced in this design—inside and out. As the northern night sky darkens, the museum begins to glow. The glazed walls dissolve and the building becomes a display case.

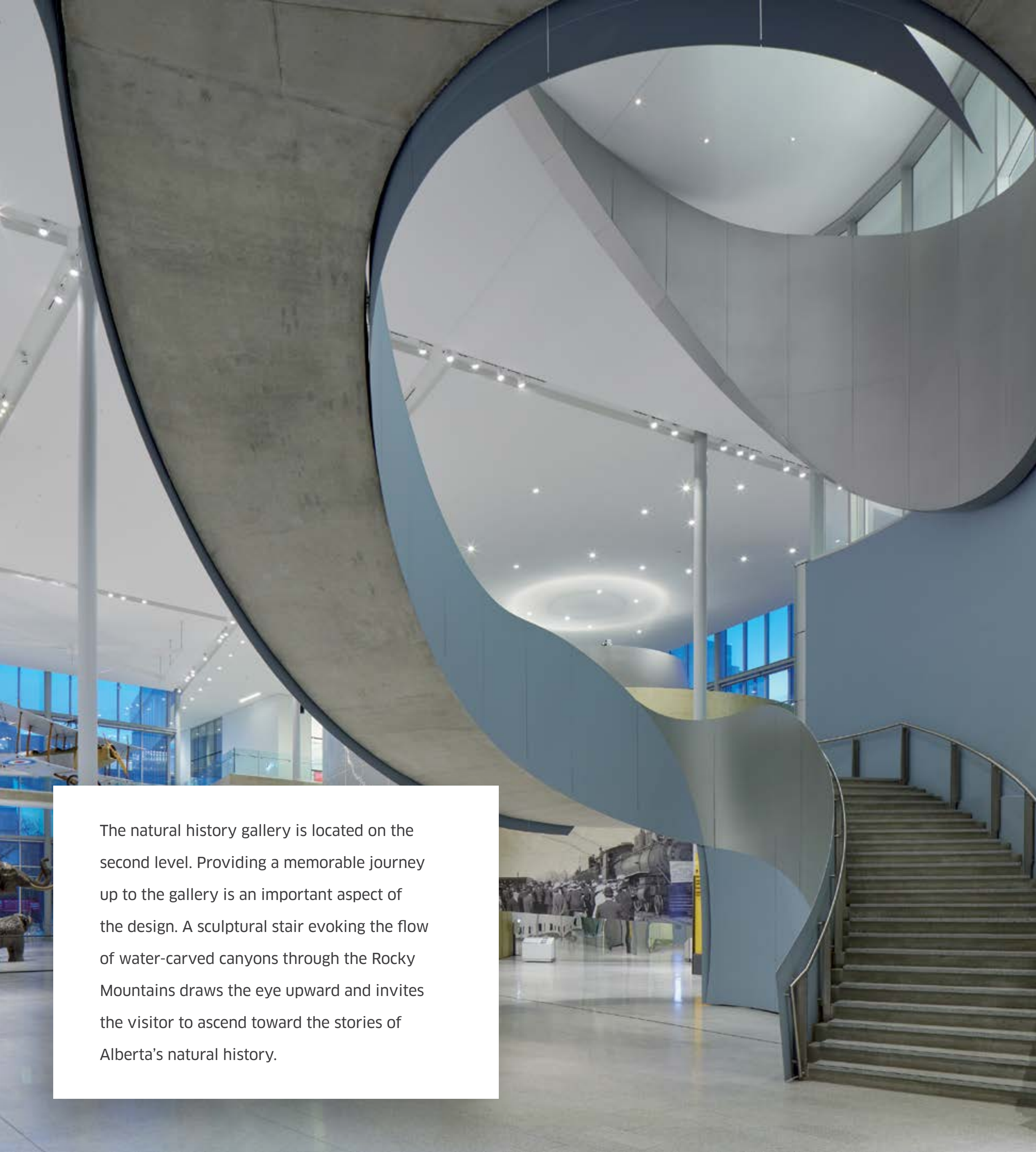
REMINDERS OF ALBERTA

A clear, continuous narrative begins on the exterior, draws the visitor into the main lobby and offers enticing views into all that the museum offers. From a single point of orientation, the visitor can design their own visit, be it a meander through the galleries or a direct route to a specific destination. Every space throughout the building reminds visitors that they are in the home of Alberta's culture and history.

The province's everchanging weather and distinct seasons influence its culture and landscape. Being a home of Alberta's stories, references to weather appear throughout the building.

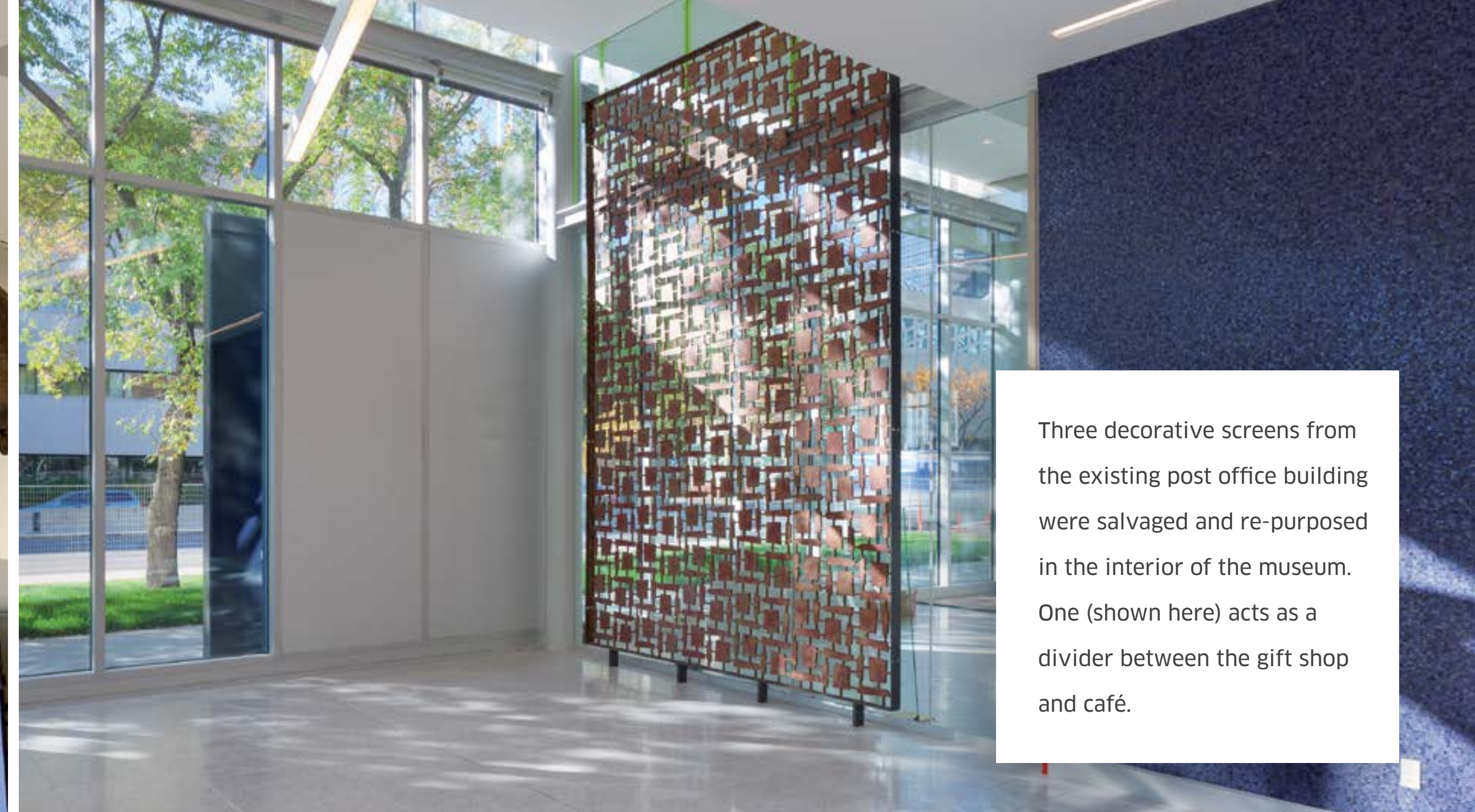


An image of lightning is abstracted and laser cut into metal panels that wrap around the curving surfaces of The Roundhouse, animating the surface and referencing the Alberta sky. Inside the polished walls reflect and merge images of the building, the landscape and the visitor.

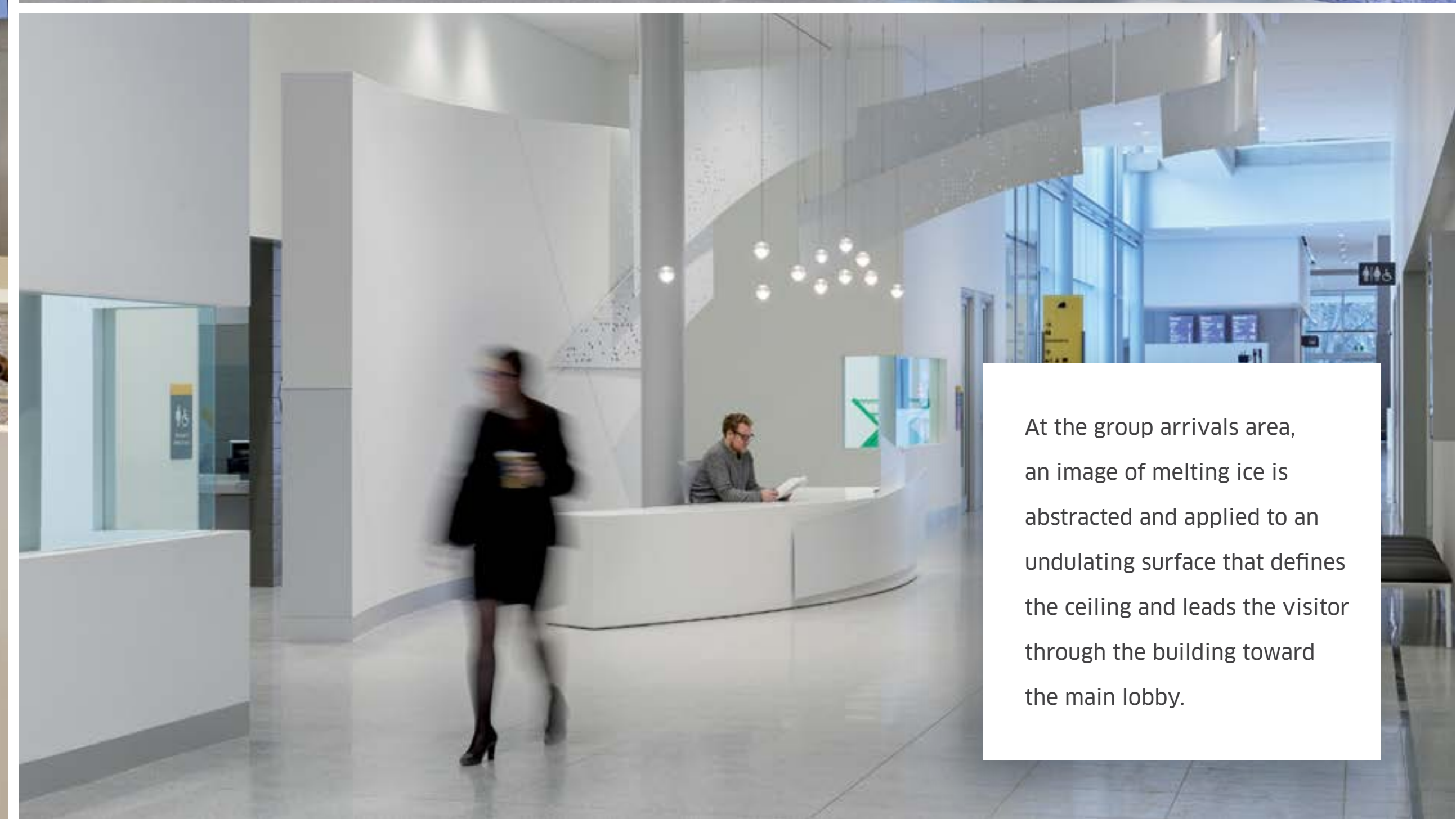


The natural history gallery is located on the second level. Providing a memorable journey up to the gallery is an important aspect of the design. A sculptural stair evoking the flow of water-carved canyons through the Rocky Mountains draws the eye upward and invites the visitor to ascend toward the stories of Alberta's natural history.



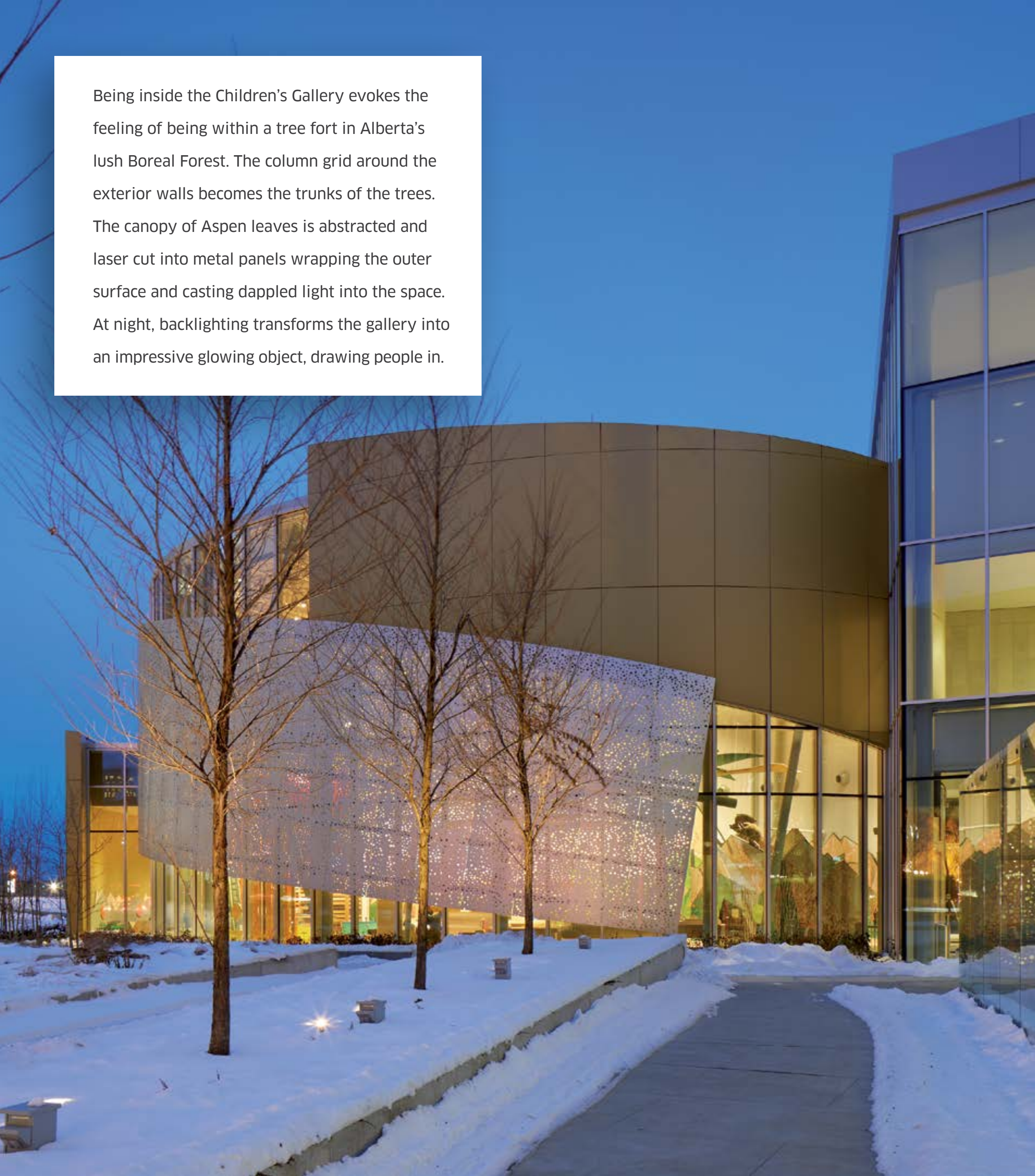


Three decorative screens from the existing post office building were salvaged and re-purposed in the interior of the museum. One (shown here) acts as a divider between the gift shop and café.



At the group arrivals area, an image of melting ice is abstracted and applied to an undulating surface that defines the ceiling and leads the visitor through the building toward the main lobby.

Being inside the Children's Gallery evokes the feeling of being within a tree fort in Alberta's lush Boreal Forest. The column grid around the exterior walls becomes the trunks of the trees. The canopy of Aspen leaves is abstracted and laser cut into metal panels wrapping the outer surface and casting dappled light into the space. At night, backlighting transforms the gallery into an impressive glowing object, drawing people in.





Alberta's lakes, rivers and cities are depicted in the perforated metal panels that line the feature gallery. The effect is subtle, waiting to be discovered when visitors notice the distinct western border line of the province on the panel's edge.

A MUSEUM THAT WORKS

This is a fully functional, sustainable museum, one that is aligned with the current program but is also able to accommodate change over time. The design is grounded in this place but also has a global perspective. The natural history and human history galleries have equal prominence to the feature gallery that will showcase the world.

A key element of the design is the ability to use the spaces in multiple ways that support a wide range of functions. The line between the paid and unpaid zone is flexible. The group entrance can be used as an exit on blockbuster days. The lobby can become an event venue. The gallery suites are straightforward, simple spaces able to support a variety of configurations and artifacts. The feature gallery allows the museum to host traveling exhibits with efficient back-of-house arrangements—easy exhibit changeover logistics, work spaces, and collection integration.

The lobby is the main starting point with a glimpse into all the museum has to offer, designed to enrich the experience of visitors. Inside the galleries, the architecture takes a back seat, allowing the exhibits to take over.

“From a public perspective, this building is striking—soaring, light-filled atriums balanced with intimate exhibit spaces that allow our collections to shine. But what the public doesn’t necessarily see is its functionality. This building provides us with the right conditions and tools to conserve the millions of objects held in our care.”

**-Chris Robinson, Executive Director
of Royal Alberta Museum**





“Royal Alberta Museum’s building and site are one together. It is a place to gather with friends, to feel the warmth of the sun in courtyards sheltered from chilly north winds on fall days, to stretch out on the lawns on a summer day, to stroll under the elm tree canopy along the Tahedi mosaics. It is a place to wander and discover.”

**-Doug Carlyle, Landscape Architect,
DIALOG Principal**



The lobby is connected to the sky, the gardens and the terraces, and offers glimpses into the working life of the museum.



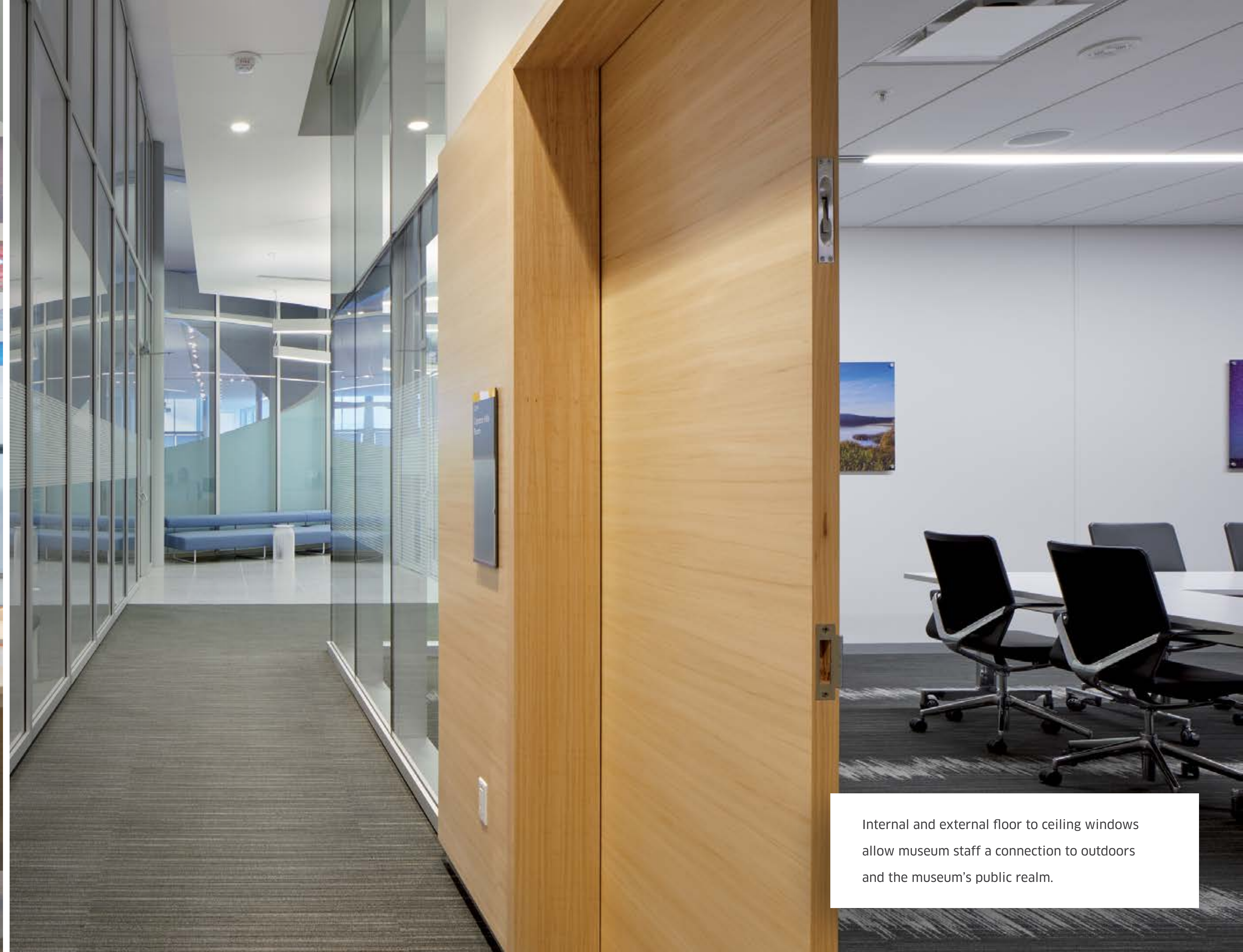
“The museum is a unique interplay of inside and outside, of placemaking and storytelling. Each time you visit, there will be something new in the experience—the light and shadow of the season, the color of the sky and the surrounding vegetation, your reflection in the finishes, and the stories told in the galleries.”

-Donna Clare, Lead Architect, DIALOG Principal





The museum zone offers framed views into the active research and conservation at Royal Alberta Museum



Internal and external floor to ceiling windows allow museum staff a connection to outdoors and the museum's public realm.

“Our intent was to make a museum that works, that serves (rather than impinges on) the important purposes of the Royal Alberta Museum, that balances architectural delight with functionality and technical performance. I think we achieved that balance and that this building will be recognized as a model of what museum architecture should be all about.”

-Michael Lundholm, Museum Planner



Classrooms are intentionally on display so visitors can see the educational work that RAM does beyond the exhibits. Some galleries even have classrooms within them.

ENGINEERED TO PROTECT STORIES AND ENHANCE EXPERIENCES

MECHANICAL SYSTEMS

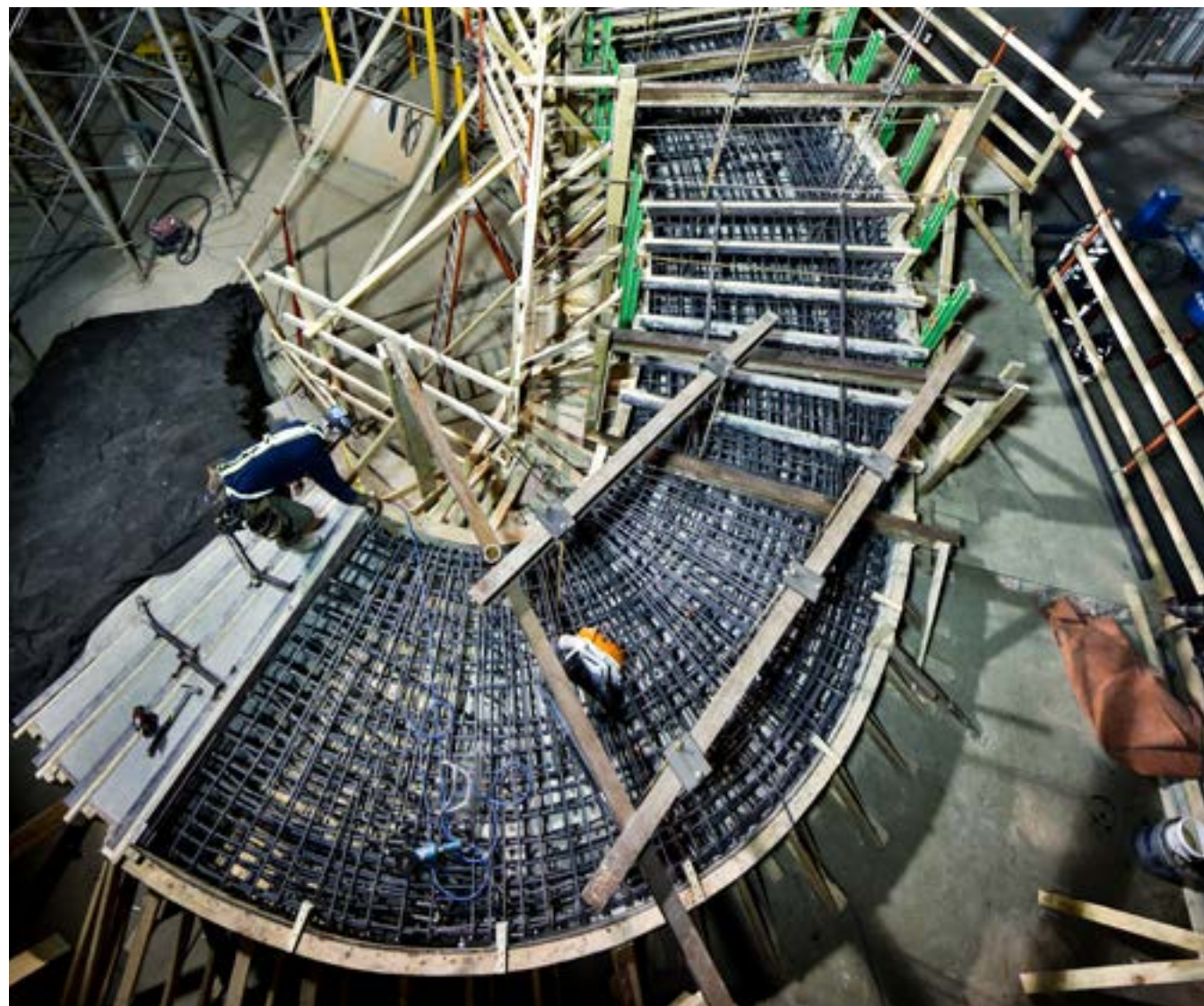
The Royal Alberta Museum not only tells the story of Alberta through its galleries, they also actively preserve and collect the natural and human history of Alberta. Behind the scenes, there is a hive of activity researching, inspecting, restoring, preserving. This wide range of activity presents a variety of environmental conditions to design for.

To keep the artifacts safe and well-preserved, the design incorporates tried and true mechanical systems, including flood mitigation. The placement of the systems make this building interesting. Most deep green buildings have water cooling systems, but these couldn't be used in galleries due to the risk of flooding. The gallery air systems are designed to maintain an even, consistent temperature. Outside the galleries, terminal unit rooms house the mechanical equipment, so the only thing getting into the galleries is warm air. All servicing of controls and equipment happens in these rooms, not the gallery spaces, keeping the collections protected from water.

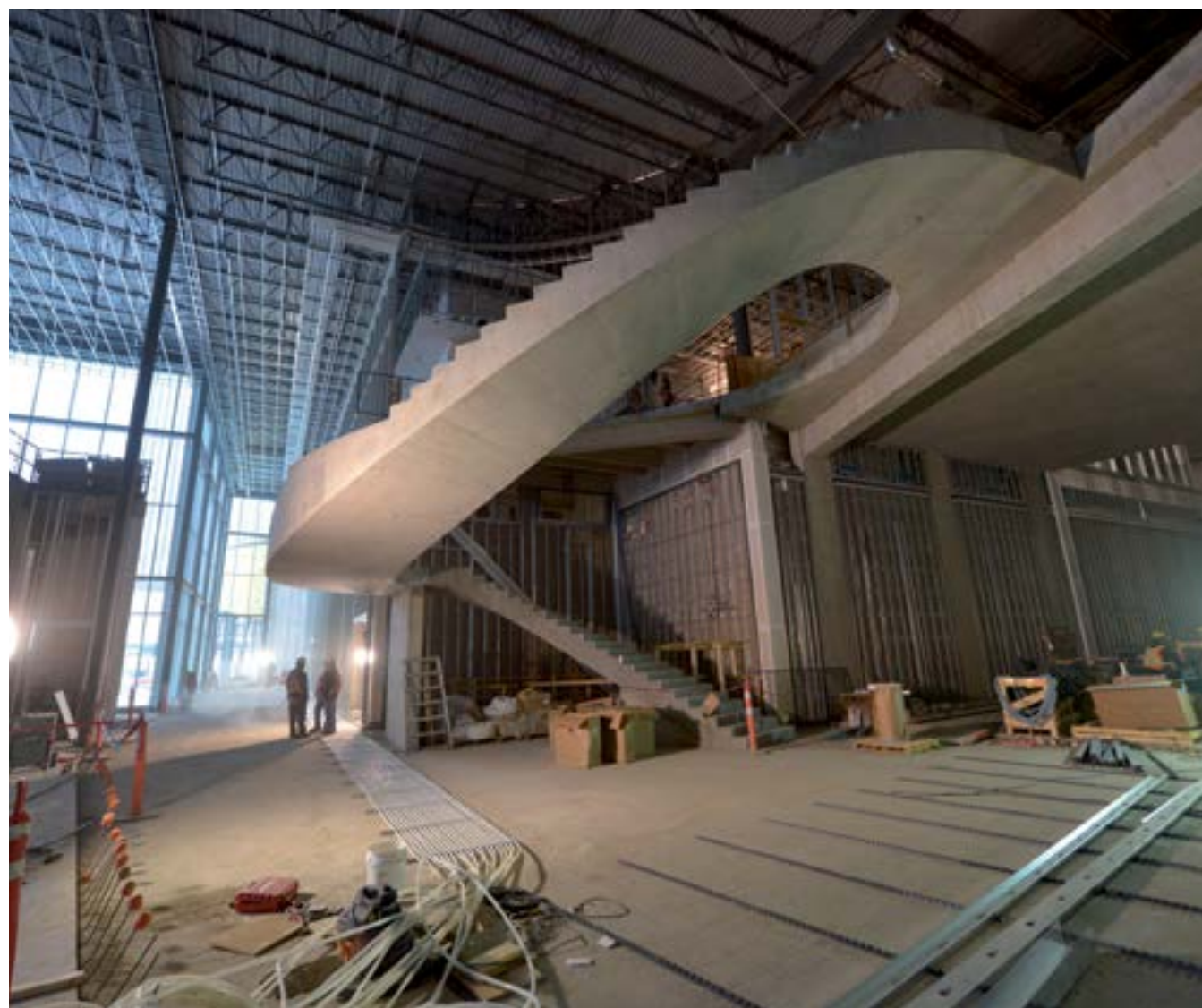
Not all spaces use traditional air systems. The lobby has a radiant slab system, using the thermal mass of the floor as a thermal sponge. Displacement ventilation systems are used in non-gallery spaces like corridors and classrooms. The theatre, which has no galleries adjacent or below, has displacement ventilation under the seats. And the decorative panels in the theatre's ceiling are all radiant, with circulating water that cools the space.

The new museum is designed to last for 100 years, so the mechanical systems are easily accessible for upgrades in the decades to come. Utilitarian functions are strategically placed below the main level, allowing easy service access without disturbing the public and staff on the active levels above.





STAIR FORMWORK WITH STEEL REINFORCEMENT



CAST-IN-PLACE CONCRETE FEATURE STAIR

STRUCTURAL AND ARCHITECTURAL CONCRETE

Concrete is used throughout the building for both function and architectural design. The temperature outside varies between -40 degrees Celsius to +35 degrees Celsius, depending on the time of year, and Edmonton is high on the list of sunniest cities in Canada. The roof is concrete, providing a thermal mass that helps mitigate these large temperature changes.

Functionally, concrete two-way flat plate slabs were selected for most museum floors for their efficiency and cost-effective support of the heavy loads of displays and stored collections. The high thermal mass of the concrete structure is used to store heat, helping protect against temperature fluctuations. This thermal flywheel effect allows for reduced dependence on mechanical systems, and helps protect the museum's collections in the event of a power outage. The robust nature of the concrete structure allows the building to meet its 100 year design life.

Architecturally exposed concrete surfaces can be found throughout including columns, slab surfaces, edges and soffits. This required a high level of expertise for execution—condition, alignment and tolerance of formwork was critical, and coordination of joint locations, tie holes, chairs, and cast-in services were precisely coordinated.

The staircase leading up to the natural history gallery is a concrete art piece. Designed to mimic the canyons carved by water in Alberta's Rocky Mountains, the architecturally exposed, cast-in-place concrete spiral rises 8 m and spans more than 18 m. The cross section of the stair is rectangular with varying depth (from 400 mm to 1150 mm) to suit the structural strength and architectural requirements. During construction, reinforcing was hung off temporary beams spanning across the formwork from above so that chair marks are not visible on the exposed soffit.

A second exposed concrete feature stair provides access from the group arrival area. A central exposed concrete wall supports two lifts of stairs that crisscross up each side. Each stair tread cantilevers off the centre wall, resulting in a stair with a thin, folded accordion profile. The stair is a stunning exposed concrete feature visible from the east side of the building.



Concrete two-way flat plate slabs support heavy loads of displays and stored collections.



Galleries are large, open and flexible spaces that can accommodate a variety of exhibit display requirements over the next 100 years.



SUSTAINABILITY

The Royal Alberta Museum is LEED® Gold certified. This achievement is a testament to the close collaboration between all design disciplines, the client, and contractors. Highlights of the design and construction that contribute to the sustainability of the Royal Alberta Museum are noted here.

- The project is in a high-density and accessible area serviced by light-rail public transport. Sustainable transport is encouraged by ample bicycle storage and no public parking on the site (except for loading and group arrivals). There is only a small amount of parking on-site for fleet vehicles.
- Landscape species selection is locally adapted and minimizes the amount of potable water needed for irrigation.
- Low-flow plumbing fixtures are provided, saving over 35% of indoor water consumption annually
- Unique HVAC design maximizes energy recovery while providing tight environmental controls for temperature and humidity in exhibit spaces.
- Condensing boilers and water-to-water heat pumps provide efficient heating and cooling.
- Energy-efficient LED lighting is controlled with automatic sensors for occupancy and daylight.
- Selection of materials containing recycled content are produced locally and comply with VOC requirements to maintain the precious indoor air quality required by the museum.
- Building envelope commissioning providing detailed design and construction review for enhanced air-tightness, water tightness and thermal performance.
- The building is designed for a 100-year service life, ensuring that it will be a part of the community for generations to come.
- Throughout the building, Portland cement in the concrete utilizes recycled fly ash as a supplementary cement material.
- Structural concrete elements were also frequently left exposed as part of the architectural design, reducing the amount of finishes required for the building.
- The high thermal mass of the concrete structure is used to store heat, protecting against temperature fluctuations.



PROJECT FACTS

- A total of \$375.5 million is invested in development of the new museum. This includes \$253 million from the Government of Alberta and \$122.5 million from the federal government Building Canada Fund.
- Royal Alberta Museum is the largest museum in western Canada.
- Exhibition space:
 - Natural History – 2,900 m²
 - Human History – 2,750 m²
 - Feature Gallery – 1,100 m²
 - Children's Gallery – 600 m²
 - Bug Room – 280 m²
- The museum displays 5300 objects in newly designed exhibits. RAM has over 2.4 million objects in their collections, and about 90% will be stored in the new building.
- The new downtown museum is twice the size of former museum.
- The new museum meets international museum interior climate standards, opening the door to hosting outstanding feature exhibitions.
- More than 18,000 m³ of concrete was used to construct the Royal Alberta Museum. That's enough to fill more than 7 Olympic sized swimming pools!
- The reinforced concrete feature staircase acts as the focal point of the lobby. Between design and construction, an equivalent of about 25 weeks of around the clock work were invested to realize the vision for this single element!
- Over 2500 metric tons of steel reinforcement was cast into the concrete. To put that into perspective, that's heavier than 500 elephants!
- There are 9099 plumbing pipes, 6504 hydronic pipes, and 9819 ducts, totaling a length of nearly 16 km. That is almost four times the distance between the old museum and the new museum.
- Total supply air in the museum is 142,557 litres per second (302,078 cubic feet per minute). This is equivalent to about 150 residential furnaces. That's a lot of wind!
- The choice to deliver digital specification documents prevented the use of 15 m³ of paper. That's almost 800 packages of copy paper, weighing 2 tonnes.



PHOTOS

To acquire full sized versions of these photos, please reach out to DIALOG's media contact.

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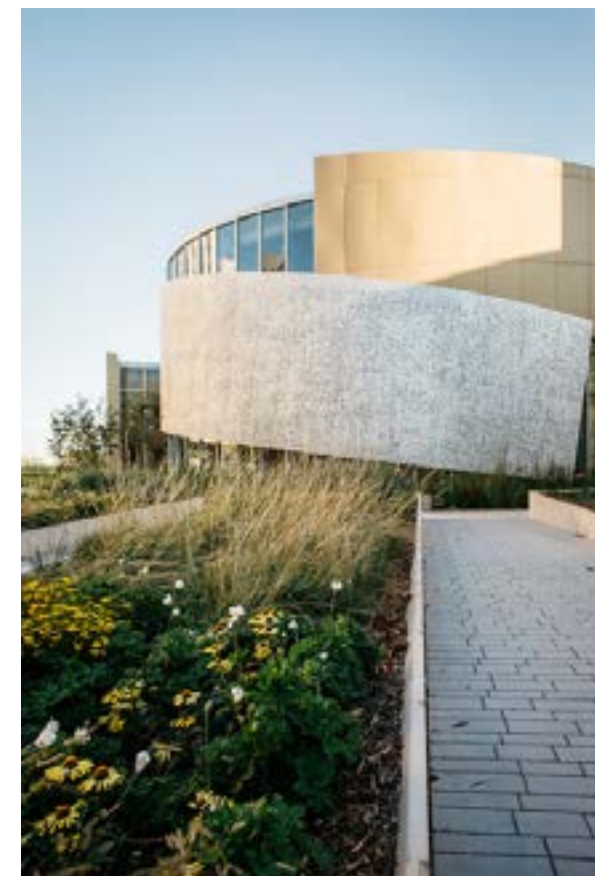
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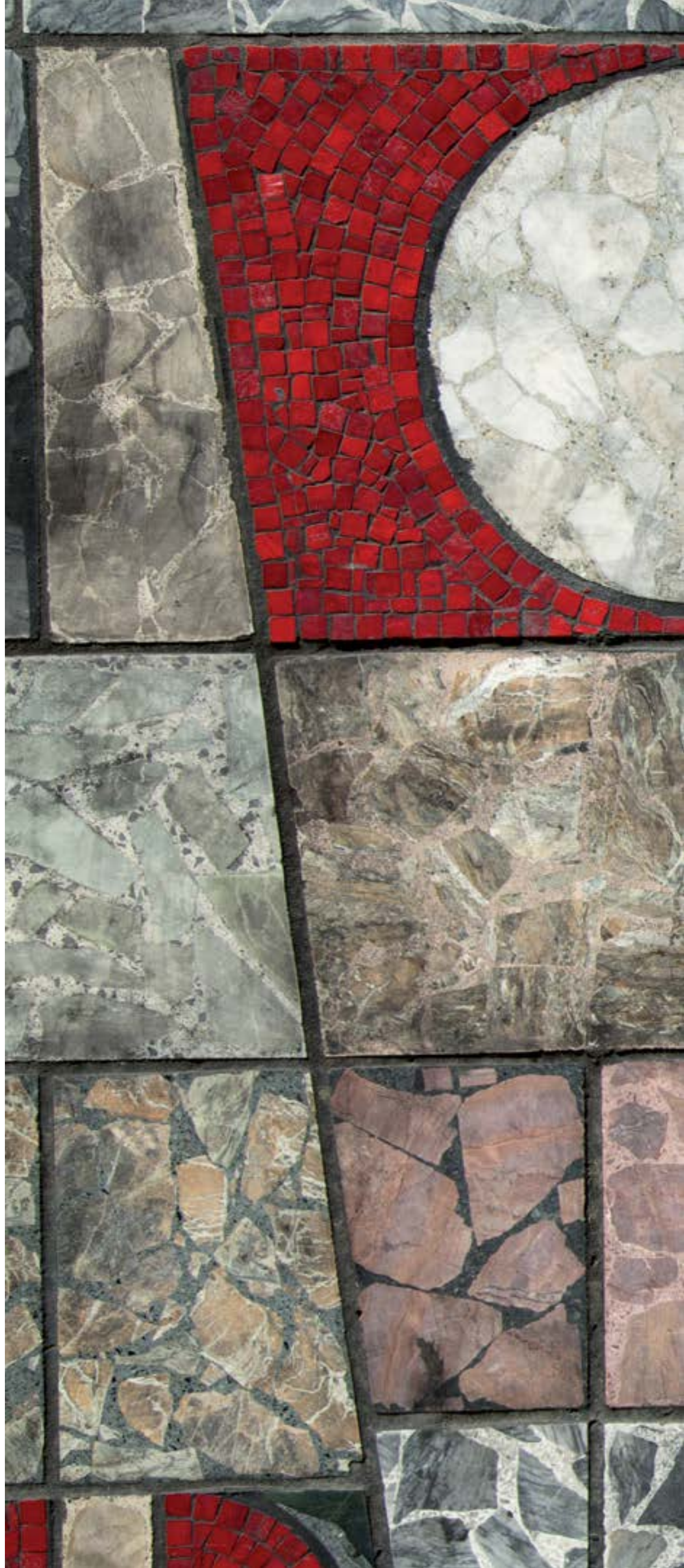
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CREDITS

DIALOG

Architecture, Interior Design, Landscape Architecture, Structural Engineering, Mechanical Engineering, Electrical Engineering

LEDCOR DESIGN-BUILD (ALBERTA) INC.

Design-Build Contractor

SPECIALTY CONSULTANTS

STANTEC - Audio/Video/Communications

FFA CONSULTANTS - Acoustical Engineering

ASRA - Security Consulting

BURNSTAD CONSULTING - Food Services Consulting

MORRISON HERSHFIELD - Building Envelope Specialist

BUNT & ASSOCIATES - Transportation Consulting

GABRIEL MACKINNON - Lighting

DOUG WELCH DESIGN ASSOCIATES LIMITED - Theatre



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