



# THE LIVING BUILDING CHALLENGE



## The Calgary Zoo is striving to meet some of the most advanced green building standards in the world.

We've pursued the Living Building Challenge, by ensuring that Panda Passage is efficient, sustainable, healthy and beautiful.

The Living Building Challenge is a non-profit, international building certification program promoting sustainability in construction. It bases its standards on the metaphor of a flower: each of its petals is a different aspect of sustainable, innovative construction.

### The Place Petal

#### Limiting Growth

To create Panda Passage, the Calgary Zoo chose to renovate an existing structure rather than disturb the river habitats of our surroundings. (Though you might not recognize it, this building has been here in some form since the 1950s!)

#### A Habitat Exchange

The Calgary Zoo has set aside 6,870 m<sup>2</sup> of natural habitat to offset the footprint of Panda Passage.

#### Human-Powered Living

Our city has beautiful bike trails, and we've installed bicycle racks at our North Gate to encourage Calgarians to visit us by bicycle.

### The Materials Petal

#### A Responsible Industry

All wood used in Panda Passage meets the Forest Stewardship Council's standards for sustainably harvested forest products. We salvaged several laminate beams from the building's previous life.

#### Our Carbon Footprint

We have performed a full carbon footprint analysis of Panda Passage and purchased carbon offsets to remain carbon-neutral.

#### Sourcing Locally

We required our contractors to trace the sources of all materials used, to ensure that the materials traveled the least possible distance to their destination here.

#### Net Positive Waste

We recycled over 99% of our construction waste—in creative ways. Leftover steel posts have become decorative "bamboo", and we even managed to sell some of our old fenceposts on Kijiji!

#### A Commitment to Greener Construction

To build Panda Passage, our design team rose to the challenge of finding sustainable alternatives to traditional building materials. All of our wood products are free of added formaldehyde and our lighting features LEDs instead of fluorescent lamps.

#### Red List

The LBC's Red List is a list of over 700 chemicals with the greatest impact on humans and ecosystems. The designers, suppliers, and builders were challenged to eliminate these chemicals through innovative design ideas and creative product substitutions.

### The Equity Petal

#### JUST Organizations

Our partner, Mission Green Buildings, is the first JUST-labeled company in Calgary, for its commitment to transparent and socially-responsible business practices.

#### Creating Human-Friendly Spaces

Panda Passage is a pedestrian-friendly space, with meandering pathways and multiple viewing angles. We've tried to make it easy for you to see the pandas, and interact with each other - Panda Passage is designed to meet Alberta's Barrier-Free Design Guidelines.

#### An Equitable Investment

The Calgary Zoo supports panda research and forest conservation, in Canada and around the world.

### The Beauty Petal

#### Beauty and Spirit

The Panda Passage experience is designed to celebrate culture, spirit and place by highlighting giant pandas and the art and architecture of their home in China.

#### Inspiration and Education

The Calgary Zoo has a long history of inspiring and educating Calgarians, and Panda Passage—with its educational signs, website and innovative interpretive programs—is no exception.

### The Health and Happiness Petal

#### A Natural Design

The entire Panda Passage experience has been designed with an eye to natural shapes and forms, to take advantage of natural light, air and space and to foster a feeling of connection to the nature and culture of the bamboo forests of China.

#### A Healthy Indoor Environment

Panda Passage has fresh, clean air to breathe. All materials—adhesives, paints, coatings, even the ink on the interpretive signs—were selected for their ultra-low emissions. And, we'll be keeping the place tidy using a green cleaning program.

#### A Civilized Environment

We've designed Panda Passage with skylights to take advantage of Calgary's abundance of natural light. And we've ensured that staff "habitats" have windows that open to let in fresh air.

## How did we do? Here are some highlights:

### The Beauty Petal

- Of surveyed guests and staff, we scored an average of 8.6 out of 10 (with 10 being excellent) on how well we achieved a cultural feel in the building's design.
- Panda Passage was the most visited and highly rated exhibit in 2018 with 96% of guests visiting and 74% of exit survey respondents rating their satisfaction a '9' or '10' out of 10.
- Of surveyed guests and staff, we scored an average of 8.7 out of 10 (with 10 being excellent) on how well we achieved a natural feeling within the building and experience.

### The Place Petal

We renovated our building instead of building new.

### The Materials Petal

- In this imperative, the requirement is a minimum of 20% of materials to be acquired within 500km of the site, we achieved over 54%.
- Overall waste diversion for the project was 99.79% which consisted of:
  - Metals – 99.897%
  - Paper & Cardboard – 98.990%
  - Soil & Biomass – 100.00%
  - Rigid Foam, Carpet & Insulation – 95.003%
  - All other – 99.982%