Elk Island National Park Youth Hostel, Alberta, Canada

DESIGN STATEMENT

Using animals to represent two seasons of the year. For instance, the Bison for winter and the antelope for summer, containing an origin to generate the shape of the buildings.

CONCEPT WINTER DESCRIPTION

The dominant concept is to develop and to mimic a Bison in Winter form. This project is inspired by the American Wood Bison of Alberta’s Woodland.

The Bison is a herbivore, existing in the cold climate, and getting involve in the circulatory system of the region. The buildings are designed by simulating the figure of this animal, to get the Bison form by aligning to the natural history of the region.

This strategy forms the herd of buildings on the side of the Bison skin.

Developing data and using the concept for this design, the posture of the Bison skin is keeping the winter cold from the walls and keeping support. Using the structure of the Bison skin, helps to encase a silhouette capable of covering the Bison skin structure.

This strategy forms the herd of buildings on the side of the Bison skin, containing its natural history of the region.

STRUCTURE BUILDING PASSIVE FORM

The inclined surface system allows to maximize the view and accessible sliding doors, the inclined surface system allows to maximize the view at the winter season.

THERMO-FIBERGLASS/TROMBE WALL

The inclined surface system allows to maximize the view and accessible sliding doors, the inclined surface system allows to maximize the view at the winter season.

THERMAL HEAD RADIATION

The inclined surface system allows to maximize the view and accessible sliding doors, the inclined surface system allows to maximize the view at the winter season.

FIBERCONCRETE FLOOR

The inclined surface system allows to maximize the view and accessible sliding doors, the inclined surface system allows to maximize the view at the winter season.

太阳能电池板位于办公室内并固定在墙面上，以确保太阳能的有效使用和分布。太阳能电池板和建筑物的外表面之间设有绝缘材料，以防止冷热交换，从而保持室内温度。
CONCEPT SUMMER DESCRIPTION

The wing of the Cowbird represents summer, when the birds are in full swing to interact with the Bison. Having the wing open exhibit the bird in maximum comfort mimicking the shape of a bird on top of the Bison. Cabin Bison is designed to provide a spectacular appreciation of the environment to the visitor and the open space with the nature when the wing is fully open.

Visitors can take a more profound view of the beauty that the building reflects. Visitors pass through the hostel and the main entry building.

CABIN MECHANICAL FUNCTION DESCRIPTION

Visitors are able to open a mechanical top wing shade, and frontal wall cover that is designed with a mechanical system to open side shade, and closed with the wind. Roof extension provide shade, obstructing the sun rays touch the wall. Thermo-Fiberglass/Trombe wall, provide heat radiation to the building and reflecting environment around.

SOLAR CELL (solar panel)

The installation of solar cells/panels on the angular triangular pergola, was raised to provide power at no cost. These solar cells/panels will provide managed power in the maintenance/electrical room supporting main rooms and buildings.

ROOF EXTEND SHADE SYSTEM

Cross-laminated timber is a wood panel product made from gluing together layers of solid-sawn lumber, i.e., lumber cut from a single log. is a large-scale, prefabricated, solid engineered wood panel. Lightweight yet very strong, with superior acoustic, fire, seismic, and thermal performance, is also fast and easy to install, generating almost no waste onsite.

EXTRUDED DIAGRAM PASSIVE BUILDING PRINCIPLES

Entry Building, Dining Building, Wet Building, Cabin. Wall folding bunk-beds and storage space. Insulated Thermal Slab, Concrete Floor, Cold absorbing surface. Frame Cap Ventilation. Insulated Roof.

SUMMER COOLING AIR FLOW

Thermo - Fiberglass Wall, Insulated Wall, Open Sliding Glass Doors/Wall (Balanced Ventilation), Frame Cap Ventilation.

COOLING AIR FLOW ROOF SHADE SYSTEM

Open Vent Window, Insulated Wall, Thermo - Fiberglass Wall, Roof Shade, Masonry Wall, Concrete Roof.