

VOL DU MONARQUE

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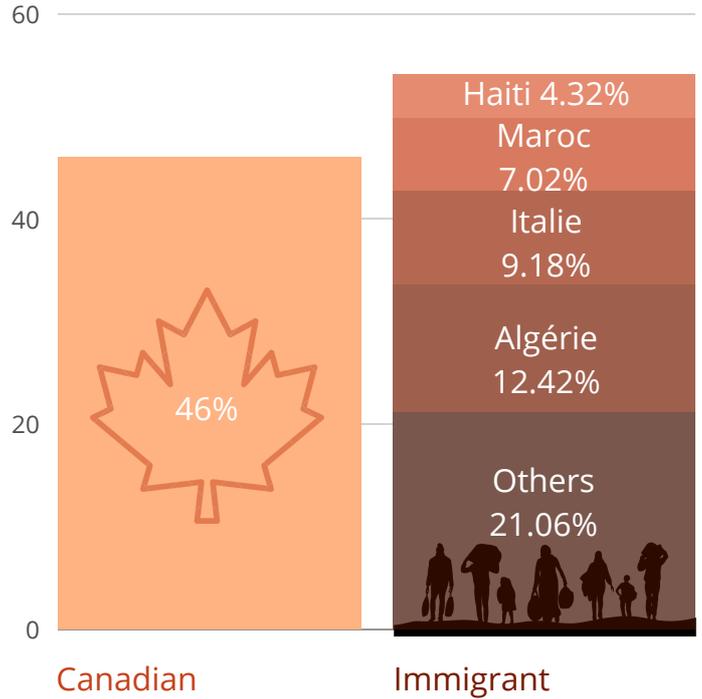
Background information

Context

The Saint-Léonard-de-Port-Maurice parish was established in April 1886 and was later renamed the City of Saint-Léonard-de-Port-Maurice on March 5, 1915.

Until the mid-twentieth century, Saint-Léonard was a rural francophone hamlet with a population of less than a thousand people. The town underwent significant urban development throughout the 50's until the late 70's, due to the expansion of Montreal and a large influx of immigrants. This wave of immigration brought with it numerous cafes and restaurants that enriched the area's cultural life.

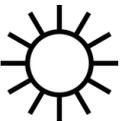
The Saint Leonard borough is now known for the Italian heritage that contains, with people even calling "via Italia" to Jean Talon Street, one of the main roads in the city.



A. Immigration rate table

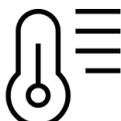
Climate

In Montreal, summers are long and hot; Winters are freezing, snowy and windy and it is partly cloudy all year round. Over the course of the year, the temperature generally varies from -13°C to 26°C and rarely drops below -23°C or rises above 30°C.

 Average yearly daylight hours: **7.4 hours**
Longest day duration: **11 hours**
Shorter day duration: **4 hours**

 yearly snow pattern: **5.8 months (October 31 - April 24)**

 yearly rain pattern: **7.2 months (April 11 - November 18)**

 Average yearly temperature: **7.1 °C**
Warmer months: **May - September**
Colder months: **October - April**

 Coldest yearly temperature: **-22.2 °C**
range: **-15 °C - 4.7 °C**
Coldest month: **January**

 Hottest yearly temperature: **27.2 °C**
range: **17.6 °C - 24.6 °C**
Hottest month: **July**

Monarch Butterfly

Objective

The fundamental of this project is to establish an environment that celebrates local natural wealth and promotes environmental awareness, while providing a harmonious coexistence between the urban, the natural and the people who live in the area.

Concept

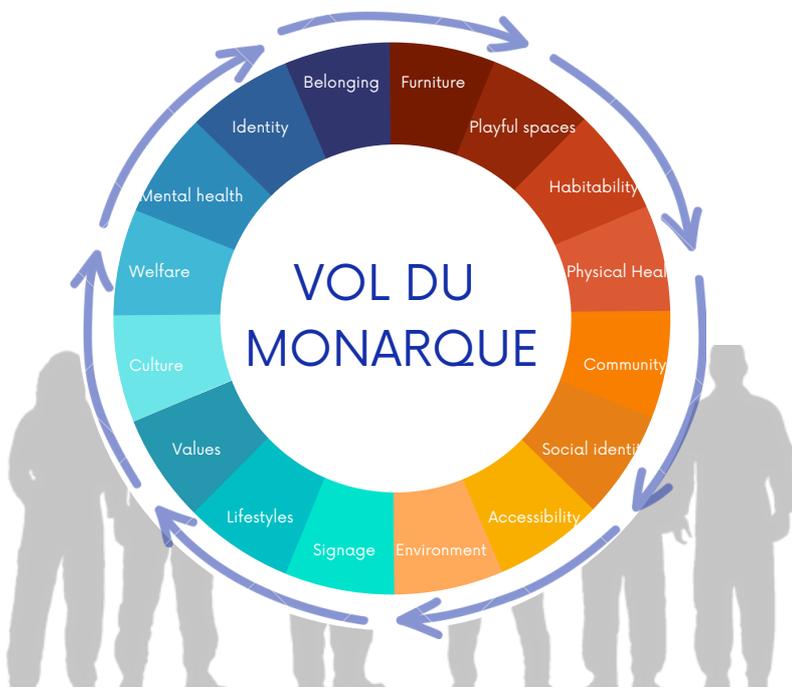
The interesting migration of the monarch butterfly, which travels thousands of kilometers from Canada to Mexico and back, serves as an inspiration to understand and relate the magnitude of migratory movements that take place within Canadian territory. This migratory phenomenon is a mirror to comprehend and appreciate the diversity of cultures that integrate the Canadian population.

This context makes the area function as a metaphor for a sanctuary that welcomes immigrants just as it happens naturally with the monarch butterfly. This similarity transforms the space into an authentic sanctuary, where both butterflies and immigrants are welcomed with hospitality.



Justification

Likewise, our focus on highlighting the life cycle of the butterfly, especially during the summer, is intrinsically linked to the project's temporality. Given the extreme low temperatures during winter, maintaining an active space is complicated. Therefore, we have chosen a season of the year that allows both the community and local biodiversity to participate and enjoy at any time.



Vegetal palette

The proposed plant palette includes native species such as *Acer nigrum*, a deciduous tree with distinctive orange-toned leaves that evoke autumn, which will help give the environment its own identity.

We decided to incorporate *Asclepias*, an important species in the monarch butterfly's diet. Considering the notion of a sanctuary, it is beneficial for us to have butterflies in the area, as well as to create a space that is in constant motion, ephemeral, and beautiful.



Acer nigrum



Asclepias syriaca



Celtis occidentalis



Lechillo

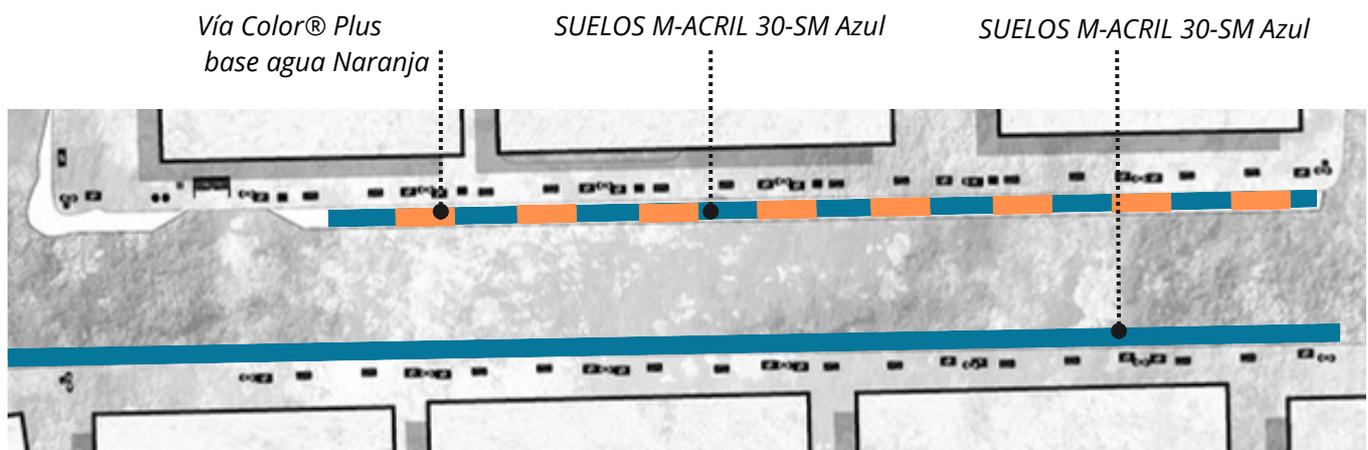
Color palette

The color selection is based on warm tones extracted from the vibrant palette of the monarch butterfly, complemented with cool tones to create an attractive contrast that symbolizes hospitality and openness to other cultures.



Pavement color

The use of blue in the pavement allows us to reduce the increase in temperature due to solar radiation, reducing it by up to 5%. However, to emphasize the areas in which "the amaca" will be located will be the orange spaces.



Urban furniture

Relationship between Project Concept and Furniture

The furniture designed for the project aims to reinforce the sense of belonging and the sense of community that the project intends to create. The Monarch butterfly and its migration are directly related to the migrations observed in the intervened area. Therefore, the project's furniture is crafted with shapes and colors that evoke the Monarch butterfly.

Furthermore, each piece of furniture serves specific functions and offers benefits to the area's users, striving to foster an atmosphere of community and belonging.

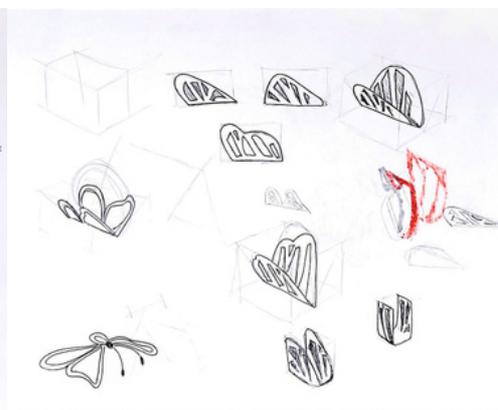
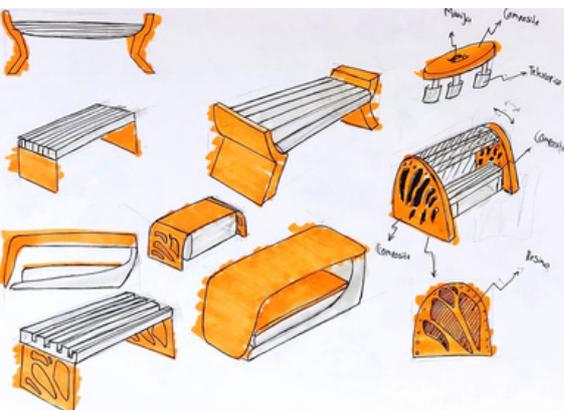
The Process and Evolution of Special Furniture Design for the Project

The furniture design process is divided into three stages: Research, Brainstorming and Rapid Sketching, and finally, Modeling and Rendering.

In the research phase, the objective was to identify the issues and deficiencies on the street, as well as the existing furniture. Local technologies and materials were also explored to incorporate them into the furniture design. It was observed that existing furniture had a semi-organic design, featuring curves and straight lines.

For the second stage of brainstorming and rapid sketching, the following objectives were taken into account: the use of colors and abstraction of the Monarch butterfly's shape, resistance to cold and snowy climates, comfort and ergonomics, primary and secondary functions, tactical urbanism, local technologies and materials, and the creation of a sense of belonging.

During the sketching process, various forms were iterated upon to achieve an optimal result.



Urban furniture

Functions of Each Piece of Furniture

A) Benches: The bench design incorporates the Monarch butterfly's wing pattern on the sides. It also offers a secondary function, providing shelter during snowstorms by using a thermal cover that can be extracted from the bench's side.

Materials: Metal, high-density polyethylene (HDPE) fabric, and wood composite.

B) Bus Stop: This bus stop design follows tactical urbanism principles, providing a lightweight, easy-to-assemble alternative to conventional, bulky structures. Its side panels mimic butterfly wings on a larger scale and employ transparent orange resin for improved visibility of approaching buses. Moreover, it functions as a storm shelter, with a foldable curtain (made of specified material) allowing users to maintain higher interior temperatures.

Materials: Wood, metal, HDPE fabric, and wood composite.

C) Mail Module: Given that it is an object used daily, efforts were made to raise awareness about the lack of trees through a holographic projection integrated into this element.

Materials: Metal, cristal and 3D projectors

D) Street Lights: Similar to traffic lights, existing poles are used, with clamps making installation straightforward. The street lights incorporate the butterfly pattern and allow for height adjustment according to the space.

Materials: Metal sheets, metal pipe and LED bulb.

F) Trash Bins: In line with tactical urbanism, existing trash bins are modified with lids inspired by butterfly wings to prevent snow accumulation.

Materials: Metal sheets and resin.



E) Planters: These planters aim to reduce heat islands by increasing the presence of flora in the area, with the primary plant being Asclepias, an essential part of the Monarch butterfly's diet.

Materials: Metal sheet and resin.



G/H) Bike Racks: This design allows for minimal space intervention since they are attached to the ground. The butterfly wings are abstracted while maintaining the furniture's familiarity.

Materials: Metal sheet.



i) Traffic Lights: Existing street poles are utilized for this design, implementing it quickly with clamps. The traffic lights feature a customized animation with the new Monarch-inspired identity, following the butterfly's pattern throughout.

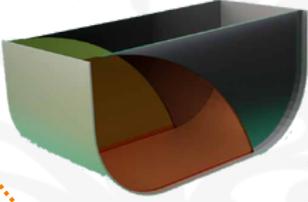
Materials: Metal sheets, metal pipes and LCD screens.

Materials

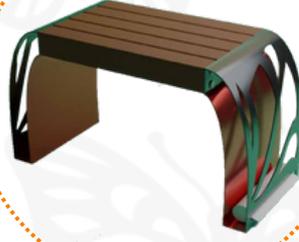
- **Metals** coated with resin-based enamel for corrosion protection.
- **Red cedar wood:** This lightweight, stable, and durable wood is used for wooden shingles and has natural protection against insects and fungi. It performs excellently in outdoor furniture and structures.
- **Epoxy resin with UV-resistant urethane:** Epoxy resin is a highly resistant and lightweight material. UV resistance is added with urethane.
- **High-density polyethylene (HDPE) fabric:** This fabric is a thermal insulator, maintaining a temperature 5 degrees higher inside.
- **Wood composite:** Physical blends of polymers with wood waste. Collaboration with local timber companies is considered for sourcing raw materials.

Urban furniture

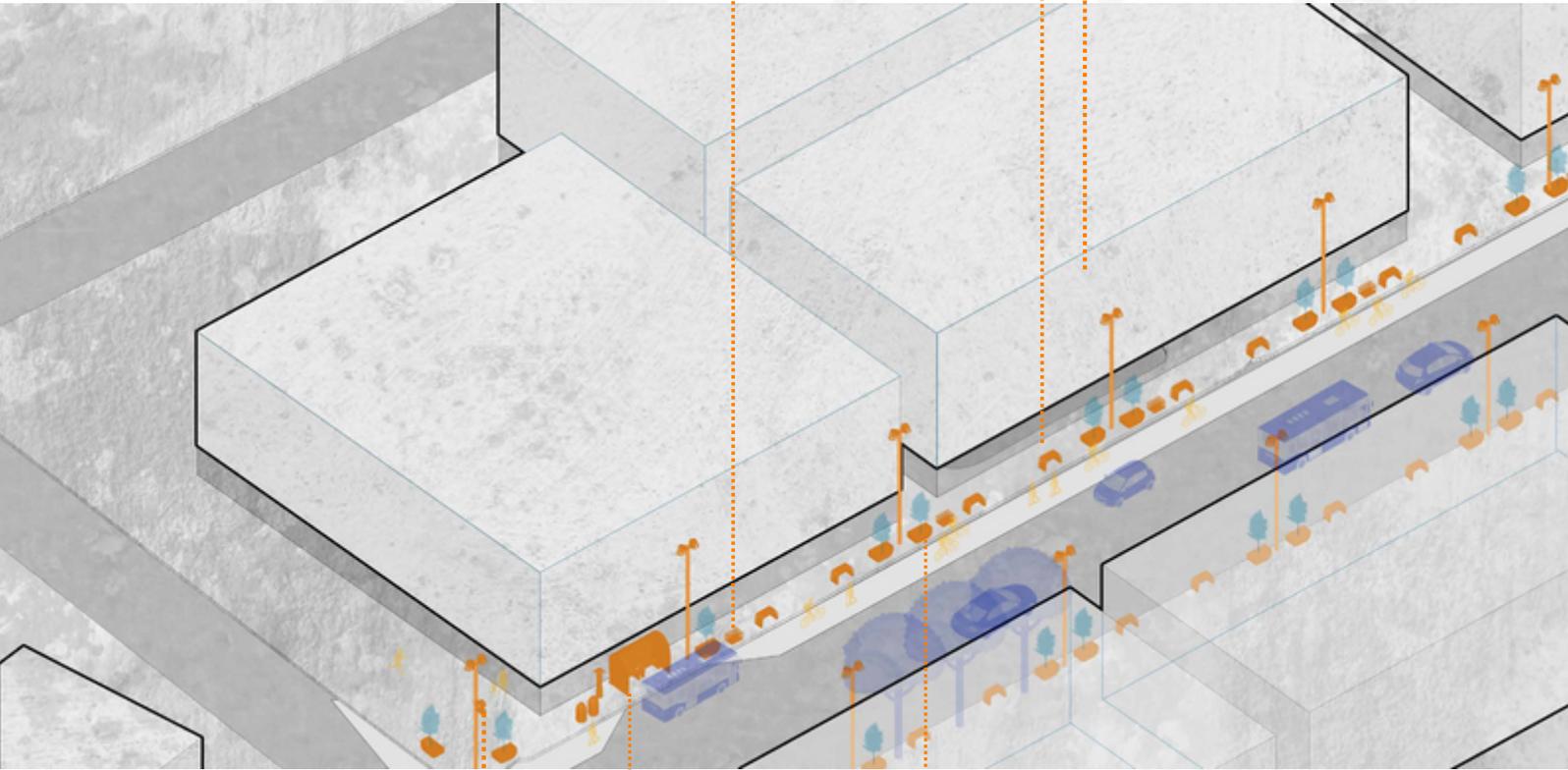
Flowerpot



Benches



Headlamps



Traffic lights



Bus Stops



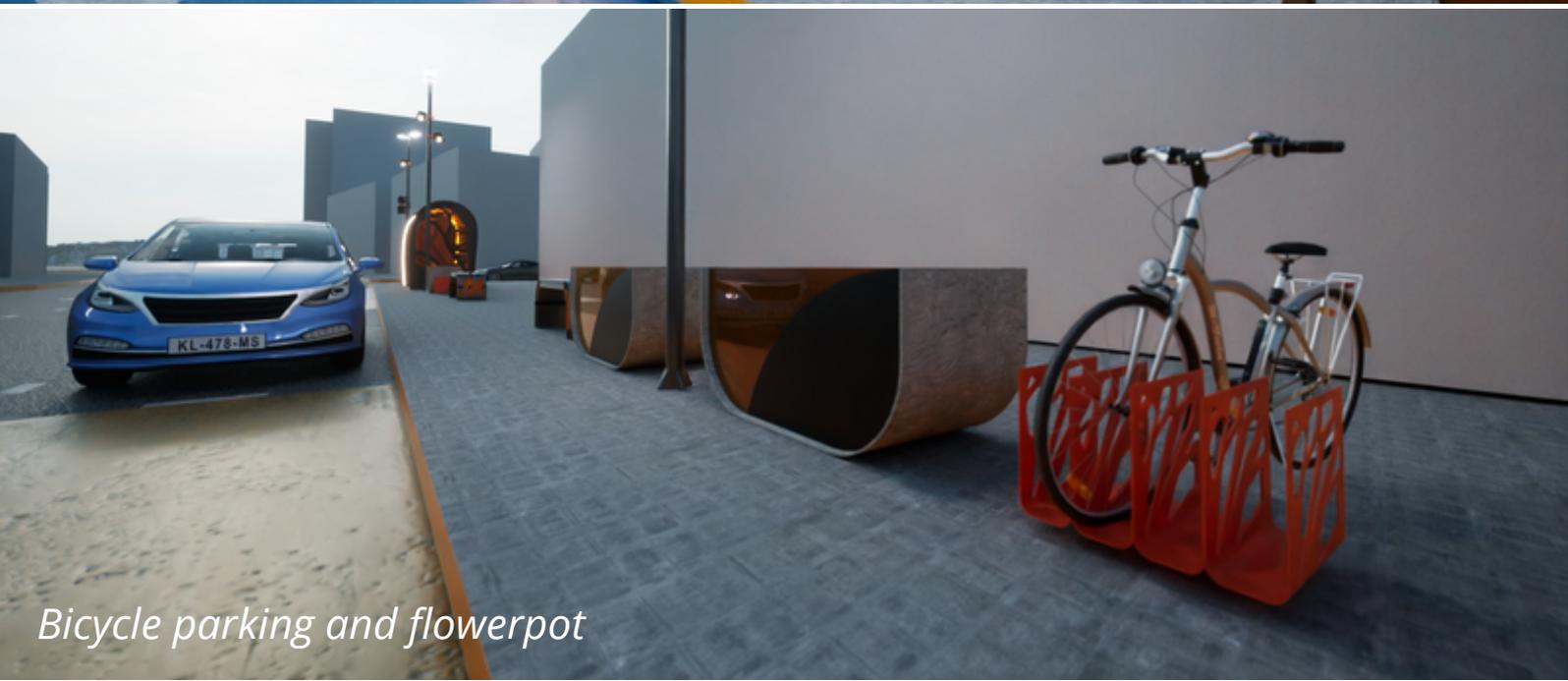
Bicycle parking



Headlamps and Traffic lights



Bus Stop



Bicycle parking and flowerpot



Render view of the furniture



Bus Stop Render

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