

*STREET DESIGN*

# BLUE MORPHO

*BRAZIL*





In the heart of the bustling metropolis of Curitiba, Brazil, lies a street that faces a number of urban challenges that have affected both its residents and visitors over time. This street, known as "R. Sen. Alencar Guimarães", is characterized by the lack of safe sidewalks, the absence of trees and vegetation, and poor organization of vehicular and pedestrian flow.

The lack of safe sidewalks forces pedestrians to face a constant flow of vehicles, turning each crossing into a risky act. The absence of vegetation has given rise to urban heat islands, where burning asphalt reflects the relentless sun, making high temperatures unbearable.

Additionally, air pollution due to vehicular traffic negatively affects air quality and community health.

The street's extensive commercial area, while a source of economic activity, also contributes to visual and noise pollution, with numerous signs and billboards competing with the city's natural beauty.

Despite these challenges, there is an opportunity to transform this street into an example of a more sustainable and pedestrian-friendly urban environment.

Reforestation and better traffic organization could alleviate heat and congestion problems, while environmental conservation and harmonization with nature could return this artery to its former charm. Curitiba has the possibility of reviving this street, turning it into a space where the city and nature can coexist in harmony.



# NORMATIVE ANALYSIS

**Art. 6 For the construction or reconstruction of sidewalks on roads** whose predominant layout is In pavements with natural stones, the following aspects must be observed:

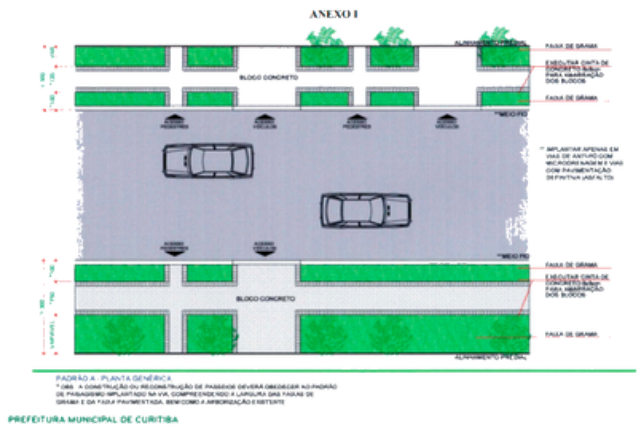
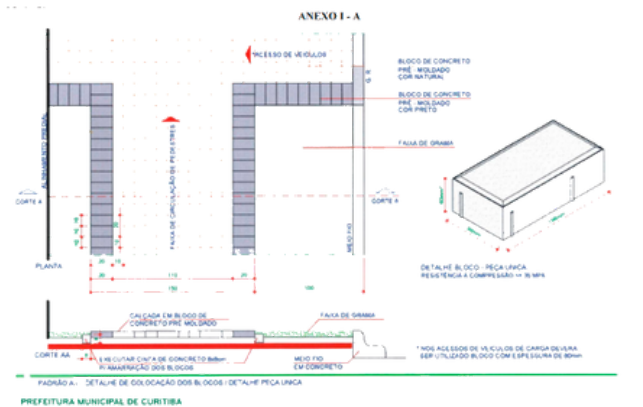
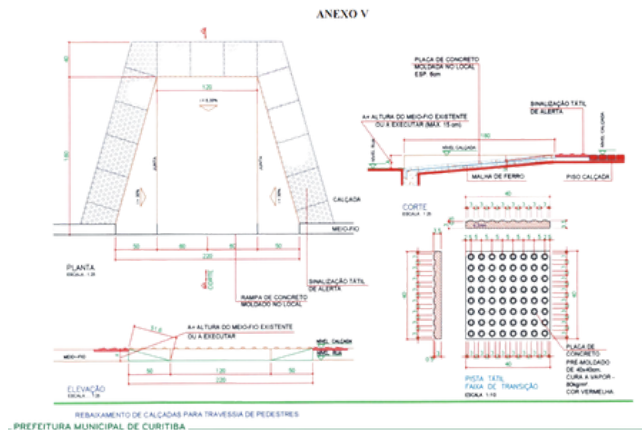
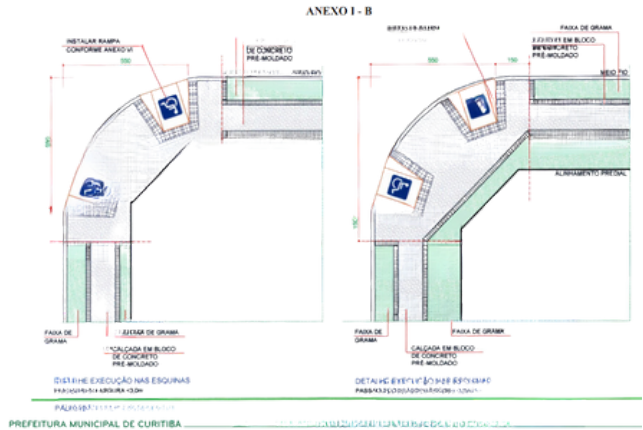
**II. the landscape** pattern implemented on the road, which includes the width of the grass strips and The width of the free circulation lane must be maintained;

**Art. 8 The construction or reconstruction of sidewalks** must comply with the landscape standard Predominant area deployed on the road, comprising the width of the grass strips and the road-free strip. existing circulation and afforestation.

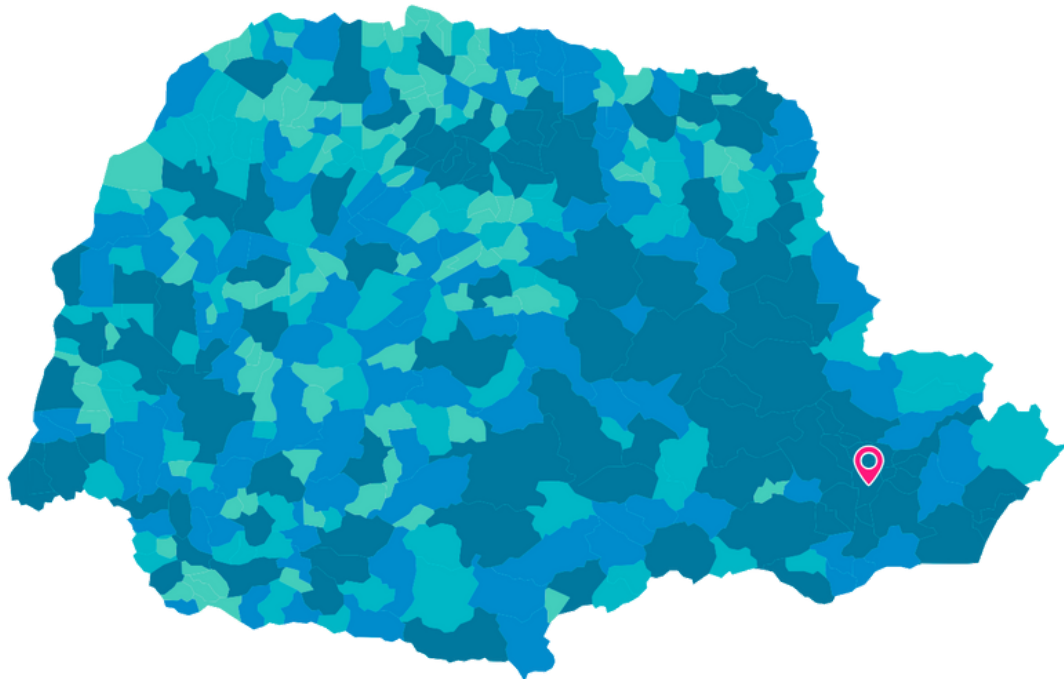
**Art. 10 On roads equipped with temporary paving** (anti-dust), under construction or reconstruction The trip must comply with Standard A or C, regardless of the license issued by SMU.

**Art. 12 Any type of intervention in the bike lanes** installed in walking area.

**Art. 13 In the existing routes,** the Municipality of Curitiba will include the execution of accessibility ramps for the physically disabled, at intersections, through the Works Plan of the Administration.



# ANALYSIS OF THE SOCIAL ENVIRONMENT



- Population density [2022]

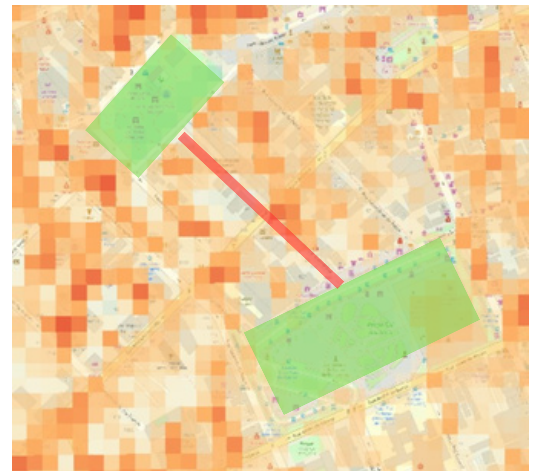
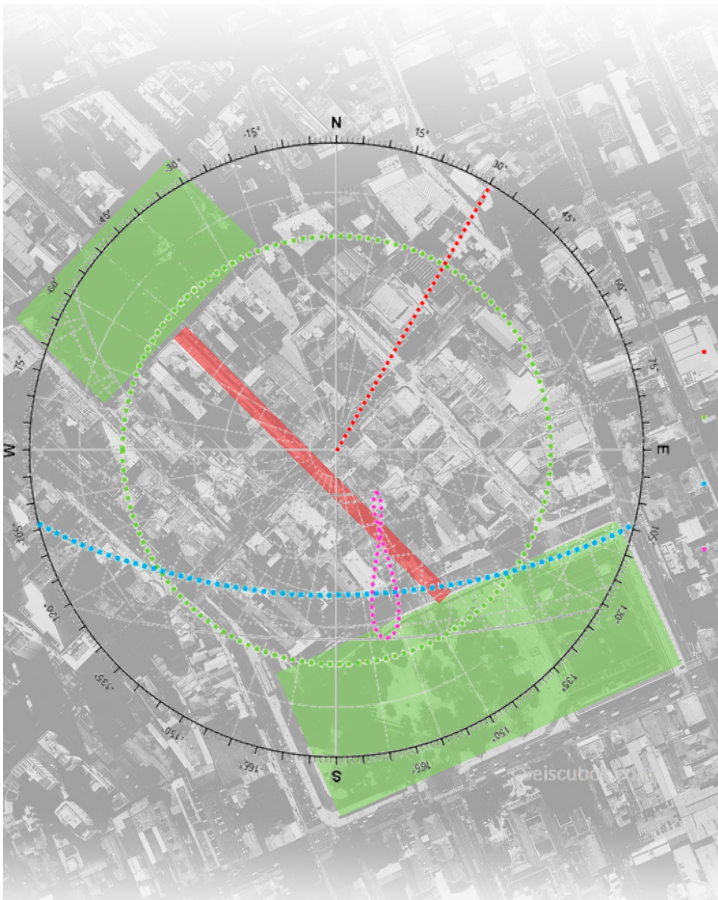
**4,078.53 inhabitants per square kilometer**

- up to **16.23** inhabitants per square kilometer
- up to **25.49** inhabitants per square kilometer
- up to **43.08** inhabitants per square kilometer
- More than **43.08** inhabitants per square kilometer

<https://cidades.ibge.gov.br/brasil/pr/curitiba/panorama>



# ANALYSIS OF THE BIOCLIMATIC ENVIRONMENT



- Heat islands are urban or metropolitan areas that experience higher temperatures compared to their surrounding areas. These areas are characterized by their high heat and are the result of the combination of various factors.

- The climate in Curitiba is humid subtropical, with warm summers and cold winters. During the summer, the city is more likely to experience heat islands, as temperatures can rise significantly, especially in densely populated urban areas.

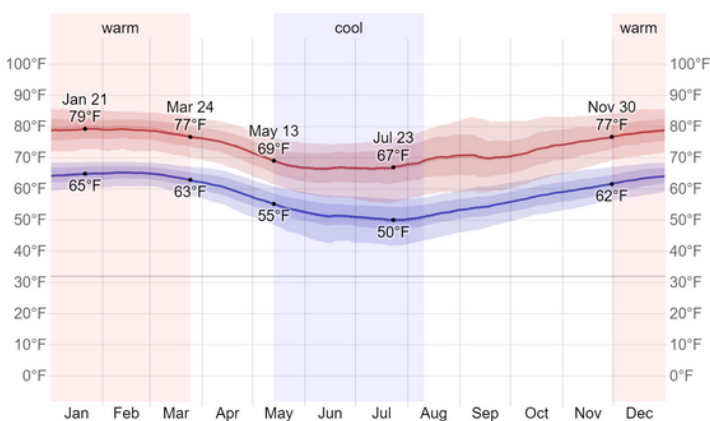
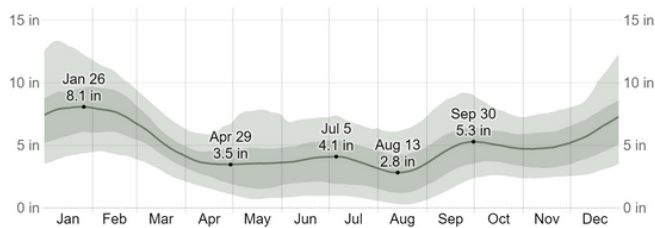
- Curitiba has implemented various urban planning and sustainability strategies. This includes creating more green areas, promoting tree planting, designing sustainable buildings and encouraging practices that reduce the city's environmental and climate impact.

- The temperate season lasts 3.8 months, from November 30 to March 24, and the average daily maximum temperature is more than 25 °C.

- The warmest month of the year in Curitiba is February, with an average maximum temperature of 26 °C and minimum of 18 °C.

- The cool season lasts 2.9 months, from May 13 to August 10, and the average daily maximum temperature is less than 21 °C.

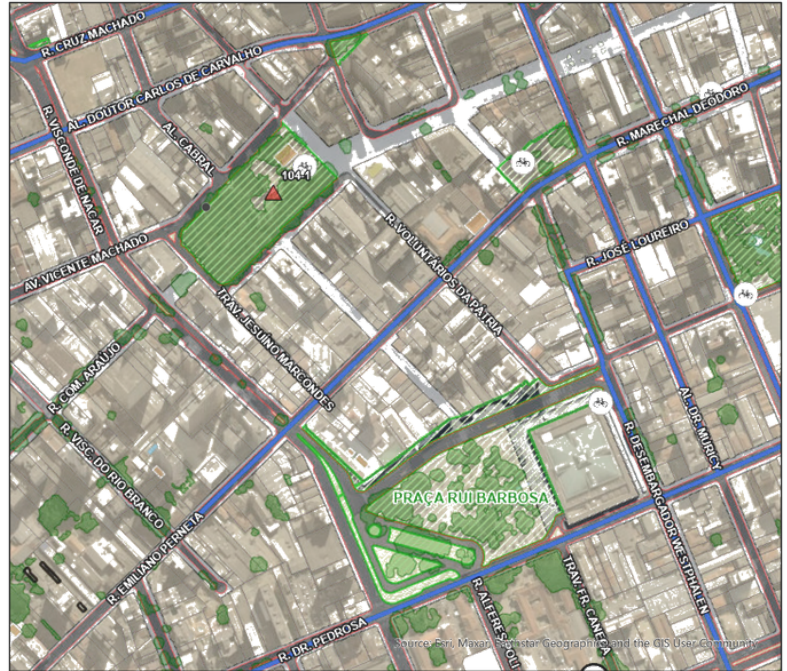
- The coldest month of the year in Curitiba is July, with an average minimum temperature of 10 °C and maximum of 19 °C.






# ANALYSIS OF THE URBAN ENVIRONMENT

R. Sen. Alencar Guimarães - Centro, Curitiba - PR, 80010-070, Brasil

<https://geocuritiba.ippuc.org.br/basecartografica/>



-  Main Road
-  Secondary road
-  Park Osorio square

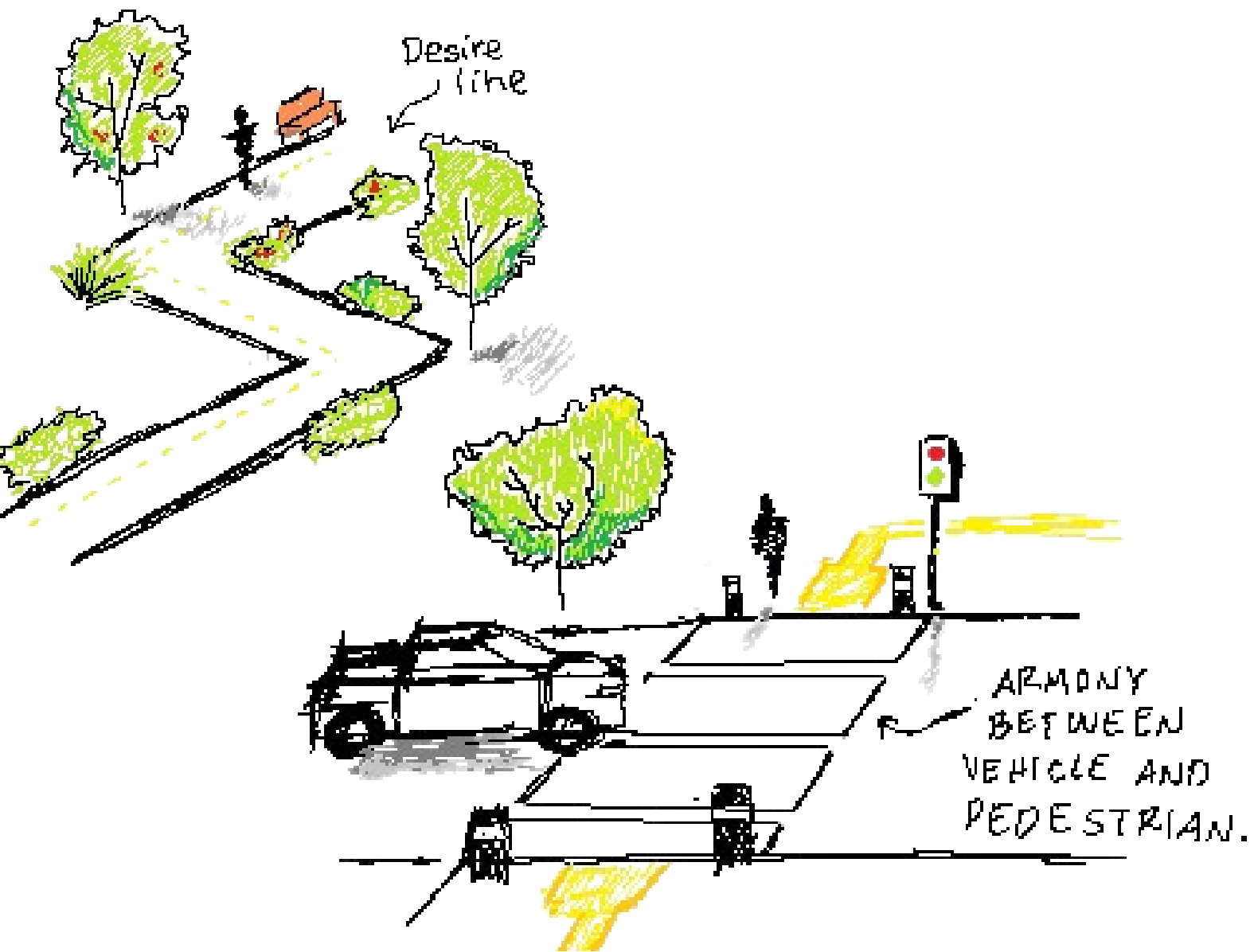
-  Square and Historical area
-  Dual pedestrian -vehicular roads



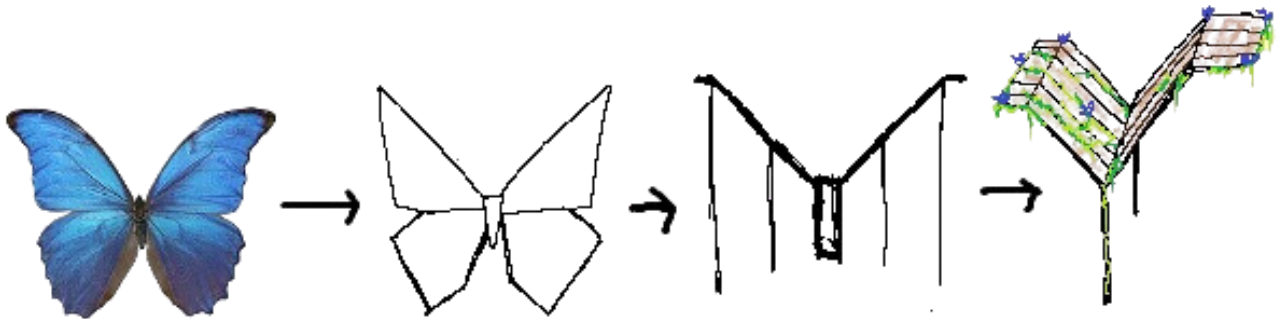
# CONCEPTUALIZATION

The creation and maintenance of green areas in urban environments are essential to satisfy a series of needs that go beyond simple aesthetics. These spaces play a crucial role in improving people's quality of life, promoting harmony between the built environment and nature. Next, we will explore how green areas can address various needs in an urban context, from generating shading to promoting good coexistence between pedestrians and vehicles, and preventing city sprawl.

Green areas offer a valuable source of shade in urban environments, which is especially beneficial in hot climates. The shade provided by trees and vegetation not only increases thermal comfort, but also reduces exposure to direct sun, reducing the risk of heatstroke and sunburn. Additionally, shaded areas are conducive to outdoor activities, such as walks and exercise, which encourage a healthier lifestyle.



# BLUE MORPHO



Guided by the culture of this country and its great care and appreciation for the flora and fauna, guided by one of its endemic animals, the butterfly called: "Blue Morpho", we decided to unite it as a way to resolve the heat island part, we decided implement the shape of its wings to create shadow spaces for pedestrians and thus create a route full of sensations by playing with shadows, heights, textures, colors and sounds. This pergola works according to the seasons of the year, it has a mechanism which allows you to play with the inclination of the pergola, thus allowing greater use of the shadows and inviting users to stay in it, also simulating the flapping of a butterfly's wings.

