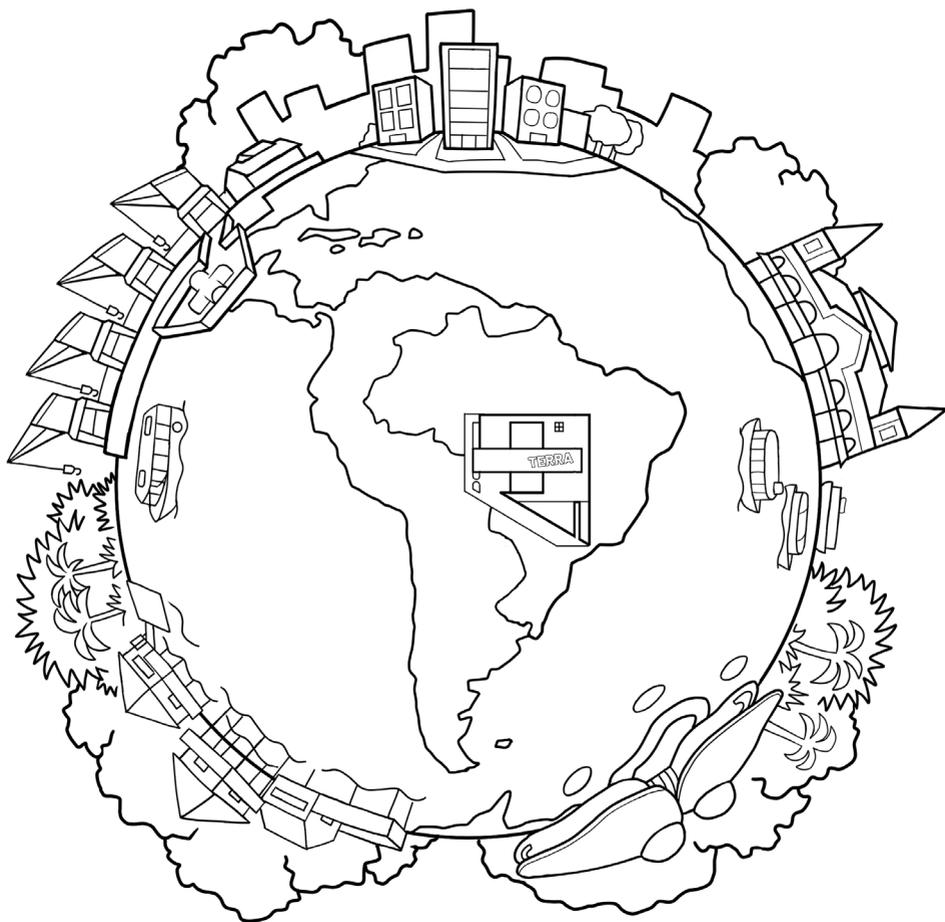


Brazilian Ministry of Culture and MuBE present

Educational material

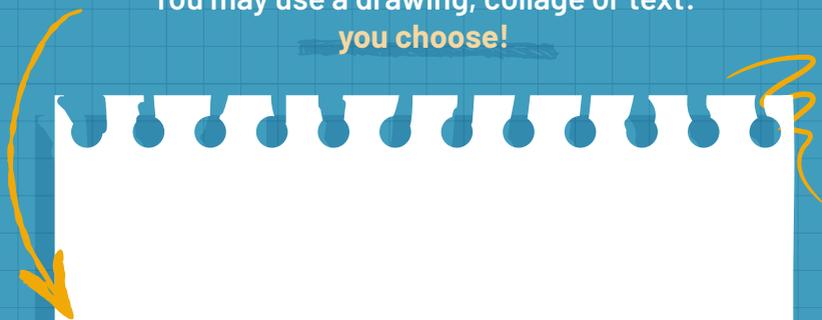
THE THIRD MARGIN OF THE CITY: PAULO MENDES DA ROCHA AND THE CHALLENGES OF LIFE ON THE PLANET



Coloring cover

DO YOU WANT TO TELL US A LITTLE ABOUT WHERE YOU LIVE?

You may use a drawing, collage or text:
you choose!



WHAT YOU HAVE IN YOUR HANDS

We created this publication to talk to you, the student, about the urban environment. We take a tour through the main topics of COP 30, held in Belém, Brazil, and based on the content of the exhibition “**The third margin of the city: Paulo Mendes da Rocha and the challenges of life on the planet**”, on display at MuBE, in São Paulo, we will talk about cities and the immense challenges that climate change presents to us.

For those who visited us at the museum, we invite you to continue this conversation. For those who were not there in person, we invite you to start one. **Shall we begin?**

Flavia Velloso, President of MuBE

IS COP A MATTER FOR YOUNG PEOPLE AND CHILDREN?



YES!

The fires in the Amazon rain forest, the floods in Porto Alegre, the uncontrolled growth of cities, polluted rivers, lack of sanitation, and the degradation of our seas are examples that show **how urgent the environmental issue is, affecting not only the present but, above all, the future of life on the planet**. Therefore, it is so important that young people and children participate actively, in an organized and informed way, in this debate. After all, there are many important choices to be made now, the effects of which will be felt by future generations.

DO YOU KNOW WHAT AN URBAN PLANNER DOES?

An urban planner **is a person who plans and organizes public spaces**, such as parks, squares, streets, and cities. Therefore, the role of the urban planner is increasingly important in adapting and planning cities to face the effects of climate change.



PAULO MENDES DA ROCHA

Architect, urban planner, and professor, Paulo Archias Mendes da Rocha was born in Vitória (Espírito Santo, Brazil) in 1928. He graduated from the Faculty of Architecture and Urbanism at Mackenzie Presbyterian University in São Paulo (1954). At age 29, he won the competition for the gymnasium of Clube Atlético Paulistano. He participated in the group that became known as the "São Paulo school" of architecture, led by Vilanova Artigas.

He designed schools for the public school system and became a professor at the Faculty of Architecture and Urbanism of the University of São Paulo - FAU/USP (1959). He was removed from his teaching activities between 1969 and 1980 during the military dictatorship (1964-1985) in Brazil, and served as president of the IAB/SP (Brazilian Institute of Architects) on two occasions: 1972-1973 and 1986-1987. In the late 1980s, he gained greater public recognition by winning the competition for the MuBE project. In the following decade, he carried out important projects in São Paulo, such as the renovation of the Pinacoteca do Estado de São Paulo (1993). His international visibility was amplified in 1997 with the Mendes da Rocha Special Room at the 10th Documenta in Kassel, Germany. In 2006, he received the world's most prestigious award for architects, the Pritzker Prize, and in 2016 he won the Golden Lion at the University of Venice, among many other international awards he won in subsequent years. He worked actively until his death in 2021.

For Mendes da Rocha, "The city is made more of people than of buildings," and with this thought, he designed various public spaces and reimagined the city as a place that should allow people to meet.

Throughout this material you will find several quotes and ideas from the architect and urban planner that guided the exhibition and our reflection on cities in their various dimensions.

“ **Society mobilizes
to transform...** ”

(Paulo Mendes da Rocha, in
a lecture at MuBE, 2019)



DO YOU KNOW MUBE ?

The Brazilian Museum of Sculpture and Ecology (MuBE) is a cultural institution located in the city of São Paulo, Brazil. It was inaugurated in May 1995, as a result of community mobilization seeking to prevent the construction of a shopping center on the site, as people wanted a better use for the area.

That's how MuBE was born. From the will of the people who, in a joint and organized way, chose to have a museum instead of a shopping center.

The building that houses MuBE was designed by architect Paulo Mendes da Rocha, and its garden by landscape architect and environmentalist Roberto Burle Marx. It is an all-concrete construction with straight, open lines, on three different levels. It has a large open span, spacious areas, and natural lighting in all spaces. In addition to the exterior area, MuBE also has a large interior area, with spaces for exhibitions, studios, offices, an auditorium, and a restaurant. But from the street, you can hardly see these areas, which are largely underground, respecting the geography of the land.

Its concrete floor in the exterior area, which from the street appears as a continuous block, is actually a large rainwater capture area, used to supply the museum's reflecting pools.

The MuBE building is considered one of the most important examples of Brutalist architecture, entirely made of exposed concrete, in the world.



DO YOU KNOW WHAT CLIMATE CHANGE IS?



Climate change refers to long-term transformations in temperature and climate patterns. These changes can be natural, such as through variations in the solar cycle. However, since the 1800s, human activities have been the main driver of climate change, primarily due to the burning of fossil fuels such as coal, oil, and gas. Burning fossil fuels generates greenhouse gas emissions that act like a large blanket around the Earth, trapping the Sun's heat and increasing temperatures.

Examples of greenhouse gas emissions causing climate change include carbon dioxide and methane. This comes from using gasoline to drive a car or coal to heat a building, for example. Deforestation can also release carbon dioxide. Landfills are a major source of methane emissions. Energy, industry, transportation, buildings, agriculture, and land use are among the main emitters. Climate change can affect our health, ability to grow food, housing, safety, and jobs.

(ONU / <https://brasil.un.org/pt-br/175180-o-que-sao-mudancas-climaticas>)



“ **A fundamental and perhaps irreplaceable idea for a conversation is to consider nature not simply as landscape, but as a set of phenomena.** ”

(Paulo Mendes da Rocha, excerpt from the video “Nature as a Project”)

RECENT CLIMATE EVENTS



We have frequently seen news of various climate events around the world during the year 2025 that have caused deaths and left thousands of people homeless.

The floods in Rio Grande do Sul and the droughts in the Amazon, in Brazil; the large-scale forest fires amidst strong heat waves in Europe, for example in Greece, Portugal, and Spain; and, in the United States, the devastating fire in Los Angeles, California.

These are warnings that cannot and should not be ignored.

COP30, IN BELÉM DO PARÁ, BRAZIL



What is known as the “COP” (Conference of the Parties) are the annual climate change summits, which usually take place in November or December.

The United Nations Framework Convention on Climate Change (UNFCCC) created the COP as the body responsible for making the decisions necessary to implement the commitments made by countries in the fight against climate change. The COP is composed of all countries that have signed and ratified the Convention. Currently, 198 countries participate in the UNFCCC, making it one of the largest multilateral bodies in the United Nations (UN) system.

(<https://cop30.br/pt-br/sobre-a-cop30/o-que-e-a-cop>)

WHAT ARE THE MAIN THEMES DISCUSSED AT COP30?

(<https://www.gov.br/mdr/cop30/perguntas-frequentes/quais-sao-os-principais-temas>)



- 01 Reduction of greenhouse gas emissions.
- 02 Adaptation to climate change - increasing resilience and reducing vulnerability.
- 03 Climate finance for developing countries.
- 04 Renewable energy technologies and low-carbon solutions.
- 05 Preservation of forests and biodiversity.
- 06 Climate justice and the social impacts of climate change.



In this material, we will focus on mitigation, adaptation, and technologies, which are more closely related to the theme of cities and our current exhibition.

WHAT ANCESTRAL PEOPLES TEACH US

Human beings are capable of inhabiting the planet without destroying the environment. Instead of leaving ruins, they can leave a forest as their legacy.

In 2024, as a contribution from MuBE to the preparations for COP 30, we presented the exhibition “Mupotyra: Amazonian Archaeology.” Organized in partnership with the Museum of Archaeology and Ethnology of the University of São Paulo (MAE-USP), and curated by Naine Terena, Carla Gibertoni, Eduardo Côes Neves, Guilherme Wisnik, and Ricardo Cardim, this exhibition stemmed from studies indicating that the actions of ancestral indigenous peoples were crucial in the formation of the Amazon Rainforest. Below, we reproduce excerpts from the text by the exhibition curators:

“We learn that the Amazonian biome is a pure fact of nature and that the indigenous peoples who inhabited it before the arrival of the Portuguese had a primitive culture, very distant from our idea of “civilization”. Today, with research done using new remote sensing technologies, traces of complex networks of paths and large human settlements are found in the Amazon, whose constructions were made of perishable materials, such as wood and straw.

Furthermore, the study of the so-called “Indigenous Black Earth,” coupled with the perception of the unique concentration of plant species in the forest, has shown that the forest, as we know it, is also a product of human activity.

That is, its current configuration is the result of long management processes implemented by the Amerindian peoples who have occupied and continue to occupy it over centuries. A quintessential result of multi-species webs of relationships between plants, animals, and humans, and therefore a biocultural heritage, the Amazon rainforest can also be read, in this light, as a kind of collective monument marked by the culture of difference and abundance – paradigms difficult to comprehend through the homogenizing thought of capitalism. This thought has led to continuous acts of destruction of this biome since the second half of the last century, as evidenced by the collection of objects belonging to botanist Ricardo Cardim.”

“ **The first and most fundamental architecture is geography.**”

(Paulo Mendes da Rocha)



“In Nheengatu, the Amazonian “general language,” Mupotyra means “to flourish.” In this exhibition, through archaeology, we revisit the past as a way to rethink history and, thus, imagine new futures. A call to conscience to reforest our minds.”

For comparison, the composition of the São Paulo Metro's G Fleet, which uses electricity as its power source, weighs 266,000 kg to transport approximately 1,500 people.

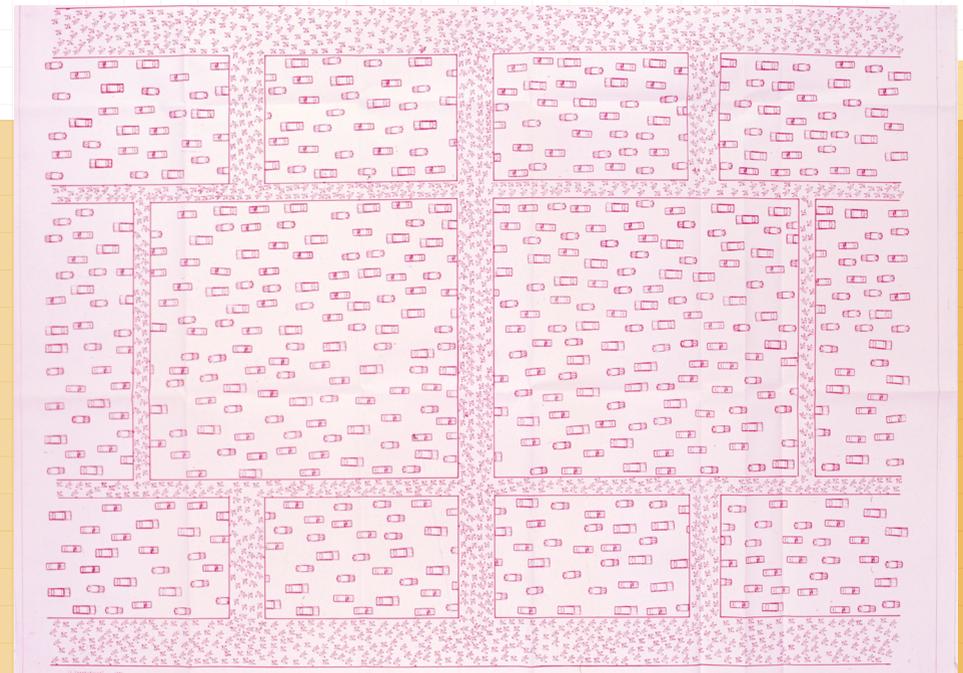
(Source: São Paulo Metropolitan Transport Secretariat
https://www.instagram.com/p/C3Dgk1nyBTq/?utm_source=ig_embed&utm_campaign=loading).

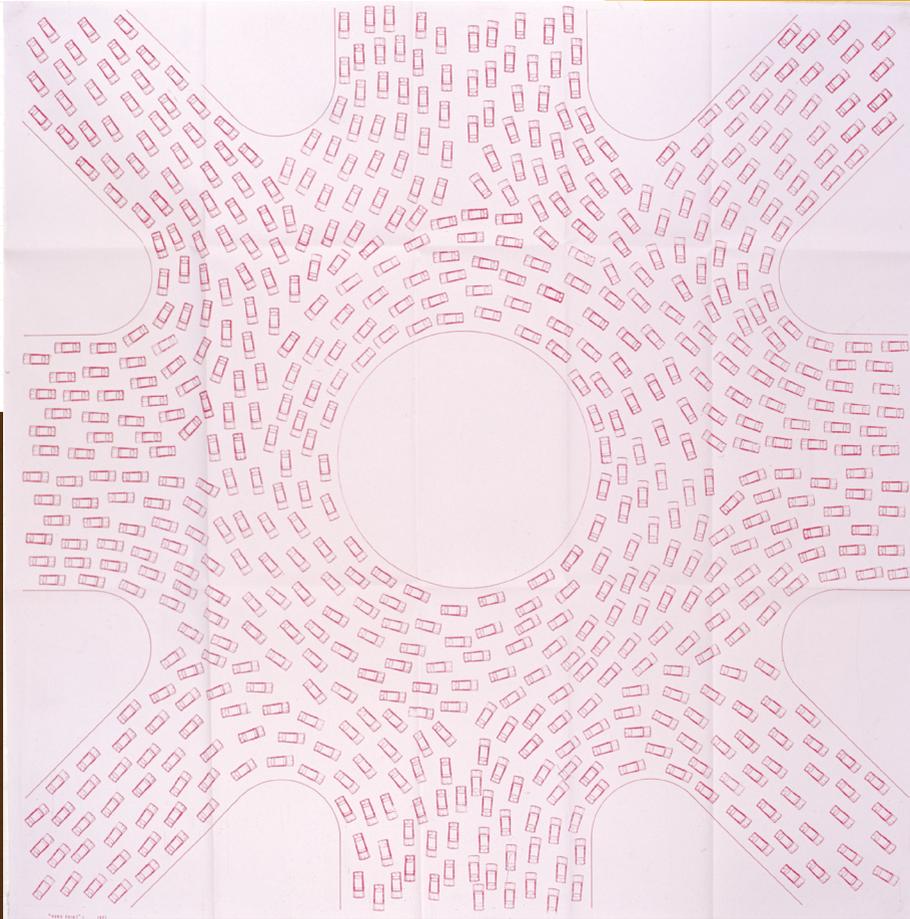
That is, in the case of the metro, it would be about 177 kg per person transported, instead of 700 kg for 1 person alone in a car.



“ I didn't want to talk too much about the automobile because it's very obvious, often talked about. It's absurd. It's absurd to live in a 50 m² apartment and have a garage that requires 25 m² for each car. And it's absurd to imagine individual transportation as a can that weighs 700 kg, you weigh 70 kg. So, you have an oil war. The whole world is in the same situation, it's one of despair and disarray, because of this infamous oil. You face all this paraphernalia to put gasoline in the car. Burning the bowels of the Earth. [Transforming] oil into gas - you are destroying the planet! - an unbreathable gas, to carry a 700 kg can with a 70 kg person...

(Paulo Mendes da Rocha, in an interview with TV Cultura)





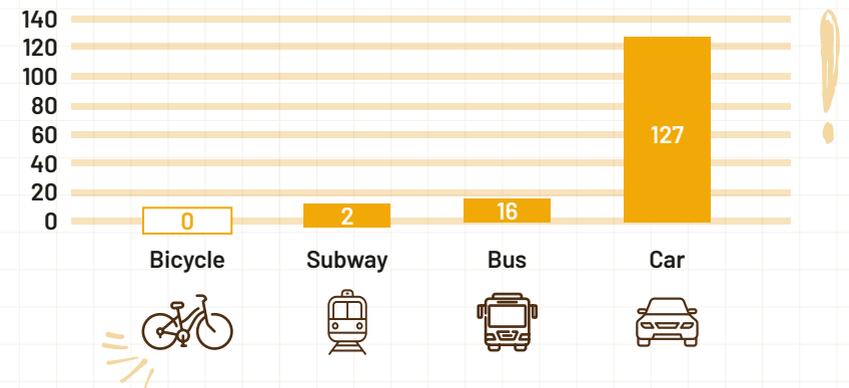
CITY COMMUTING AND THE GREENHOUSE EFFECT

Fewer cars, more buses, subways and bicycles

According to the Transport Coalition Report - How to make the transport sector an active contributor to reducing Brazilian emissions", published in 2025 as the sector's contribution to COP30, emissions produced by urban mobility are very important for Brazil's climate goals. **With 87% of the Brazilian population living in cities, it is estimated that 45% of Brazil's potential for reducing urban emissions by 2050 comes from transport.**

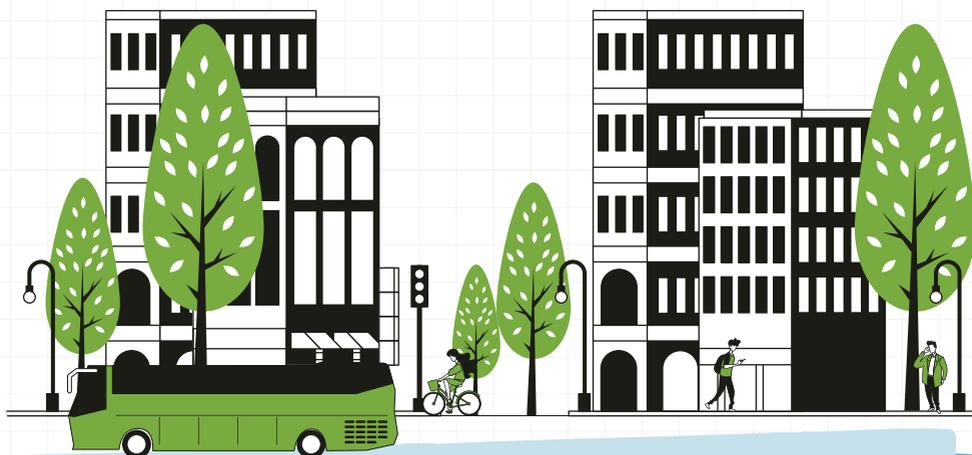
Although cities are different from each other, in general, according to the report, 70% of transport emissions from Brazilian urban centers come from cars, which can be seen in the graph below:

Greenhouse gas (GHG) emissions per Passenger - km
Visão São Paulo (gCO2/pkm)



THE 15-MINUTE CITY

The “15-minute city” is an urban environment concept where residents can access their basic needs, such as housing, school, work, leisure, green spaces, health, and commerce, with journeys that can be made under 15 minutes on foot, by bicycle, or using public transportation. This model, conceived by renowned urban planner Carlos Moreno, seeks to reduce car use and, consequently, carbon emissions, as well as decrease the time people spend commuting and strengthen the local economy. A city focused on people as well as more sustainable.



“ I enjoy the virtues of the city: I walk to and from my house to the office every day... I’m at most 1.5 km away. Anyone can walk that distance, whether they’re 16 or 70 years old. Perhaps it’s less tiring than taking the car: getting it out of parking and facing traffic.

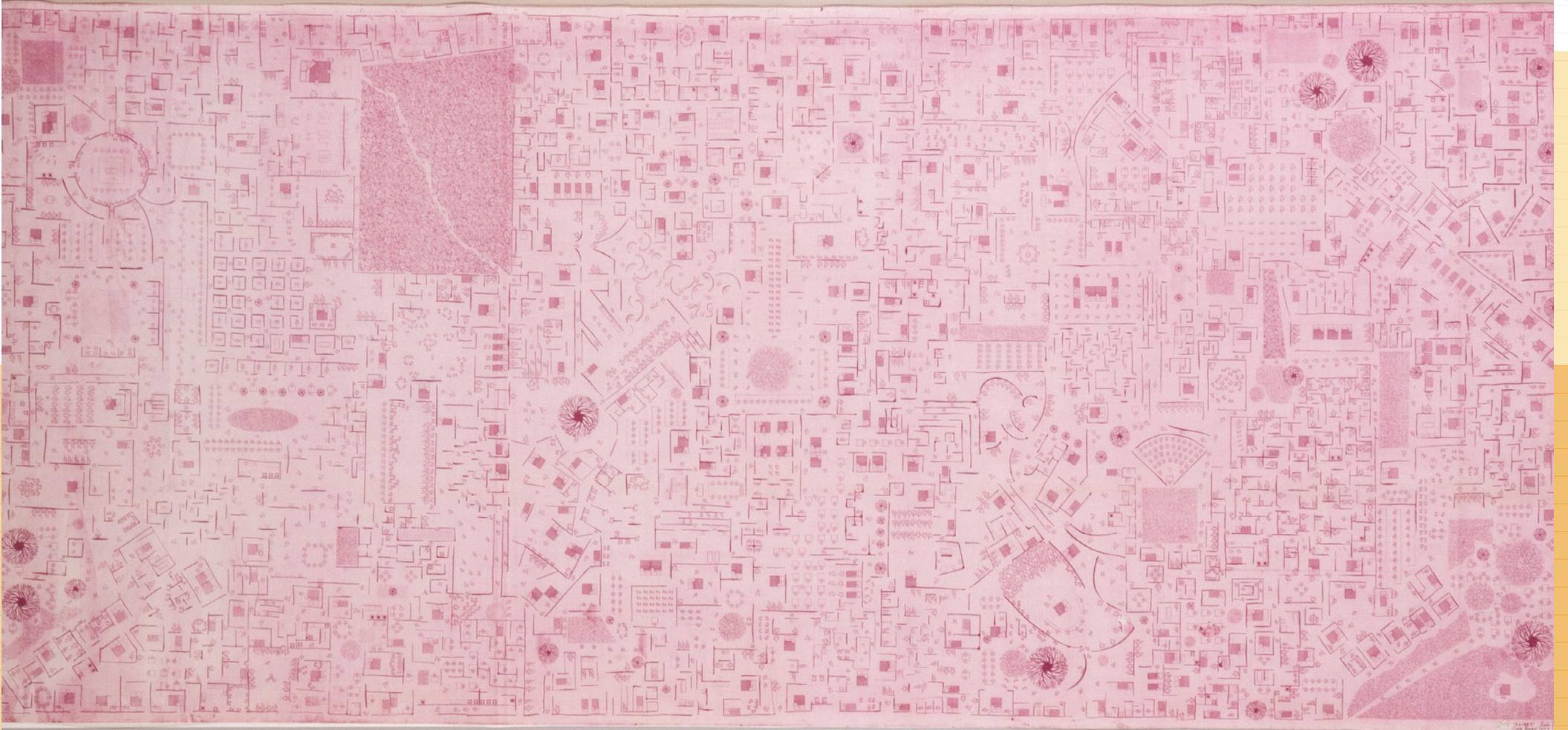
(Paulo Mendes da Rocha in an interview with the newspaper Valor Econômico, when answering the question of how he got around the city at 85 years of age)

HOW DO YOU MOVE AROUND THE CITY? AND WHAT COULD BE DIFFERENT TO REDUCE YOUR CARBON FOOTPRINT?

It can be a drawing, collage, or text:
you choose!



THE CITY AS IMAGINED BY THE ARTIST LEÓN FERRARI



“...this mechanical form of floating appears within the continents, like large pre-existing avenues that are naturally occurring rivers. Therefore, navigation in what is called inland navigation...”

(Paulo Mendes da Rocha at <https://www.youtube.com/watch?v=8DBs6PftirY>)

In the Northern region of Brazil, where Belém do Pará, the host city of COP 30, is located, rivers are the “highways” for the movement of cargo and passengers. The waterway network of more than 16,000 kilometers of navigable rivers in the region connects the major centers of the capitals, the municipalities of the interior, and the riverside communities located in more remote areas. It is also the logistical solution for the social, economic, and cultural development of the local population.

RIVERS AS PART OF THE CITY

THE CITY NEEDS TO BE RETHOUGHT FROM THE PERSPECTIVE OF ITS WATERWAYS, WHICH CAN OFFER LEISURE, MOBILITY, AND SPACES FOR SOCIAL INTERACTION.

Rivers are fundamental to human survival and, since the beginning of civilizations, have played a key role in the formation of settlements and cities.

But several cities around the world are beginning to reclaim their rivers as a form of mobility and leisure.

With rampant urban growth, rivers have come to be seen as a problem rather than a solution. They began to be channeled and covered by avenues, in addition to the large amount of untreated sewage they increasingly received.

A prime example is the Seine River in Paris, where it is already possible to swim.

We are now feeling the result of all this. With the rains, and the rivers squeezed into artificial concrete beds, floods occur, and during periods of drought, there is a lack of water. With the effects of climate change, everything is aggravated.

The São Paulo Metropolitan Water Ring project, a network of navigable waterways composed of the Tietê and Pinheiros rivers, seeks to bring 170km of urban waterways to the city.

And to think that it was possible to swim in the Tietê River until the 1930s, one of the symbols of the city of São Paulo, now known for its pollution.



MITIGATING EFFECTS

We are already feeling the effects of climate change. Therefore, it is so urgent to take measures to reduce these effects (mitigation) and adapt cities so that they can face this new reality: more concentrated rainfall, heat waves, faster winds, among others.

SPONGE CITY

As a way to avoid and prevent flooding, the “sponge city,” a concept created by the Chinese architect Kongjian Yu, is a form of urban planning based on solutions from nature. In this model, trees, green areas such as parks and squares, green roofs, and permeable pavements, for example, are part of the infrastructure used to absorb, retain, and reuse rainwater. It is common in urban areas to channel rivers under streets and concrete pavements, making rainwater management difficult. In the sponge city, on the other hand, instead of traditional concrete infrastructure, the natural absorption capacity of landscape elements is used to help increase the climate resilience of cities.

In China, the country where it was created, the sponge city concept was adopted as a national urban development policy.

THE POCKET FOREST

The Pocket Forest is a more natural technique for the ecological restoration of the Atlantic Forest, developed by botanist Ricardo Cardim.

Inspired by years of observation and study of the scientific literature on the natural secondary growth of the biome, it seeks to respect the original competitive dynamics of young tropical forests, which provides faster growth, greater resilience, and less maintenance, within what may be called “competition-cooperation” among plants. The different growth rates of different species, combined with high density, quickly generate different forest strata, an understory, including a large number of resource-producing species, such as native fruit trees, which attract pollinating and dispersing animals, and improve the local environment.

Pocket Forests can be applied in cities and outside of them, and when well planned and implemented, they may efficiently and successfully occupy polluted and hostile urban areas as well as rural zones with invasive exotic species, rapidly re-establishing the microclimate and ecosystem services.



As an example, the Pocket Forest in Pinheiros, SP, in a 600 m² public area in the middle of an intense urban network, has had a rapid development since May 2017, which can be easily verified through the Google Earth tool.

ADAPTATION

LIONS THAT MOVED FROM THE DESERT TO THE COAST TO SURVIVE, AND THE THRUSH THAT SINGS IN THE CITY AT DAWN TO FIND ITS MATE.

It's not just humans who need to adapt to new environmental conditions to survive. This is already happening with animals, as in the examples below:

“ They moved from the arid Namib Desert to the Atlantic coast in 2017 in search of food. The lions drastically altered their diet and behavior to adapt to the new habitat.

Says Belgian photographer Griet Van Malderen, in a BBC Brazil report about the group of 12 desert lions and lionesses that now live on the Skeleton Coast in African.

(<https://www.bbc.com/portuguese/articles/c867ppdw59po>)

In a 2023 G1 news report, one may read:

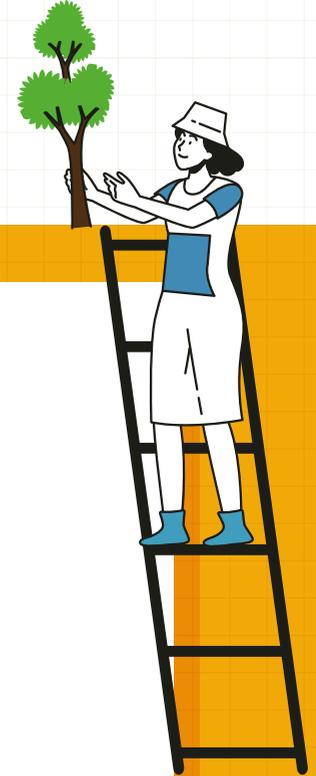
“ To escape the city noise, the rufous-bellied thrush has been singing earlier and earlier in the early mornings in São Paulo – considered one of Brazil's symbols, the bird has started singing before 4 am to avoid competing with the city noise. The goal is to be heard and find a female.

(<https://g1.globo.com/sp/sao-paulo/noticia/2023/10/25/para-fugir-do-barulho-da-cidade-sabia-laranjeira-tem-cantado-cada-vez-mais-cedo-nas-madrugadas-de-sao-paulo.ghml>)

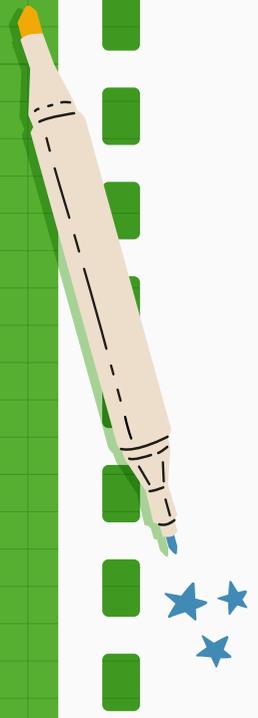
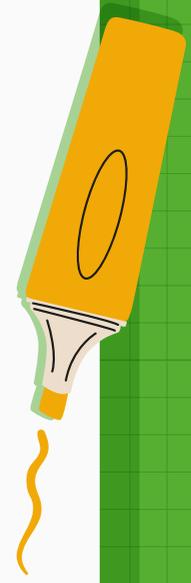


CHANGING HABITS

What habits could you change to help reduce the effects of climate change and better adapt to the new conditions that await us?



THIS SPACE IS FOR YOU TO SHOW US YOUR IDEAS FOR THE CITY OF THE FUTURE



PAPER MODELS

Let's make a paper boat like the one in the artwork by artist Sandra Cinto? You only need a sheet of paper and follow the instructions below to make the folds!

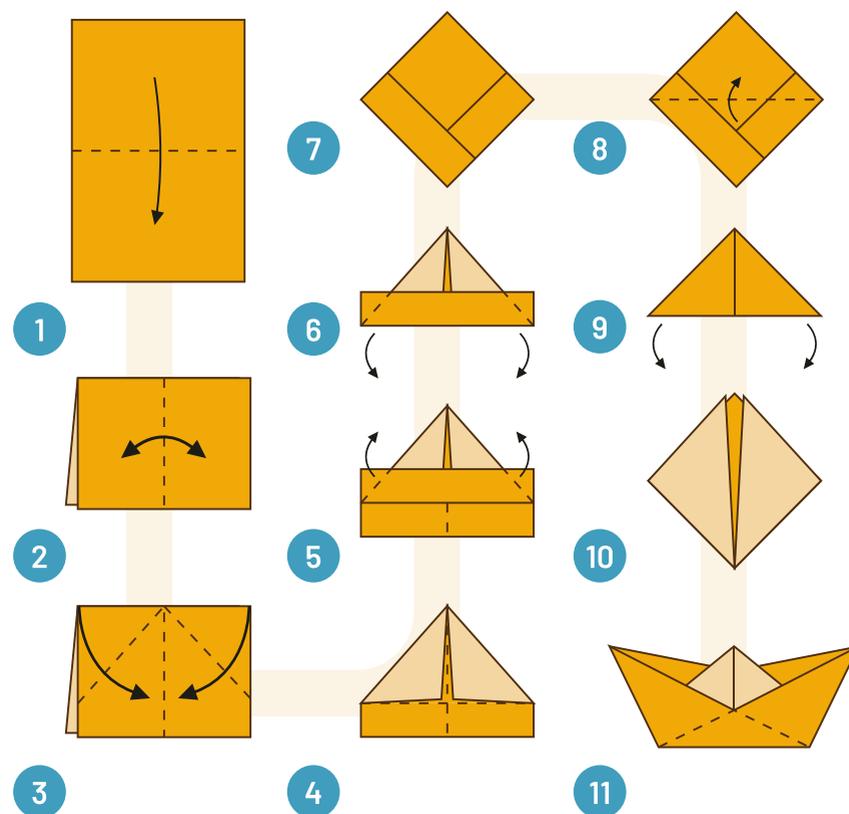


IMAGE CREDITS

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