

# Nature as a Design

Paulo Mendes da Rocha



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## Editor's Note

With this issue we want to pay a modest tribute to the internationally acclaimed Brazilian architect Paulo Mendes da Rocha, who passed away on the last 23rd of May. Here are republished four texts that we consider that speak about recurring themes throughout his work and that were originally published in the catalog entitled “Paulo Mendes da Rocha: Nature as a Design” on the occasion of a retrospective exhibition of his work that took place at Fundação Vale in the year of 2012.

The title of the issue is itself explicit enough regarding the need to include these texts in the global set of thoughts that we have been publishing. In this case, an uncomplex understanding of the inevitable transformation of nature to provide a better life for man on earth. As Paulo mentioned several times in his public interventions “if nature were comfortable, there would be no architecture” or that “architecture exists to support the unpredictability of nature”. Thus, in a light but powerful way, perhaps like his architecture, Paulo teaches us, among other things, not to have excessively romantic views of nature or landscape, as isolated and closed objects in themselves, but rather understand them as a set of logical phenomena in which man is unavoidably responsible for it.

The preparation of this issue would not have been possible without the enormous generosity of the film director Joana Mendes da Rocha, daughter of Paulo Mendes da Rocha, to whom we wish to express our special thanks for granting permission to reproduce these texts. Finally, a special thanks also to Paulo Mendes da Rocha office, in the person of Eliane, for the cooperation and understanding shown during the process.

## Nature as a Design

- Needs and desires

Paulo Mendes da Rocha,  
Architect



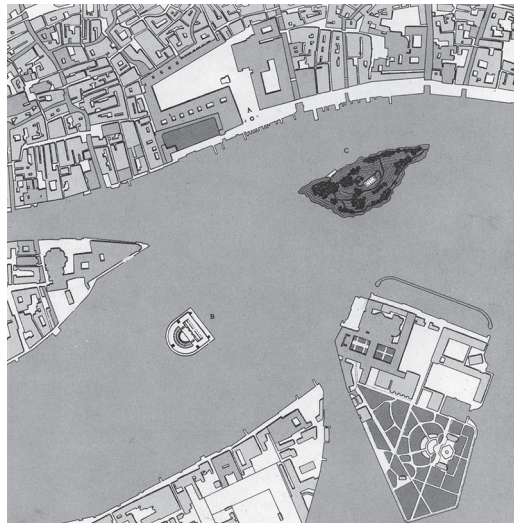
A fundamental idea and one that is perhaps mandatorily part of a discussion is that of nature understood not as a landscape, but as a set of phenomena. These forces of nature appear in a very evident way with the fields of study we call water mechanics, fluid mechanics, or the mechanics of soils alongside bodies of water. Strictly speaking, here where we are now, for example, in the city of Vitória, if we imagine the reasons that led to the choice of this place for the construction of the city, we will see that the answer is linked with seafaring. If in olden times there had been no sheltered place for the caravels to anchor and stay safely, they would have inexorably run aground on the beaches, in the mangrove swamps, in the mud. All of this makes us see that, for the architect, the interplay between territory and water, dry land and a fluid place is a constant decision-making factor for any undertaking. In this regard, we need only to think of a place like Holland, a region entirely constructed through resources for controlling the movements of the tides, the waters, that is, an artificially made territory.

As a city, in the strict sense, Venice is an extraordinary example of the human will. Imagine, at that time, the significance of the wealth of the world discovered by seafarers, the merchandise that came from the African and Asian continents across the Mediterranean Sea to Europe. And, if they arrived at the closest point, in southern Italy, to then be shipped northward into the continent by mule back, it would have been very complicated. Therefore, the idea of delivering the products right away to the markets in the heart of Europe seemed more convenient and more logical, leading the ships to sail up the Adriatic to the point where Venice was founded. The interesting aspect of this story is, however, that the region of Venice was the most inconvenient of territories for constructing a city. It was pure mud, pure ooze, and for this reason they built canals and dredged and drained everything there, and the city was constructed in the water, if you will, where the ships could anchor already at the heart of Europe.

Grain Plan of Venice

Source: Web

That is to say, it has to do with an association, at one and the same time, between human needs and desires: the need for ships to arrive at that specific place and the desire to imagine what city we will make – a city that will be marvelous. This idea of desire supposes an erotic view of life: if we are going to make a city, we need to make it marvelously, clearly showing the success of our technology.



Unrealized project: theater in water for St. Mark's basin in Venice, by Alvise Cornaro

© Drawing by Luca Ortelli

### - Transformations of the place



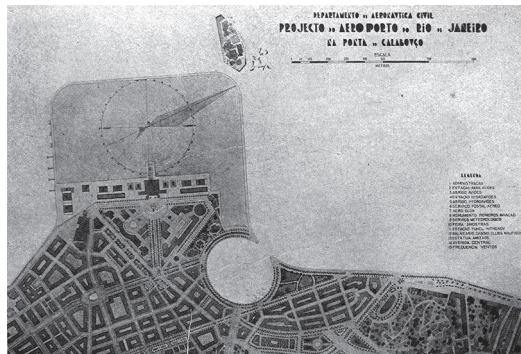
Candelária Church and Avenida Presidente Vargas

Source: Google maps

Here among us, this entire question appears in a very clear way. We see, for example, the city of Rio de Janeiro, with the famous mangrove canal, which is currently an extraordinary avenue, and which even gave rise to the famous Avenida Getúlio Vargas. The mangrove canal is nothing else but a deep canal to drain an area that was formerly a vast mangrove swamp, which would otherwise be undevelopable. And, very interestingly, we come upon what was already the cathedral of the place – Candelária – from the back, because the church was constructed facing the sea. And, to have an idea, the engineers thought seriously about rotating the cathedral and making it face the avenue, freezing the territory. You see that it is possible to do this: literally rotate the church with its foundations, as if a part of the territory it is resting on were transformed into a frozen place, which is very interesting, because everything below ground there is water. This is what we are talking about when we speak of soil mechanics. Rio de Janeiro really is made of notable works of this type, involving the transformation of nature. The hill known as Morro do Castelo, for example, was torn down using water jets, and the mud was transported through tubes to a territory laid out within the ocean, with a seawall made of rocks, and the result was a perfectly flat piece of land where Santos Dumont Airport is located today. So much so that the presence of Villegagnon Island, where the Naval School is – which was located a little bit off the continent, the place where the French invaded – made the airport get squeezed a little in its design so as to leave a tiny channel with a little bridge, that would preserve it as an island. In other words: whims, needs, desires and possibilities. And, at the same time, the demonstration of the inevitable need for transforming the geography itself.

The city of Santos is also exemplary in regard to this, due to the work of Saturnino de Brito. And there is something very interesting and extraordinarily beautiful that exists in the city of Santos, which is the fact that along the edge of the quay where the ships are anchored today there is an opening to a tunnel, through which the smaller boats enter and disappear. The tunnel leads to a rectangular marina within the city, where boats formerly unloaded corn, manioc, etc. This is to say, it is the market of the city, a situation

that arises like a delicious transformation of an inhospitable place into a habitable one. And this is there in Santos, where there is even a college of architecture and, incredibly, hardly anyone talks about this. Therefore, I think that we are giving very little importance to this fundamental part of what is called architecture and urbanism.



Project of Santos Dumont airport, 1934

Source: Digital Hemeroteca of the National Library, Rio de Janeiro



#### - Inland navigation

In Latin America, in relation to this horizon of the waters, it is necessary to consider not only the question of the oceans, which is evident, but also the waters that are called "inland": the systems of rivers, which extend beyond national borders. That is to say, a river does not know if it leaves one country and enters another. It needs to be treated in a holistic way, which implies the peace of America. We have to carry out these indispensable works of what is called inland navigation, constructing and consolidating a waterway system on a continental scale associated with the other countries. Among us, unfortunately, all of this is still very backward.

The city of São Paulo possesses a river, the Tietê, which cuts fully across its urban fabric to flow into the Paraná River, which for its part runs to the Uruguay River, ending up in the Plata Basin. This system, with a small canal, could interlink with another one that is born in the same Brazilian hinterland, which is the Tocantins-Araguaia Waterway. Thus, with a small canal we could have a service of inland or continental navigation linking the Amazonian system with that of the Plata Basin, from Belém to Montevideo.

Therefore, this perspective of what we have to do is a very promising one for the students, and I would like them to become enthusiastic about this vision, rather than merely the goal of constructing apartment buildings for sale. In my opinion, this is the future of architecture. In Europe, there is the entire system of the Danube, of the Ruhr, the territory of Holland, and, in Russia, the Volga-Don system, developed by the Soviet Union, which is a beautiful system for recomposing the entire economy of a region through the efficiency of river transport. Therefore, this strategic vision of architecture on the scale of the territory itself is very interesting. Architecture is not made only of beams, pillars, arches, doors, rooms, hallways, kitchens and bathrooms. It is much greater than that.



### - Simple machines



I think that things like this will orient the cities of the future. This is not a “futurist” vision, but rather the application of the most fundamental principles of physics, of mechanics. Do you want to hear an intriguing story in relation to this? Someone, when looking at the Pyramids of Cairo, could ask the following question: “Why are they such extraordinary monuments, considering that they were made, after all, only to be the tombs of pharaohs?” And the answer is the following: it is because the structure itself served as a construction machine. This is the really marvelous thing about the pyramids of Cairo. On those boundless horizons, affirming your presence with a stone placed at 120 or 130 meters of height is an understandable desire. But it was impossible to construct one of these things, at that time, except with machines. And the pyramid is in the first chapter of mechanical physics. It is one of the simple machines: the inclined plane. By way of this successive inclined plane you manage to pull the stones up until reaching that last one at the top. That’s why they are like that, historically configured as monuments, and not because they are tombs of pharaohs. Indeed, the tomb must have been only a pretext for building that thing, which was in itself a great desire.

Another example is our Copan building, in São Paulo. It has the curves it has for a reason of stability, and not for an analogy with the curves of the mountain, as Oscar Niemeyer says. Because, as narrow as it is, and with that height, there would be no structure that could stand the force of the wind. But if it is built with a curving shape, as Niemeyer did, it can stand up on its own. Therefore, they are not the curves of the mountains, nor much less, unfortunately, of a loved woman. They are necessary curvatures designed to ensure the stability of what would otherwise be unstable. This is the wisdom that I think should be cultivated in the school of architecture, and not the foolishness of the delirium of shapes for the sake of shapes.

Untitled

Photo: Unknown author

**Kärjäkivet** is an independent online publishing project of thought and criticism of architecture that was born from an artistic research around the unbuilt Saivaara Monument designed in 1978 by the legendary Finnish artist Tapio Wirkkala for the Saivaara fjeld in Lapland. The publication has been achieving, not in form but in content, the concept of Kärjäkivet that Tapio Wirkkala wanted for the Saivaara Monument: the creation of a place where men of all races and colors can gather to think. In this sense, there is an online platform - [www.karajakivet.com](http://www.karajakivet.com) - where several invited authors are able to gather through small literary constructions produced by them, sharing their ideas about architecture, art and culture in general, in a sort of modern-day assembly.

Evoking the place that Tapio Wirkkala wanted to create at the top of the Saivaara fjeld, Kärjäkivet meant to be a place of slowness and introspection where to stop, "observe the landscape" that surrounds us and think.



## KÄRJÄKIVET

Finnish word meaning “court stones” or “circle of stones”: places of judgment (originally iron age graves), where judgments were held and justice carried out, accordingly to the Finnish National Board of Antiquities.

In the ancient times, they were important places where the primitive leaders of the North got together in order to discuss and decide about common matters.

[www.karajakivet.com](http://www.karajakivet.com)

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