

# WATERFRONT DIALECTICS

ROME AND ITS  
REGION FACING  
CLIMATE CHANGE  
IMPACTS

Edited by:  
Pedro Ressano Garcia  
Claudia Mattogno  
Bruno Monardo  
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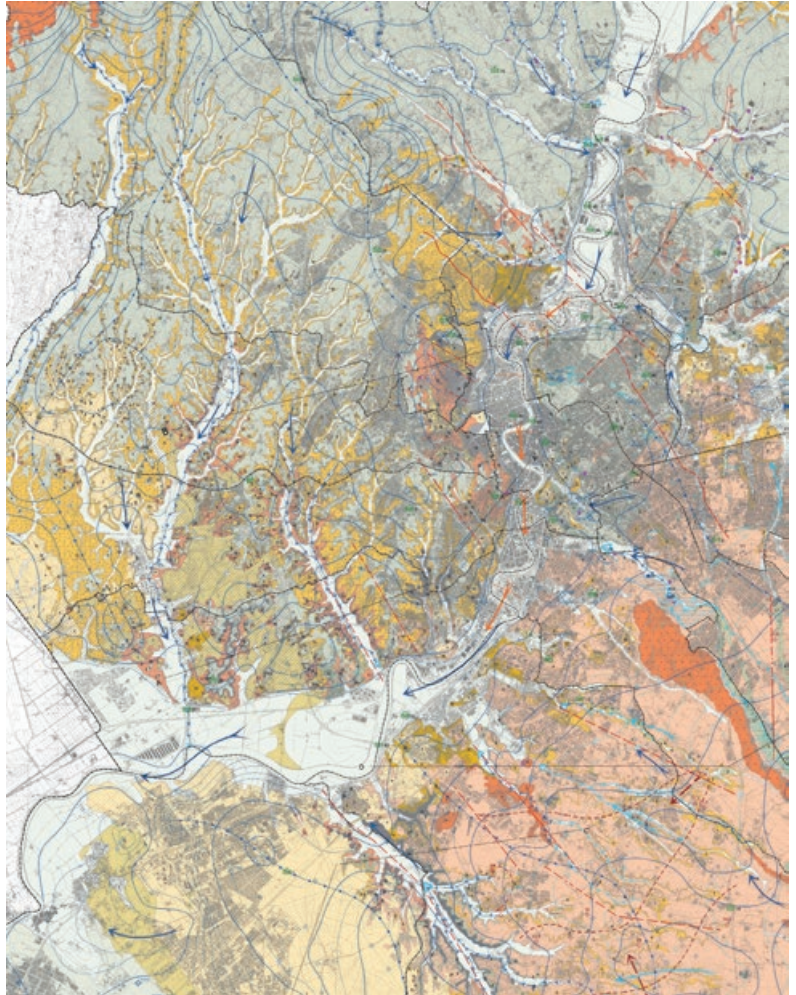
# **The Navona Lake and the Eels of the Pantheon**

Architecture  
and Landscape  
for Flooding

Even though climate change is a topical issue, looking at the past could help to address questions and actions for future solutions. This is the case of a story with two main protagonists: Rome and the Tiber, the latter of whom is imaginary. Anyone who has visited Rome would swear that the Tiber is there, but truly it does not exist, simply because no river, wherever, does. All the rivers we can think about are a misunderstanding: this is the brilliant thesis of Dilip da Cunha, who in 2018 published a book with the unsettling title *The Invention of Rivers* (da Cunha 2018). Hovering between the acknowledgement of an evidence and a clear provocative intent, he argues that rivers, understood as perennial watercourses, running between two parallel lines, are an invention of ours, they do not exist. What do exist are the terrains of water (Mathur & da Cunha 2014), unstable situations produced by the varying relationship between the land and the spreading-on water. Rivers, as we typically imagine and draw them, are the category – at first conceptual, then cartographic, and finally geographical and architectural – through which we humans have sought to simplify and stop in a stable and reassuring form the inexhaustible negotiation between land and water. Thus, rivers appeared on maps as a couple of parallel lines sanctioning the absence of any ambiguity – water here, land there, no hesitation – then, we built banks translating that idea into reality. Rivers are water held within an enclosure so that it does not overflow and invade the land. In other words, rivers are the cultural and then spatial construction of a frontier. The threshold between running water and dry land is rather a thickness that refuses to become a line. So, questioning the physical and conceptual stability of the embankments is the only way to prevent the disastrous effects of the floods, which arrive when the water, forcibly tamed, eventually swells and overtakes or breaks down those embankments, with the violence that they themselves have raised up.

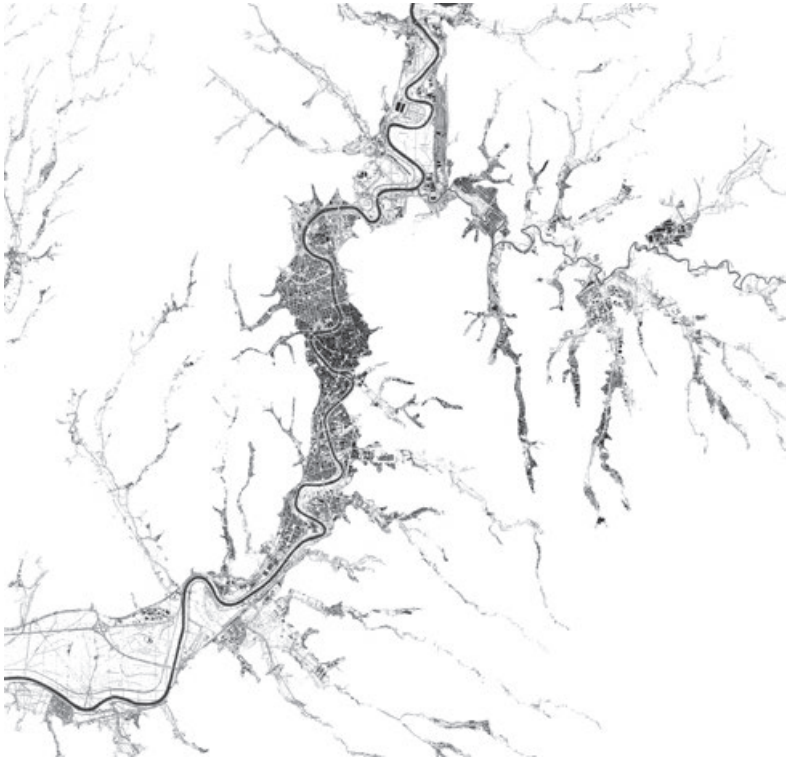
So, the Tiber is much more than the watercourse between its two banks: it is a much greater depth, encompassing entire parts of Rome. To understand the real extension of the Tiber, one should consider the hydro-geological map, where the lightest tones represent the valleys, made of silty sediments, accumulated over thousands of years, thanks to the presence of water (Fig. 1). This imprint corresponds to the hydrological network of Rome, and it represents the actual thickness of the Tiber and its tributaries. If we mapped the ensemble of buildings, roads, gardens, monuments, any kind of infrastructure and construction that insist on that area, the result would be a portrait of what can be said the river-city of Rome, a crisis between two worlds – the river and the city – that we usually tend to separate. Finally, we

Figure 1. Hydro-geological map of Rome, 2020.



could say that Rome is not a city on the Tiber but a city in the Tiber (Fig. 2).

It was 1870, Christmas Eve, when the Tiber began to swell after heavy rains. And it did not give way. It swelled again in the following days, until, between December 28th and 29th, about three months after the Porta Pia breach, it overflowed, exceeding 17 meters, as it has not been seen for at least two centuries, an unheard-of event. The impression was great throughout the country. One day later, the king hastened from Turin and convinced himself of the absolute priority of caging the Tiber into embankments, high enough to resist any possible flood and thus safeguard the reputation of the city that was preparing to become the capital of the kingdom (Fig. 3). In no time at all, on January 1st, 1871, a technical commission was set up and, having found financing, the works to trap the Tiber between





walls (called Muraglioni), almost 20 meters high in a constant section 100 meters wide, began in 1875 and went on for more than fifty years, until 1926.

Yet, floods have been part of Rome's history for over 2600 years (Aldrete 2006) – according to the legend, the Tiber in flood dragged Romulus and Remus' basket down to the Velabro, where the she-wolf found them. The Tiber is after all a gentle river, with a modest average flow-rate compared to its main European colleagues, but sometimes it can be turbulent. In ancient times, floods were not considered eliminable: the 'intemperance' of the river had to be lived with and floods were seen as a phenomenon to adapt-to rather than fought-against. For example, the ports were equipped with docks on different levels, to be usable according with different highs of the river, and the riverbed reached 130 meters width, i.e. 30% more than today (Lanciani 1897). One does not need to be a specialist to understand the different hydraulic functioning of the two solutions, where the most ancient created a volume with a flexible capacity and usability, while the Muraglioni made a constant section tunnel. At those times, even the Walls of the city, from Porta del Popolo to the Agrippa Bridge (today Ponte Sisto) and from Porta Portese to Monte Testaccio, worked as embankments in extreme cases.

As a precaution, in the lowest parts there were only public buildings, such as the Forums, which could be easily evacuated, while the houses were on the hills, where the air was healthier and defending against the enemies, water included, was easier. The Circus Maximus was among those buildings, a place for games and chariot races, located exactly where the Murcia stream flows into the Tiber; therefore, it is a river valley transformed into architecture. The ancient Romans knew how to live with water, so they created a monument like a huge basin, as capacious for water, when it arrives, as for social rituals, still today welcoming the events of contemporary Rome. The Circus Maximus is the monumental transcription of a geographical datum, it is geography that becomes architecture. So, it is quite normal that even today, after heavy rains, water collects there. These water-events are even enchanting, because for the time of the rain they completely change the site, the way of seeing and using it, understanding its most intimate and true nature: that of being a river (Fig. 4).

The same happened in other parts of Rome, in Campo Marzio, for example, that is the lowest part of the city. Montecitorio, its highest spot, barely reaches 15 meters above the sea level. For a very long time, it was a permanent marsh that the Romans called 'Palus Caprae' – probably after some religious rituals that included the sacrifice of a

Figure 2. Matteo Polci, *The river-city of Rome*, final degree thesis in landscape architecture, Master in Urban Design, Architecture Department, Roma Tre University, supervisor prof. Annalisa Metta, 2016.

Figure 3. Topographic map of Rome. Originally published in 1866 by the Census General Directorate and updated in 1870 by Giuseppe Partini to show the levels reached by the flood of 1870. © David Rumsey Historical Map Collection, public domain.

goat – so it remained uninhabited (Fig. 5). Its destiny changed in the Augustan age, when Agrippa, the emperor’s son-in-law, reclaimed the land, drained the swamp, and turned it into a monumental basin, the Stagnum Agrippae, with an emissary reaching the Tiber (its course roughly corresponds today to Corso Vittorio). In the recovered areas, Agrippa built the Pantheon, the baths with his name – whose *natatio* was the ancient *stagnum*, indeed – and then gardens, the basilica of Neptune, even the first permanent amphitheater of Rome and an immense sundial next to the Ara Pacis. Later, Domitian built his Stadium there, a large open space for athletic competitions. As in the case of the Circus Maximus, the Romans recognized and respected the geography, that of a depression where water collects by gravity, giving the building the form of a spacious empty space. Piazza Navona, symbol of Baroque Rome, was then built there, on the same site. It was the place for events, shows, and rides, as well as for a daily market, then moved to Campo dei Fiori. It was the quintessence of what we mean by public space, as the wonderful Vanvitelli’s chronicles testify (Fig. 6) Here, on June 23, 1652, Pope Innocent X, Pamphilij, advised by his sister-in-law Donna Olimpia, inaugurated the ‘lake of Piazza Navona’. It was enough to plug the manhole covers and the drains of the fountains, so that the water overflowed and collected into the natural basin of the square, as it had happened since the times of the Palus Caprae. Since then and for about two centuries, on Saturdays and Sundays in summer, the square was transformed into a lake, no more than 50 cm deep. The nobles flocked there in carriages, disguised as gondolas or wooden and papier-mâché vessels, some with sails and rowers. Everyone else would bathe and play. At that time, between the XVII and XVIII centuries, many of the buildings in the square were painted in the *color dell’aire* (the color of the air), a light shade of blue which made the buildings almost dissolve into the atmosphere. Giovanni Paolo Panini depicted it, with the facades of the buildings merging with the sky, and in turn, sky and buildings are reflected on the surface of the lake: it was an enchanting room of sky, light, water, and wonder (Fig. 7).

The lake continued as a popular spectacle, a gathering place, a site for games and courtships, but also a trick to cool off from the summer heat, until the second half of the XIX century. The last known flooding dates to 1865. Then the square was restyled to make it suitable to the new tone of Rome, the capital of Italy, and the paving was redone, assuming its current appearance, with the sidewalks, the lanes for cars, and the central plateau with the fountains. Above all, the topography was modified: from concave, as it had always been, since it was a swamp attended by

Figure 4. The Circus Maximus flooded after a heavy rain, February 2019.

Figure 5. Giovan Battista Brocchi, *Physical map of Rome soil*, 1820. Palus Caprae is well visible in the site of today Campo Marzio district. Source: [<https://collections.library.yale.edu/catalog/15824447>], public domain.

Figure 6. Gaspar van Wittel, *Piazza Navona, Rome*, 1699. Source: [[https://commons.wikimedia.org/wiki/File:Caspar\\_van\\_Wittel\\_-\\_Piazza\\_Navona,\\_Rome\\_-\\_Google\\_Art\\_Project.jpg](https://commons.wikimedia.org/wiki/File:Caspar_van_Wittel_-_Piazza_Navona,_Rome_-_Google_Art_Project.jpg)], public domain.



goats, it became convex, making any hypothesis of new flooding impracticable. The goal was to remove water as quickly as possible, making it drain and disappear into the sewer system.

A few steps from there, there is another excellent monument, the Pantheon, famous for its immense dome and zenithal light.



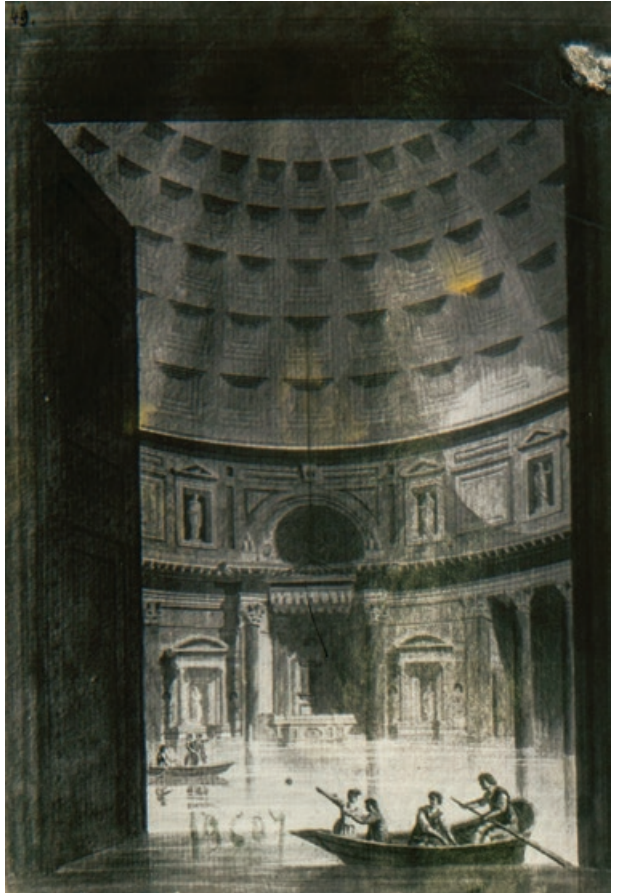
Few pay attention to the floor, where there are 22 small holes, integrated into the marble decorations, which are water-traps, parts of a complex drainage system (Fig. 8). Moreover, the pavement has a double curvature, because it is slightly convex towards the sides, while it is concave in the center. These devices clearly show that this floor was conceived in close dialogue with the water, it was a receptive inside-topography, attentive to the water and its variable choreographies. And since the Pantheon is in the lowest part of the city (12 meter above the sea level), heavy rains inevitably poured down there, so historians agree that, apart from the floods of the river, it is reasonable to think that the Pantheon was under water for a few days at least three times a year. Thus, it is not surprising to have archaeological findings of the drainage system of the building, connected to the urban drains network since the Augustan times. There is also another intriguing clue: an engraving by Giovanni Panini depicts the Pantheon flooded and navigable with small rowing boats (Fig. 9). Richard Krautheimer argues that it testifies to the degradation reached at the time by the city, which had by then completely abandoned the drainage systems of antiquity (Krautheimer 2000). I do not doubt that he is right. Yet, it is impossible for me to think that the Romans, very skilled plumbers, did not know that they were building nothing less than the temple of all the gods in the most depressed point of the city. And so, I believe that the oculus open to the sky and that generous reservoir for the waters of the river and the rain make this building a meteorological architecture, a landscape-building, capable of breathing with the river and the climate, supporting its intemperance, in a soft and dialoguing way. It is a building where the limits between inside and outside dissolve, where we can imagine the eels swimming on the bottom and the religious celebrations alternating with the breath of the river and the succession of the seasons. Perhaps this capacity of spaces, elements, and sense, so wide to be truly totalizing, could explain the meaning of the wholeness, of *pan* -, that is in the name of this building: Pantheon is where architecture and water can really mingle in the most authentic realization of a city-river.

Perhaps, we could look at this story to think our contemporary cities, obsessed as we are by control and predictability, safety, and efficiency, sedated by the analgesic categories with which we have learned to describe the world we like, well-ordered, disciplined, and therefore static, without surprises, because transformation, transition, and change are concepts about which we find ourselves unprepared. We have no choice but to learn from the rivers, which know well that they do not exist.

Figure 7. Giovanni Paolo Panini, *Piazza Navona*, 1756. Source: [[https://commons.wikimedia.org/wiki/File:Panini\\_GP\\_Piazza\\_Navona.JPG](https://commons.wikimedia.org/wiki/File:Panini_GP_Piazza_Navona.JPG)], public domain.

Figure 8. Drainage holes in the pavement of the Pantheon, Rome. Source: [[https://commons.wikimedia.org/wiki/File:Pantheon\\_floor\\_drainage\\_2.jpg](https://commons.wikimedia.org/wiki/File:Pantheon_floor_drainage_2.jpg)], CC 3.0.

Figure 9. Giovanni Paolo Panini, *The Pantheon flooded by the Tiber*, n.d. Source: © Istituto Nazionale di Archeologia e Storia dell'Arte.



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