

SEWERS

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Most of the time, we live our lives within this invisible system, blissfully unaware of the artificial life, the intensely designed infrastructures that support them.¹

The process of urbanization is inextricably connected to the water system, and even if the latter is “covered, banalised and relegated to an apparently marginal, subterranean urban world”,² it is nonetheless the backbone of the modern city and, with minor changes, of today’s contemporary city. With the introduction of a subterranean urban landscape, connections between distant sources of water and water discharge in remote areas completely changed our concepts of space and time, expanding the city’s limits underground and thus permanently modifying the landscape.

Our approach to water issues, particularly in the scientific literature dealing with water access and flow, is a generally engineering-³ and economic-based one that tackles how we might solve existing problems and with what resources. However, despite the considerable impact that our choices with regard to water have on the physical shape of the city and on the development of urban systems, the subject is little studied. There are two main explanations for this lacuna. The first deals with the implementation of the water system through the sectorialization of competences that started with the Industrial Revolution. This breaking down into specialized disciplines of a highly interdisciplinary field forced each sub-discipline to adopt an equally specialized viewpoint, something which led to a failure to perceive and respond to overarching issues affecting the entire field of study.⁴ The second reason deals with the shift in our perception of

1. Bruce Mau, Jennifer Leonard and Institute without Boundaries, *Massive Change* (London: Phaidon, 2004), 9.

2. See Maria Kaika and Erik Swyngedouw, “Fetishizing the Modern City: The Phantasmagoria of Urban Technological Networks”, *International Journal of Urban and Regional Research* 24, no. 1 (2000), 120–38.

3. See Erik Swyngedouw, *Social Power and the Urbanization of Water: Flows of Power*, 1st ed. (Oxford: Oxford University Press, 2004); Jean-Pierre Coubert, *The Conquest of Water: The Advent of Health in the Industrial Age* (Princeton: Princeton University Press, 1989).

4. See Steve Graham and Simon Marvin, *Splintering Urbanism: Networked Infrastructures, Technological Mobilities and the Urban Condition* (London, New York: Routledge, 2001).

5.

See Goubert, *Conquest of Water*.

6.

See *ibid*. As Goubert points out, the whole process of the domestication of water was extremely slow, certainly less rapid than the advent of the electricity, and its integration into social practice was opposed both culturally and economically. Bathing, like personal hygiene more generally, was sporadic and even considered dangerous, since the difference in the air temperature and that of the bathwater risked exposing the body to chill. Furthermore, the idea of bathing was connected more with the context of rites of passage, as water has been universally considered the symbol of purity throughout human history and across religions. The working class had to be persuaded to make regular use of clean water for bathing – and to pay for it. The high cost of water was the other reason for the slow-down in the democratization of the resource. Private companies were charging a lot while the public was not capable of investing in expensive infrastructure, so people were compelled to acquire the resource on their own. Industrial and scientific advances in technology spread the use of water, Goubert says, “in such a profound and durable way (thanks to press, hospitals and schools) that it was finally water that conquered people by transforming the world and becoming a part of our daily life”.

water from being a natural, unregulated resource to being a hidden, sectorial facility/infrastructure that causes the loss of a relationship with the city’s ground level. The bonds between form, landscape and the social power of the resource are no longer questioned together.

Studying and describing the evolution of the “conquest of water”⁵ is interesting for two principal reasons: first, because it birthed the categories of specialization according to which we manage water today; and secondly, because it narrates the construction of an artificial landscape, which is the usual scenario nowadays. In recent years, this artificial landscape has not dealt with the kind of large changes or technological innovations that would create a new paradigm in water collection and distribution. Considering this, it is necessary to reflect on the fact that the system on which our contemporary water management approach is based and the idea of the transitional nature of water (nature/artifice, hidden/visible) have only been introduced into the city relatively recently.⁶ In many cases, the “conquest of water” is still underway and the paradigm shaping it has not yet been explicitly defined or fixed, so it is possible to highlight the discrepancies in and dystopia of the model employed. As Jean-Pierre Goubert has underlined, “for thousands of years, this behaviour, these habits, this relationship to water, did not exist. Water was a dominant force, imbued with powers, virtually immanent and generally feared. It was a symbol of severance and transition, particularly towards the beyond.”⁷

Pipes represent a symbol of modernity because they “literally carry the idea of progress into the urban domain . . . providing the confirmation that the road to a better society was under construction and paved with networks”.⁸ However, “once completed, the networks became buried underground, invisible, rendered banal and relegated to an apparently marginal, subterranean urban underworld”,⁹ thus becoming the “background for other kinds of work”.¹⁰

Among the different urban infrastructures, sewers are the most enigmatic. Nobody exactly knows their layout and appearance, and people ignore how they function, even if modern sewers have been in use since the second half of the 19th century. Sewers are perceived as something inaccessible, chaotic, a dangerous tool for waste management. This perception is due to the fact that people don’t see the flow of the water any more; they only imagine the foul and dangerous materials flowing through these artificial veins.

Two kinds of sewer systems – the separate and the combined – were implemented, and both are still in use. The two systems differ



The sewers of Milan, 2013.
Photograph by Giovanna
Silva

7.
Goubert, *Conquest of Water*,
21.

8.
Maria Kaika, *City of Flows: Modernity, Nature and the City* (New York: Routledge, 2005), 37–38.

9.
Kaika and Swyngedouw, “Fetishizing the Modern City”, 121.

10.
Susan Leigh Star, “The Ethnography of Infrastructure”, *American Behavioral Scientist* 43, no. 3 (1999), 380.

11.
There has always been a huge debate about the relative merit of the two systems. Ever since the first conception of the idea of the sewage system – with Haussmann and Belgrand debating in Paris, and Chadwick and Bazalgette doing so in London – the separation of faeces from storm water has remained an open issue. The issues at stake were the economic importance of human waste as a fertilizer sold to farms, resistance on the part of the “scavengers” whose job it was to clean up human waste at night, unhappy cesspit-cleaning companies whose business was put at risk by the new technology and the fear of contaminating “clean” water. The increasing use of water together with the high cost of constructing a separate network for collecting human waste finally led to the predominant choice being to combine storm water and sewage.

in the way they deal with storm water and human wastewater, as one deals with them separately and the other combines them. The combined system was usually employed in medium to large cities, where the costs of two separate systems would have been too high, while in small cities, where it was not compulsory that the storm-water system be installed underground, the separate system was used.¹¹

While the installation of water pipes spread incredibly fast, the installation of sewage systems was much slower. The first reason for this is related to the difficulty of obtaining enough funding for both water delivery systems and sewage systems, as they are both expensive undertakings. What is more, the profit derived from such systems, as William Paul Gerhard once noted,¹² is generated by the taxpayers, who are more willing to pay for water pipes than for a sewage system. The second reason is the idea that sewage systems are not of primary concern and necessity compared with a water-supply system, and the possibility of coping with on-site systems (like pit latrines, for example) contributed to the delay. It was sudden population growth that led to the over-filling of cesspits and privy vaults, while the situation was more generally complicated by an increase in the use of water facilitated by enhanced water-supply technologies. The environmental implications of this clash of systems, together with progress in scientific discoveries,¹³ provided the necessary momentum for change.

The implications of the introduction of sewers go far beyond the mere transformation of the sanitation system. Sewers are associated with fear, dirt, pollution and disease, but they also represent the response to progress in technology and contribute to the improvement of urban health conditions.

The transformation of superficial watercourses through the adoption of innovative technologies of hydraulics and engineering could be defined as an attempt to tame nature whereby nature itself becomes increasingly related to leisure activity rather than being perceived as a structural necessity.

The integration of water and drainage systems affected urban form as a whole, but it also brought about both changes in living habits and the creation of smaller spaces. The introduction of plumbing systems into modern buildings led to the modification of the internal distribution of the house and introduced the concept of private space. While fetching water became unnecessary, personal hygiene became a private activity together with other formerly social practices like doing the laundry, as they increasingly transpired within the

atomized and solitary spaces of the house. Former spaces for water distribution such as communal toilets and laundries that had once been social hubs disappeared from the public realm. Water gradually lost its social dimension.

Because of their function, plumbing pipes became the link between the newly introduced private spaces of the home and the increasingly blurred, uncontrolled urban space, the space between buildings, but they also became the connection between the above-ground and the underground, between spaces of air and spaces of dirt, between nature and artifice.

12.
William Paul Gerhard,
"Sanitation and Sanitary
Engineering", <http://www.archive.org/details/sanitationandsa01gerhgoog>
(accessed 30 August 2014).

13.
For instance, the discovery
of the human circulatory
system and the discovery
that bacteria and viruses are
the causes of disease.