

Author's note

Urban natures

History and topicality of a political and technological issue

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A major challenge for contemporary cities

C **Biodiversity corridors, urban forests, reversal of land artificialization, urban agriculture:** not a week goes by without these ideas being covered in the press and being the focus of heated debate. Contemporary urban development affords a much greater importance to nature than conventional planning. This paper proposes to explore two aspects of this trend. The first concerns the manifold technological questions raised by the presence of natural elements in cities. The second lies in the deeply political nature of this presence.

Ensuring that plant and animal species can prosper in urban areas has always posed a technical challenge for cities which must adapt spaces if they are to survive. This aspect has become more urgent due to climate change and the need to find solutions to stop its effects from making many urbanized areas uninhabitable for many species. Stepping up the presence of natural elements is a key component, if not a panacea, of cities' adaptation to rising temperatures and the resulting extreme weather events. This shift brings the technological aspects of nature's presence in urban areas into sharper focus.

The political aspect of nature in urban areas is slightly more complex to unpack. It is seen in intentions, projects, and experiments. This gives practices such as urban agriculture and shared gardens a highly symbolic dimension. In a bid to re-establish social cohesion that has been undermined by social divisions and ideological differences, these practices suggest that our ability to live together in a major contemporary city cannot be separated from the importance given to natural elements. A new social contract including both humans and the rest of the natural world is being created to bridge these gaps.

These practices suggest that our ability to live together in a major contemporary city cannot be separated from the importance given to natural elements.

From history to current situation

While it has acquired a higher salience in recent times, the relationship between city and nature is long-standing. However, this relationship is often addressed without considering its history. The dawn of the Anthropocene, this epoch in which humankind's influence on the planet became commensurate with geological

phenomena, heralded a tendency toward historical amnesia, defined as "presentism" by historian François Hartog¹. This position paper will take a stance that runs counter to this trend. History sheds light on the two aspects that make up the relationship between city and nature, namely its technological character and political dimension. These two aspects have admittedly become heightened in recent decades, but they have long guided considerations and practices concerning the introduction and retention of natural elements in urban areas.

We will begin by discussing some key moments in the relationship between urban areas and natural elements. This is not intended to be an exhaustive overview, and is limited to Western cities, mainly due to their importance in the emergence of urban development models destined to be exported worldwide. We will begin with the 18th century, when this relationship was first considered in relation to social cohesion². It was during the Enlightenment that the modern-day political connotation of nature in cities emerged.

Another lesson that can be learned from history is the close connection between nature in the city and the technological aspect that is the other guiding thread of our considerations. This is seen in particular in actions such as extensive planting in Paris under the Second Empire or the creation of Central Park in New York from 1857.

The introduction and upkeep of tree-lined avenues, gardens and parks were not only possible through technical prowess, but also they often came in tandem with major urban infrastructure projects, as did Central Park. In Haussmann's Paris, they were actually forms of infrastructure in their own right. We will see that

1. François Hartog, *Regimes of Historicity, Presentism and Experiences of Time*, New York, Columbia University Press, 2015.
2. This limitation is gradually lessened as many global cities become modern, in the Western meaning of the term. Plantations, parks and gardens in the European or North American style could be found well beyond their original area as of the last decades of the 19th century.

History sheds light on the two aspects that make up the relationship between city and nature, namely its technological character and political dimension.

this assimilation between nature and infrastructure is set to be one of the key characteristics of the current situation, at a time when the reversal of land artificialization, urban forests and wetlands appear to be the only effective protection against some of the major effects of global warming.

A brief look at the relationship between urban modernity and nature in cities demonstrates the extent to which, in many ways, we have inherited from this controversial moment in the development of urban planning and architecture, despite Bruno Latour's insistence that "we have never been modern"³. Nowadays, the concept of the garden city can be found in modern cities such as Singapore, which claims to be a "city in nature"⁴.

As part of the current debate on the presence of nature in the city, history informs our understanding of the long-established values and practices in contrast to undeniably new elements, such as those concerning climate change. We must start by noting that these new elements are not due to the climate emergency alone. They are related to a brand-new way of considering the budding social contract and to a range of initiatives without any real historical equivalent. This results in us considering the relationship between urban nature and technology with a fresh perspective. Beyond the wide range of contemporary achievements, attitudes and projects, a new understanding of urban areas appears to be emerging. Following on from the popularity of smart cities in the 2010s, green cities may well play an even more decisive role in the emergence of a new urban ideal. It is likely that digital technologies and urban nature will converge in the near future, although much of this development has yet to unfold. For example, technology may contribute to a better understanding of plants and animals present in cities as well as facilitate the management of scarce water resources and the preservation of fragile urban ecosystems.

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As we move from history to the current situation, we will finish by directly addressing one of the paradoxes of our contemporary relationship with the natural elements. We refer to nature constantly, at a time when the leading philosophers, anthropologists and sociologists criticize the notion which they believe has become outdated given the need to completely rethink the relations between humans and non-humans. What should we think about this apparent contradiction? It all depends on what is meant by nature as it is both unchanging and passive according to some Western traditions while having dominant characteristics which have been enduringly shaped by science

3. Bruno Latour, *We have never been modern*, Cambridge, Harvard University Press, 1993.

4. Peter Rowe, Limin Hee, *A City in blue and green. The Singapore story*, Singapore, Springer Nature Singapore, 2019.

and technology. It may be preferable to adopt a more open set of approaches to what is non-human, the content of which varies significantly depending on the era and the society considered. It is better to think about different forms of nature rather than nature as a monolith, which is why this terminology was selected for the title of this position paper.

Nature and urban morality in the enlightenment

While natural elements had been present in European cities for a long time, they long remained on the margins of urban discussions and projects. Furthermore, planted green areas were mostly private. Surrounded by walls, the gardens of religious institutions and aristocratic mansions were inaccessible to passers-by. Change began to occur slowly in the 17th century when royal parks and gardens such as Hyde Park in London and the Tuileries Gardens in Paris were opened to the public. Under Louis XIV, Paris first saw the creation of tree-lined boulevards to replace fortifications, a major contribution to the emerging trend of opening parks to the public. The 18th century witnessed major change with the development of policies aimed at making nature a key component of urban planning. In England, Georgian urban development heralded a new way of combining buildings and planted areas that would be visible, if not accessible, to all. The achievements of John Wood the Elder and John Wood the Younger in Bath are exemplary in this respect. In conclusion, the presence of nature in a city that is accessible to all had become an objective to work towards, albeit with limited success⁵.

Concomitantly and most importantly, the belief that this presence of nature had both physical and moral benefits became widespread. Nature, viewed as fundamentally circulatory and non-static, purifies through the movement it impresses on air and water. Planting operations repelled disturbances such as fumes and smoke that would now be known as pollution. Yet these benefits pale in comparison to nature's contribution to the moralization of the city. Supported by the Enlightenment philosophy, the combination between nature and morality was the ultimate justification of its introduction in cities in a form aimed at the public. Drawing inspiration from this ideal, a project such as the Ideal City of Chaux designed in the last years of the 18th century by architect Claude-Nicolas Ledoux could suggest almost literally building a new city in the countryside⁶.

5. Charles-François Mathis, Emilie-Anne Pépy, *Greening the City. Nature in French Towns from the 17th Century*, Winwick, White Horse Press, 2020; Jan Synowiecki, *Paris en ses jardins. Nature et culture urbaines au XVIIIe siècle*, Ceyzérieu, Champ Vallon, 2021 (in French).

6. Mona Ouzouf, *L'École de la France. Essais sur la Révolution, l'utopie et l'enseignement*, Paris, Gallimard, 1984, "Architecture et urbanisme : l'image de la ville chez Claude-Nicolas Ledoux", pp. 286-320 (in French).



L'architecture considérée sous le rapport de l'art, des mœurs et de la législation, 1804, *Ideal City of Chaux*.
Claude-Nicolas Ledoux

The Enlightenment also brought a new perspective, consisting in using certain natural sequences such as forests, parks and gardens as models to consider the city in an unprecedented way. Architecture theorist Marc-Antoine Laugier proposed drawing inspiration from the way in which these sequences alternate apparent order and disorder, uniformity and the picturesque, to rethink the urban organism at a remove from the excessively restrictive geometrical structures⁷. In other words, the idea was to create a hybrid form of nature that is carefully controlled and nature untamed, at least on the surface, as well as models of a French formal garden and an English landscape garden. In his 1973 book *Architecture and Utopia*, Italian architecture historian Manfredo Tafuri proposed to interpret this desire for hybridization as a compromise between planning and the laissez-faire system that is characteristic of early modern capitalism⁸.

Without deciding matters on this last point, the remarkable persistence of the belief in an urban nature that is both physically and morally beneficial, which was developed in the 18th century, is striking. A nature that is equally aimed at the public and at private individuals, a nature without which the city cannot claim to be truly civilized. We have never really broken free of this mindset that combines revegetation and civic values. It is as if the social contract is dependent on an urban nature available to all if it is to be valid in a city. In this respect, we have remained broadly modern, at least if we agree that modernity began at the Enlightenment.

7. Marc-Antoine Laugier, *An Essay on Architecture*, 1753, English translation Hennessey & Ingalls, 1977.

8. Manfredo Tafuri, *Architecture and Utopia. Design and Capitalist Development*, Bari, 1973, English translation Cambridge and London, The MIT Press, 1976.

Nature and infrastructure in industrial-era metropolises

19th-century industrial cities regarded the presence of nature as being of the utmost importance. This issue became a primary concern due to two factors. The first concerns the acceleration of urban growth, the increase in the number of industrial establishments that caused disturbances and the often-mediocre quality of cheap constructions. These factors consolidated the belief that only nature could restore inhabitants' good physical health. Many cities were also facing political and social unrest at the time. Tensions between the ruling and working classes gave rise in particular to fears which prompted a French politician of the July Monarchy to remark that "the barbarians who threaten our society are not in the Caucasus or on the steppes of Tartary, but in the settlements surrounding the industrial cities"⁹. In addition to restoring physical health, nature must also heal the divides in industrial societies.

Urban nature came with many technical issues that needed to be resolved. While the legacy of the Enlightenment is clear in the expectations of the presence of nature in cities, the tight coupling between this and a firmly industrial approach to urban planning was a new development. Naturally, city councilors and gardeners had long been aware of the practical difficulty in preserving plant species in urban areas, particularly when they are in direct contact with the public¹⁰. The 19th century viewed them as part of a much more systematic approach. Above all, tree-lined avenues and parks were frequently combined with major infrastructure work. This was the case, as we will see, for Central Park in New York.

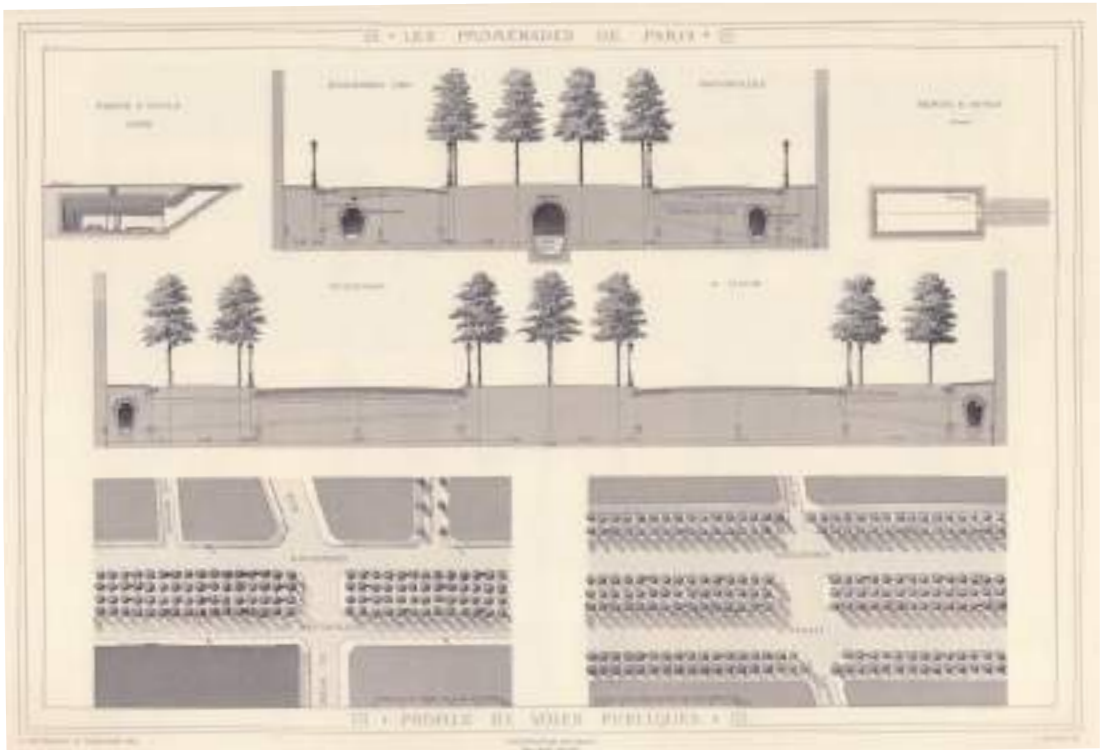
Urban nature came with many technical issues that needed to be resolved.

Few cities went as far in this respect as Napoleon III's new Paris. Prefect Haussmann worked with his engineers and gardeners to create tree-lined avenues, parks and gardens, mainly entrusted to the Prefect's right-hand man Adolphe Alphand, an engineer and graduate from the prestigious Ponts et Chaussées school. These were designed as technical infrastructure, or to be more

9. Saint-Marc Girardin, *Journal des débats*, December 8, 1831 (in French).

10. Cf. Jan Synowiecki, *op. cit.*

precise as one of the new networks necessary to remodel the French capital. This combination of urban nature and infrastructure is clear in the pages of *Promenades de Paris*, Alphand's upscale publication in which he presented his urban works from 1867 to 1873. In the cross-section of the new planted avenues, trees are represented without their roots and treated as lamp posts, paving stones, water pipes and the sewer system. Nature in the city is inseparable from a catalog of devices and systems designed to be functional¹¹.



Les Promenades de Paris, 1867-1873, cross sections of roadways.
Adolphe Alphand

The network of parks and gardens was given a hierarchy in the same fashion as the major technical networks for which the same civil engineers also had responsibility. At the top of this hierarchy were the Bois de Boulogne and the Bois de Vincennes, restructured woodland areas that become known as the “lungs of Paris”. Then came the inner-city parks that were either created from scratch or remodeled: Monceau, Buttes-Chaumont, Luxembourg and Montsouris. One level below were the major squares such as Le Temple and Les Batignolles, then the partial landscape development of intersection squares such as the Place de

11. See Michel Audouy, Jean-Pierre Le Dantec, Yann Nussaume, Chiara Santini (ed.), *Le Grand pari(s) d'Alphand. Création et transmission d'un paysage urbain*, Paris, Éditions de La Villette, 2018 (in French), and above all Chiara Santini, *Adolphe Alphand et la construction du paysage de Paris*, Paris, Hermann, 2021 (in French).

l'Étoile, followed by the tree-lined avenues with their rootless trees, at least on the engravings of Promenades de Paris.

This was a considerable undertaking at the time. Its significance can be more deeply understood if we consider one of the more original creations of Alphand and his teams: the Buttes-Chaumont Park located in one of the poorest areas of Paris. Emblematic of the new Paris desired by Napoleon III and Haussmann, the park opened to mark the International Exposition of 1867 and presented a greater symbiosis between nature and technology than anywhere else with its artificial hills, bridges and widespread use of concrete. While the way users moved around the park was of key importance, based on a hierarchical network of curved promenades, it is not simply a question of technical efficacy. In line with the landscape designs found in the Anglo-Chinese gardens of the 18th century, the promenade was intended to have a moral and civilizing effect generated by the variety of scenes encountered and the feelings they inspire.



Plan of the Buttes Chaumont Park, 1888
City of Paris, Urban Planning Department

The motivation behind the Buttes-Chaumont was twofold: to allow all inhabitants to enjoy nature in the city, at least in theory, and to make its presence a main driver of moralization. Unequal but all connected: the political plan for Haussmann's parks, gardens and tree-lined avenues announced an ideology that would go on to influence many other networks, which can even be found to some extent in our current social networks. With its intention to make movement a civilizing factor, the urban park outlines a new way of considering both the physical and moral dimension of the city. It is no coincidence that its principal designer, one of Alphand's main colleagues, the engineer Henri Darcel, was also in charge of redeveloping a key feature of the new Paris that was the Place de l'Étoile and the avenues that depart from it like the spokes of a wheel¹².

On both sides of the Atlantic, the same close ties between nature and technology can be seen. There are many similarities between Haussmann's parks and gardens in Paris and New York's Central Park which was completed in 1876. Even though its designers, Frederick Law Olmstead and Calvert Vaux, were not

12. Antoine Picon, "Nature and engineering. The Park of the Buttes-Chaumont", *Romantisme*, 2010/4, n° 150, pp. 35-49.

striving to create urban nature as a technical network, they left much room for infrastructure in the park, roads and above all the colossal reservoir intended to hold the water from the Croton Aqueduct¹³. The desire to cater for all classes of society, that is evident in the American “reform parks” of the first decades of the 20th century, such as Pulaski Park in Chicago and Funston Park in San Francisco, proved to be just as significant¹⁴.

Just as it heightened the political aspect of an urban nature that was supposed to make cities healthier and above all pacified, the 19th century tied it to a set of technical accomplishments such as roads, reservoirs and different networks, which significantly complicated its status. While Olmstead and Vaux may have intended to allude to a primitive state in Manhattan Island with Central Park, giving their creation a feel of Arcadia or of a repository of a bygone age, the result proved to be much more complex and the reference to a period before humankind’s heavy intervention was a fantasy. Even if original urban ecosystems grow from the many interstices and abandoned elements of urban planning, the most visible form of nature in cities was already a “techno-nature”, in reference to a term used in contemporary social science to define the irretrievable character of the hybridization of natural and artificial elements¹⁵.

13. Matthew Gandy, *Concrete and clay. Reworking nature in New York city*, Cambridge, Massachusetts, MIT Press, 2022.

14. Galen Cranz, *The Politics of park design. A History of urban parks in America*, Cambridge, Massachusetts, MIT Press, 1982.

15. See for example Damian F. White, Chris Wilbert (ed.), *Technonatures. Environments, technologies, spaces, and places in the twenty-first century*, Waterloo, Ontario, Wilfrid Laurier University Press, 2009.

From the garden city to the modernist city

"This could now be the floorplan of the major city!", claimed Le Corbusier about his Plan Voisin, in Volume I of his Complete Works when looking at a photograph of a peaceful park partially shrouded in mist¹⁶. There is nothing anecdotal about this reference. For the architect and urban planner, the modern city had to be green and thoroughfares separate. The vertical concentration of office buildings and collective housing resting on piles had the advantage of freeing up ground space, allowing the creation of an almost unbroken



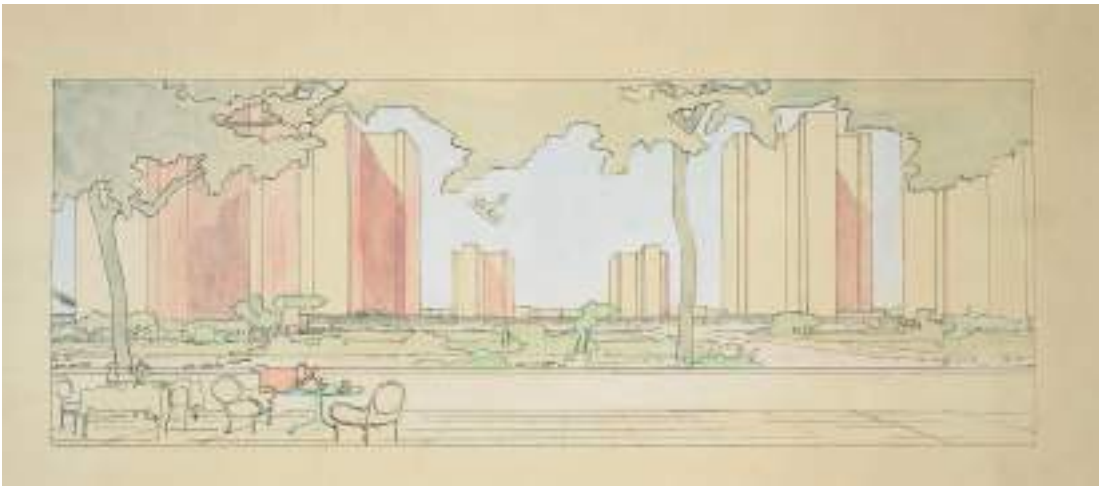
Complete Works 1910-1929, Basel, Boston, Berlin, Birkhäuser Publishers, 1995, *"This could now be the floorplan of the major city!"* Le Corbusier

green coverage at ground level. He shared this belief with many other developers. Unlike the often-conveyed image of a concrete approach to the city, modernist urban planning was concerned with the importance of nature in the city. It drew inspiration from the garden city model theorized by Ebenezer Howard as of 1898, which began with the completion of the town of Letchworth in England and went on to enjoy great success across the globe¹⁷. Yet as they put forward an ideal that reconciled industrial civilization and nature, and unlike conventional architecture promoted by most of the creators of garden cities, modernist urban planners intended to break with a number of existing architectural and urban codes. The "corridor-street" detested by Le Corbusier disappeared, leaving room for buildings set at a distance from each other and standing in the center of a park accessible to everyone.

16. Charles-Edouard Jeanneret, known as Le Corbusier, Complete Works 1910-1929, Basel, Boston, Berlin, Birkhäuser Publishers, 1995, p. 116. On the relationship between Le Corbusier, landscapes, and the garden city model, see Jean-Louis Cohen (ed.), Le Corbusier. An Atlas of modern landscapes, New York, Museum of Modern Art, 2013.

17. Peter Hall, Colin Ward, Sociable cities. The Legacy of Ebenezer Howard, Chichester, Wiley, 1998; Ginette Baty-Tornikian, Amina Sellali (ed.), Cités-jardins, genèse et actualité d'une utopie, Paris, Éditions Recherche, 2001 (in French); Kermit C. Parsons, David Schuyler (ed.), From Garden city to green city. The Legacy of Ebenezer Howard, Baltimore, London, Johns Hopkins University Press, 2002.

We know now what became of this dream: the shelving of this park that was admittedly crossed by motorways, highways and access roads but which stood tall over a ground level freed up for small "green areas" that suffered from a chronic lack of maintenance. It is now almost only in tropical areas with vegetation that grows without intensive upkeep, such as Brasilia and Chandigarh, that we can see a glimpse of what the modern city was set to be.



Le Corbusier, drawing for the Ville contemporaine of three million inhabitants, 1922, Le Corbusier Foundation.

Nature under threat and restorative nature

So where do we stand today in relation to this long history we have inherited? First, we must acknowledge the complex relationship that we have with the long-standing interactions between nature and urban areas. The modernist era, for example, is almost always glossed over for reasons which concern our desire to deny anything in modernity that contributed to the current environmental crisis. This very modernity did, however, promote the ideal of the garden city that we remain reliant on today¹⁸. Some omissions that we have only recently begun to recognize are proving to be even more contradictory. The threat to the planet caused by technological and industrial development gradually became apparent from the mid-1950s to the 1970s and was subsequently suppressed for the next two decades. In the 1950s, the prospect of nuclear war brought an awareness that the world is finite. During the 1960s, public figures such as the US developer Buckminster Fuller were deeply concerned by the damage caused by pollution. In an essay written in 1969, Fuller went as far as comparing the earth to a spaceship with limited resources and capacity to absorb waste¹⁹. This movement of awareness culminated in 1972 with the publication of the Club of Rome report on the limits to growth and the oil crisis that began the following year²⁰. Yet while a change in industrial and economic model became almost inescapable, it was all soon forgotten and the 1980s and 1990s celebrated the accomplishments of capitalist development that even contaminated communist China, while the USSR collapsed. This development led to unprecedented globalization in production and trade. Had the issue of nature and the threats caused by industrial development taken a permanent backseat?

The repressed concerns of the previous period did, however, continue to exist in society, particularly among those in charge of steering the future of our cities. The rise of urban planning using natural elements is a testament to this persistence. We worry about the growing threats against nature and consider the way

18. *The city-state of Singapore openly embraces this legacy*. Peter Rowe, Limin Hee, op. cit.

19. R. Buckminster Fuller, *Operating manual for spaceship earth*, Carbondale, Southern Illinois University Press, 1969. Before Fuller, the comparison had been made by US economist Kenneth Ewart Boulding.

20. Donella H. Meadows, Dennis L. Meadows, Jorgen Randers, William W. Behrens III, *Limits to growth. A Report for the Club of Rome's project on the predicament of mankind*, New York, Universe Books, 1972.

The perception of nature under threat is compounded by expectations for nature to be restorative.

to preserve it, or in many cases to restore it. We use nature to remedy the destructive effects of industrialization and above all to unite an increasingly fragmented urban fabric²¹. The perception of nature under threat is compounded by expectations for nature to be restorative. These expectations are particularly salient in former industrial regions such as the Ruhr in Germany²².

What makes the expectations much higher is that in many places people are thinking about the potential disappearance of the city, swallowed up by unbridled urban development without any clear limitations. In France, urban planner Françoise Choay used a striking expression for these considerations raised previously by sociologist Henri Lefebvre. She published an article in 1994 entitled “The Death of the City and the Rise of the Urban”²³. In Western nations, this crisis has political repercussions. In the European tradition, the *civitas*, the city, was the home of politics. It may have been gradually superseded by nation-states, but it continued to emerge as the original place of democratic deliberation. Challenging this raises the question of the future of a fragile social fabric.

It is against this backdrop that an understanding of nature and landscape as a key component of urban planning gradually emerged in two new forms in relation to previous periods. The first form concerns the use of nature to heal the wounds caused by industrial development, the many disused factories, abandoned extraction sites, polluted waterways and soils that conventional urban planning failed to overcome. The greening of the Ruhr area is one of the most emblematic examples of this remedial function. We can add to this the many urban landfill redevelopment projects, starting with Freshkills Park in New York, the largest ever undertaking of this kind²⁴. The regeneration of the Cheonggyecheon waterway in Seoul used quite similar approaches, as did New York’s High Line, which converted an abandoned overhead train line into an urban park²⁵.

21. Hillary Angelo, “The Greening imaginary. Urbanized nature in Germany’s Ruhr region, *Theory and Society*”, 2019–48, pp. 645–669.

22. On the complex issue of restoring natural areas, see for example Marion Waller, *Artefacts naturels. Nature, réparation, responsabilité*, Paris, Éditions de l’Éclat, 2016 (in French).

23. Françoise Choay, “*Le Règne de l’urbain et la mort de la ville*”, in J. Dethier, A. Guieu (ed.), *La Ville, art et architecture en Europe, 1870–1993*, Paris, Éditions du Centre Pompidou, 1994, pp. 26–35 (in French). For an insightful criticism of the key thesis of this article, see for example Brieuc Bisson et al., “*La Mort de l’urbain et le règne de la (grande) ville ?*”, in Félix Adisson, et al. (ed.), *Pour une Recherche urbaine*, Paris, CNRS Éditions, 2020, pp. 107–123 (in French).

24. Imène Ouali-Bourahla, *Enjeux et impacts de Fresh Kills Parkland (New York) (...) sur l’évolution de la démarche et la théorie du projet de paysage dans le cadre de la requalification des décharges urbaines*, doctoral thesis at Paris I-Sorbonne University, 2022 (in French).

25. Peter G. Rowe (ed.), *A City and its stream. The Cheonggyecheon restoration project*, Cambridge, Massachusetts, Harvard University Graduate School of Design, 2010; Christoph Lindner, Brian Rosa (ed.), *Deconstructing the High Line. Postindustrial urbanism and the rise of the elevated park*, New Brunswick, Camden, Newark, New Jersey, London, Rutgers University Press, 2017.



Duisburg Nord Landscape Park, 1994, view of the disused blast furnaces

The High Line is actually at the crossroads of this first trend and that of landscape urbanism. Its main designer, landscape architect James Corner, is one of its pioneers. The brainchild of US architect and urban theorist Charles Waldheim, landscape urbanism intends to promote the landscape as a different way of viewing the city and its transformation. It gives even more importance than in the past to natural elements, by preferring landscaping to the conventional procedures of zoning and composition, dynamic processes to static objects and horizontality to verticality²⁶.



High Line, New York, 2009-2019

France did not wait for the term “landscape urbanism” to be coined to promote a landscape-based approach to urban planning. The pioneering designs and achievements of Bernard Lassus, Jacques Sgard, Jacques Simon and Michel Corajoud are prime examples of this. French-style landscape urbanism also drew

26. Charles Waldheim, *Landscape as urbanism*, Princeton, Oxford, Princeton University Press, 2016.

inspiration from the trailblazing work of Gilles Clément which provided a fresh insight into the relationship between nature and gardens, taking the time to listen more to nature. From Alexandre Chemetoff to Jacqueline Osty, Michel Desvigne to Agence Ter, this landscape approach to urban development has continued to the present day. In its regular awards to landscape architects, the Grand Prix de l'urbanisme demonstrates the influence of this movement²⁷.



Aerial view of the Atelier Jacqueline Osty firm's plan for Rouen, 2014-present
Osty et associés / Joyland

With a more flexible structure than architectural and urban composition, landscaping incorporates much more disparate elements, resonating with a city that is often fragmented and heterogeneous. It enables also to provide an identity the low-density urban fabric resulting from urban sprawl, incorporating into the city a variety of natural areas, from public forests to arable land. The more conventional tools do not boast these qualities. However, landscape urbanism does not meet all the challenges that contemporary cities face in the era of the Anthropocene and climate change. An acknowledgement of the different forms of urban nature cannot be reduced to ways of remedying excessive urban development.

27. See issue 622 of the Japanese review *a+u: Architecture and Urbanism*, "Landscape Urbanism in France" published in July 2022 which we coordinated with Henri Bava.

Cities, urban areas, and the environment

In recent decades, there has been a major shift in focus on nature in cities with the acknowledgement of uncontrolled flora and fauna which make up complex and hybrid ecosystems. These are often associated with an accelerated circulation of species due to globalized exchanges²⁸. It is as if there are actually two forms of nature in urban areas: a planned and carefully maintained nature and a spontaneous, residual and invasive nature. There is a contradiction between the deliberate geography of tree-lined avenues, gardens and parks that respect the principles of urban composition and the distribution approaches resulting in seemingly random developments. There are also social and political combinations that go well beyond institutional approaches. The British geographer Matthew Gandy uses the term “constellations” to define this system²⁹.

Growing environmental concerns have led to more holistic considerations on how cities operate in addition to their impact on ecosystems. Introduced in 1965 by US engineer and academic Abel Wolman, the concept of urban metabolism aims to consider material and energy flows³⁰. Due to cities’ massive environmental footprint, this approach challenges the relevance of urban projects, even large-scale ones. Viewed in the same way as the science of ecology, cities are seen as complex environments in which it is becoming increasingly difficult to distinguish between living beings, be they controlled or uncontrolled, and technical systems.

Combined with the increased importance of environmental concerns, the growing set of interactions between the natural and artificial should lead to a complete overhaul of technical systems. Long understood by historians as a system or set of systems, from French historian Bertrand Gille’s pioneering work to the work of US historian Thomas Hughes, contemporary technical systems do not fit this framework due to their complex nature. Above all, there is a

28. Jean-Pierre Lévy, Isabelle Hajek, “La Nature urbaine, une utopie paradoxale”, *Futuribles*, issue 414, September-October 2016, pp. 61-71 (in French).

29. Matthew Gandy, *Natura urbana. Ecological constellations in urban space*, Cambridge, Massachusetts, Londres, MIT Press, 2022.

30. For a recent discussion of these issues, see the articles published in the issue of Flux magazine edited by Sabine Barles and Jean-Baptiste Bahers, “Transition ou consolidation du régime dominant : Le Métabolisme urbain en question”, Flux, 2019/2-3 (issue 116-117) (in French).

heterogeneity which cannot be easily limited to the systemic interaction between a finite number of factors³¹. Rather, should they not be viewed as a key component of the environments in which we circulate, or even in their increasingly indissociable alliance with natural elements, which gives rise to “techno-nature”, as a fully-fledged environment, an omnipresent environment, enabling urban theorists such as Neil Brenner to suggest a “planetary urbanization”, drawing inspiration, as did Françoise Choay, from the analyses of Henri Lefebvre³²?

From cities to urban areas and from urban areas to the more general issue of the environment: does this set of shifts herald a new “death of the city”, to use Françoise Choay’s expression? In line with landscape urbanism but extending well beyond the compositional approaches that continue to structure it, new figures of urban planning still consider the city in specific terms. For example, biodiversity corridors are intended to articulate the uncontrolled and controlled forms of nature in the city, and de-artificialized areas are designed in response to intense rainfall caused by global warming. This is the principle behind China’s “sponge cities”³³. It is as if viewing the city as an environment, or rather as a set of environments, steps up the now necessary diversification of planning tools.

This diversification calls for land use to be reconsidered. As highlighted by landscape architects such as Agence Ter, it tends to promote a cross-section view rather than a ground plan, once again demonstrating how the natural and the artificial are interlinked³⁴. Lastly, it re-engages with the close association between nature and infrastructure that was a key element in the 19th century. In practice, many projects go much further than this association, using some natural sequences as fully-fledged items of infrastructure, as was the case with Haussmann’s Paris. The artificial wetlands that are being created to protect coastal cities from rising water levels and to address unprecedented heavy rainfall are for example infrastructure systems that add to and in some cases even replace concrete breakwaters and rainwater drainage systems. The widespread adoption of green and blue infrastructure policies across the globe may well increase the relevance of this approach. Haussmann and his engineers planted trees in Paris as part of a network. On another scale, could the ecological, land and water continuities that are being sought for this purpose be viewed as infrastructure systems in their own right?

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31. Bertrand Gille, “Prolégomènes à une histoire des techniques”, in *Histoire des techniques*, Paris, Gallimard, 1978, pp. 1-118 (in French); Wiebe E. Bijker, Thomas P. Hughes, Trevor J. Pinch (ed.), *The Social construction of technological systems. New directions in the sociology and history of technology*, Cambridge, Massachusetts, MIT Press, 1993.

32. Neil Brenner (ed.), *Implosions/explosions. Towards a study of planetary urbanization*, Berlin, Jovis, 2014.

33. Philippe Clergeau (ed.), *Urbanisme et biodiversité. Vers un Paysage vivant structurant le projet urbain*, Rennes, Apogée, 2020 (in French).

34. Henri Bava, Michel Hössler, Olivier Philippe, *Sols vivants, socles de la nature en ville*, Paris, Agence Ter, 2021 (in French).



Cross sections for the Plaza Glories project in Barcelona, 2014-2024
Agence Ter



Cross sections for the Plaza Glories project in Barcelona, 2014-2024
Agence Ter

This new opportunity to consider certain aspects of the presence of nature in urban areas from a firmly infrastructural perspective is set to bring about a convergence of an ecological approach and the use of digital technologies, the green city and the smart city. Many major cities are already managing their tree populations through databases. Going even further, the city-state of Singapore is modelling the giant tree species planted along its highways according to the finite

element method to prevent accidents caused by falling branches ³⁵. A promising avenue for development is the combination of digital technology and the management of natural resources. Under certain conditions, this could even be extended to urban agriculture.

The main challenge lies in the need to constantly operate on different scales, to consider the existence of unplanned microecologies, mid-sized planned systems and large-scale natural areas simultaneously. As living systems ignore administrative and political boundaries, their management must be both local and regional, the latter term being understood in a variety of ways. Urban environments are made up of many different interconnected levels. How can this situation be best addressed? Without falling into geographical and ecological rigidity, and provided that it is accepted that environments and areas are constantly changing, the concepts of organic or ecoregion, distant heirs of the regional approach of Scottish biologist and sociologist Patrick Geddes, may prove useful in this respect³⁶. We live between the city (in the conventional sense), urban areas and the environment, and must learn to move constantly between them.

The development of urban agriculture often comes with lively debate. It stands to gain from being considered within a multi-scale framework. The new relationship between agriculture and urban areas cannot be reduced to growing food and creating farms in city centers, even though much can be learned from experiments such as the Ferme du Rail in Paris³⁷. Often accused of being merely an occupation for wealthy city-dwellers who would grow vegetables in the same way that Marie-Antoinette reared sheep in Versailles, urban agriculture is a challenge on many levels ranging from the district to the region and beyond, since, following on from the work of economists such as Pierre Veltz, production and consumption issues cannot always be reduced to local approaches ³⁸.

Urban agriculture can be both high-tech and low-tech; it can include off-ground cultivation and permaculture. This reflects some of the most fundamental questions concerning our contemporary world, torn between technological development that has constantly been ramped up despite the repeated warnings of environmentalists and the now broadly accepted awareness of the seriousness of the crisis we are experiencing. Is the way out of this crisis synonymous with more or less technology? Unless it is possible to mitigate its use as suggested by Pierre Veltz when he considers the analysis put forward

Urban agriculture is a challenge on many levels ranging from the district to the region and beyond.

35. Peter Rowe, Limin Hee, op. cit.

36. Alberto Magnaghi, *La Biorégion urbaine. Petit traité sur le territoire bien commun*, Paris, Eterotopia, 2014 (in French).

37. Clara et Philippe Simay, *La Ferme du rail. Pour une ville écologique et solidaire*, Arles, Actes Sud, 2022 (in French).

38. Pierre Veltz, *L'Économie désirable. Sortir du monde thermo-fossile*, Paris, Le Seuil, 2021 (in French).

by Philippe Bihouix in *The Age of Low Tech* ³⁹. A reflection of this situation of uncertainty, the deliberately low-tech decisions made by the Ferme du Rail or the “organopónicos” farms in Cuba contrast with the high-tech direction of experiments conducted by companies such as Fujitsu and Toshiba in Japan ⁴⁰.

We may or may not believe that it is possible for cities to be transformed into major vegetable producers. Regardless, the debate surrounding urban agriculture is all the more unavoidable that it is linked to one of the most fundamental dimensions of the contemporary presence of nature in urban areas, namely the goal of finding new forms of social contracts and citizenship. How can the Enlightenment’s combination of urban nature and policy be reconsidered today? This is a crucial question that has been made even more pressing with the advent of the COVID-19 pandemic.

39. Philippe Bihouix, *The Age of Low Tech. Towards a Technically Sustainable Civilization*, Bristol, Bristol University Press, 2020.

40. Clara and Philippe Simay, op. cit.

Towards a new social contract?

Many photographs of urban agriculture depict smiling people who are happy to be together. This kind of image is very trite. However, the reason why such pictures are significant is that they tap into our shared constructs and expectations. The importance of urban agriculture is not due to the volume of its production which remains nominal compared to the countryside. Rather, it is due to the desire for solace that it expresses which goes beyond relations between people. It must also be extended to people's relationship with natural elements and more generally with all that is "non-human", to use an expression that has become commonplace in contemporary humanities and social science. British anthropologist Timothy Ingold and US sociologist Richard Sennett promote a rediscovery of the complicity with matter, which they believe was reflected by traditional crafts. This complicity was synonymous with gentleness, in complete contrast with the violent machining techniques promoted by industrialization⁴¹. The principles of permaculture allude to a reconciliation with the plant world. This project bears witness to the fascination with the "language of trees" that philosopher Emanuele Coccia attempted to theorize by making the secret life of plants a model for human life choices⁴². The ethical, scientific, and legal dimensions of animal rights are considered⁴³. Associations are being created to advocate for mountains, forests and rivers, a practice that reflects the principle of the "parliament of things" proposed by Bruno Latour in the 1990s⁴⁴.

41. Timothy Ingold, *Making. Anthropology, archaeology, art and architecture*, London, Routledge, 2013; Richard Sennett, *The Craftsman*, New Haven, Yale University Press, 2009.

42. Emanuele Coccia, *The Life of Plants. A Metaphysics of Mixture*, Cambridge and Medford, Polity Press, 2019.

43. Élisabeth de Fontenay, *Le Silence des bêtes. La Philosophie à l'épreuve de l'animalité*, Paris, Fayard, 1999 (in French).

44. For example, an association was created in Corsica in 2021 to defend the rights of the Tavignagnu river. "En Corse un fleuve a désormais sa personnalité juridique", article published on August 22, 2021 on the "L'Info durable" website, <https://www.linfordurable.fr/environnement>, accessed on April 5, 2023. Concerning the "parliament of things", see Bruno Latour, *Politics of Nature. How to Bring the Sciences into Democracy*, Cambridge and London, Harvard University Press, 2004. Just as they support Bruno Latour's ideas concerning the possibility of the "politics of nature", these practices reflect some of the principles behind local water commissions in France, which are deliberately presented as parliaments for water.

"How will we live together?", the theme of the 2021 Venice Architecture Biennale, extended well beyond the realm of human beings. How can we live with all that is non-human? Several decades ago, a group of experts in the history and sociology of science and technology brought about in-depth renewal in their discipline by highlighting the role of scientific and technical systems in the social fabric⁴⁵. Among them, Bruno Latour already stood out for the radical way in which he challenged the separation between non-human and human as well as the distinction between the natural and artificial. Since the creation of research programs focusing on the relationships between science, technology, and society, often referred to with the acronym STS, a shift has occurred. Research investigates more often the role played by the non-human, or nature if one prefers, in the creation of society. Yet the point of arrival of this pathway is still governed by a techno-nature that blurs the distinction between natural and artificial. In this respect, it is symptomatic that one of its most influential thinkers is Bruno Latour, the very person who made insightful developments in the role of science and technology in the production of a social contract.

Comment faire société en incluant le non-humain ?

How will we live together? This question is particularly pressing in cities. Urban agriculture is one of many aspects of the project to rebuild social ties in a new way. What makes it original is that the ambition to include a set of non-human entities has never been so clearly expressed. This project is also demonstrated through the interest in the presence of unplanned nature in cities and naturally through the desire for greening that goes far beyond conventional parks and gardens. Such an ambition may appear out of step with reality, or even utopian given the hopelessly human inequality and violence of the contemporary world. However, the environmental crisis and the particularly dramatic effect of global warming in urban areas are an incentive to seriously consider the requirement of nature in cities and the close ties it enjoys with a strictly political ambition.

45. The concept of "co-production" between science, technology and sociology sums up this approach relatively well. Sheila Jasanoff, *States of knowledge. The Co-production of science and the social order*, New York, Routledge, 2004.

The plurality of nature and the non-human?

As the term non-human has gained prominence in contemporary humanities and social science, it cannot be separated from criticism of the very idea of nature put forward by philosophers such as Timothy Morton or anthropologists such as Philippe Descola. According to Morton, as the idea of nature heightens the arbitrary separation between the human and non-human, it is impossible to adopt a genuinely ecological way of thinking that focuses on the many links that bring them both together⁴⁶. For Descola, the Western conception of nature cannot be extended to all human societies⁴⁷.

At the same time, the lay press and the general public have never referred so much to nature and the threats it faces which in turn endanger humans. This discrepancy between scholarly debate and common perception is puzzling. Non-human or nature: as the types of position discussed above appear to be unmoving, perhaps it is a question of vocabulary rather than content. If nature is to be understood as something completely separate from what is human, humanities and social science converge with a set of environmental sensitivities to reject this arbitrary separation. They also agree that our representations of nature are always partial, contrasted from one society or social group to another, and that they are influenced by ever-changing histories, although science is attempting to make them timeless. Rather than nature in the singular, it is preferable to use natures in the plural, with their varied and changing conceptions and uses of the non-human that sometimes enter into conflict with each other. Between threatened natures and restorative natures, unplanned and planned natures, the natures of the advocates of urban agriculture and the natures to which their critics refer, the city showcases this plurality. It is within the city that our common future as indissociably technical and political beings is largely at stake.

46. Timothy Morton, *The Ecological thought*, Cambridge, Massachusetts, London, Harvard University Press, 2010.

47. Philippe Descola, , the University of Chicago Press, 2013.

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