Dancing with the Water Wolf & Choreographing Urban Ecologies

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Prologue: The Water Wolf & Engineered Nature
The water wolf is an allegorical destructive figure in Dutch history, literature and folklore known for the devouring action of wind-driven water on soft shorelines. Throughout time, the water wolf has stalked the land and, according to historian of medieval Europe William TeBrake, by 1300 AD necessitated the building of dikes, dams, sluices and drainage canals for human occupation (until that time, settlement and agricultural use of the lowlands was possible by straightforward and simple drainage techniques and by occupying only the higher grounds, not under influence of the sea). The development of hydraulic engineering and water management to perpetuate drainage while protecting against inundation led to the conundrum of engineered nature—a vicious cycle of the occupation of lowlands, subsidence, hydraulic measures for deeper drainage, further subsidence, newer and more effective hydraulic engineering, further subsidence, etc.

In 1641, poet Joost van den Vondel penned Aenden Leeuw van Hollant (‘to the Lion of Holland’) on the Nieuwe Caerte Provisioneel concept ontwerp ende voorslag dienende tot de bedyckinge vande groote water meeren (From the ‘New Map’ of the ‘Provisional draft plan and proposal for the dyking of the large lakes’, published in 1641. [figure 1] The plate was part of the ‘Haarlemmermeer-boek’ which planned to reclaim the Haarlemmermeer (Haarlemmer Lake) north of Amsterdam, masterminded by architect, mill builder and hydraulic engineer Jan Adriaanszoon Leeghwater (1575-1650).

The land lion versus the water wolf. The tale is emblematic of the thorny relationship of technology and culture in the lowlands. Since the middle ages, civil engineering and the never-ending building of infrastructure is what has enabled the nation to prevail in its enduring struggle between land and sea, to literally create new landscapes and subsequently to continue to urbanize. The contemporary notions of natural/artificial, land/water and landscape/city in The Netherlands are so deeply intertwined they are often impossible to clearly distinguish. The ordering and use of space is inextricably bound to a social-territorial order and the constructed landscape is a result of administrative, socio-cultural and economic processes as much as it is of deliberate design. All the while, the water wolf has been tamed but never vanquished.

Choreographed Urban Ecologies in Five Scenes
Strootman Landscape Architects are a rare type of practitioners, particularly one could dare say in The Netherlands. They are evidently deeply entrenched in the long and unavoidable traditions of water management, and engineered nature but, at the same

time, thrive in poetically narrating sites and precisely choreographing habitats, public space and above all else beauty. The office combines a deep historical reading and interpretation of tangible and intangible sites’ pasts (such as geological conditions and legends) with the creation of rich new cartographies, of new lands, with carefully calibrated geometries and an uncanny degree of ecological precision. The story-telling/ mythology angle and scientific vigor make a potent combination of inputs for design elements.

This essay frames a selection of the office’s work through the contemporary lens of landscape/ ecological urbanism. The titles of five ‘scenes’ are encapsulated from essays of The Landscape Urbanism Reader, edited by Charles Waldheim, the architect who coined the term in 1996. Each scene opens with a number of theoretical underpinnings and aspirations of the cross-disciplinary field and is thereafter animated by a project from Strootman Landschapsarchitecten and others by international practitioners.

Scene 1: Landscape as Urbanism

It must be remembered that Charles Waldheim derived ‘landscape urbanism’ from the North American urban context at the end of the 20th century—an environment of decreased urban densities (and increased suburban environments), post-Fordist and post-industrial landscapes, convenient accommodation of the automobile and public realms of extensive vegetation. ‘Landscape urbanism describes a disciplinary realignment currently underway in which landscape replaces architecture as the basic building block of contemporary urbanism. For many, across a range of disciplines, landscape has become both the lens through which the contemporary city is represented and the medium through which it is constructed.’

Since the late 1990s, landscape urbanism has clearly captivated the professions of urbanism, landscape architecture and even architecture. Despite the fact that the term has already mutated to infrastructural urbanism or ecological urbanism by a number of proponents, landscape urbanism persists in Europe and elsewhere as the 21st century savior of the professions of the built environment—when individual disciplines are seemingly incapable of spatially dealing with the pace and uncertainties of socio-political, economic and ecological development challenges of our times. However, like all -isms, landscape urbanism and ecological urbanism are part of epochs (just as were/are modernism, post modernism, deconstructivism, critical regionalism, new urbanism, etc.) that follow a larger Zeitgeist. At the same time, it could be argued that landscape urbanism is a bit different—that it has become a clever marketing ploy, the labeling of a pre-existing phenomenon rather than being genuinely novel (perhaps like critical regionalism), since,
Aenden Leevw van Hollant
Uyt-hemse vyanden te sitten inde veeren
Te slingeren den staart Grootmoedich over Zee,
Is Ydel, als uw longh geslagen aen het Teeren,
Inwendich vast vergaet en gy met herte wee
Soo deerlyck Sucht en Kucht en Loost by Heele Brocken
Het rottende Ingewant te Keel uyt, inde Golff
Wat Baet het met uw Klauw al t’Oost en West te Plocken
Na dien u Byt int Hart dees Wrede Water Wolff
Nu uyt om over u Eerlangh te Triomferen
O: lant Leeuw Waecck eens op, en Weck met eenen Schreeu
Alt veen de Kennemaers, en Rynlants oude Heeren
Met d’Amsterdamers, tot noothulp van hun Leeuw
Men Sluyte met een Dyck dit dier, dat u Comt Plagen
De Wintvorst Vlieger met syn Moole wieken toe
De snelle Wintvorst weet den Water Wolff te lagen
In Zee, van waer hy u quam Knabblen nimmer Moe
De Veen Boer sit en wenst dees Water-jacht te Spoeien
En tveen Wyff roept: hy Ruymt de Lant Leeuw weyt op truym,
En suyght syn Longh gesont aen d’uiers vande Koeien
Zoo wint de Lant Leeuw Lant, soo puurt hy Gout uyt Schuym
To the Lion of Holland
To battle with a foreign foe,
To nobly swish your tail o'er the sea,
'Tis in vain, if your lungs be wasting,
Your innards ever failing, as with great labour
You sigh and cough so pitifully to bring up
Your rotting guts in lumps.
What avails it to plunder East and West with your claw,
Now that the Cruel Water Wolf bites you in the heart,
Bent on defeating you ere long?
O Lion Land, awake, and with a roar
Arouse all the peat bog dwellers of Kennemerland, the lords of Rhineland
And the Amsterlanders to succour their Lion.
Enclose this perilous beast with a dyke.
Let the Lord of the Winds with his fine mills
Empty the Water Wolf into the sea
Whence he came to assail you tirelessly.
The peat farmer urges on the water hunt
And the peat woman calls: He flees the Land Lion through the open land.
The cow's udder restores ailing lungs
And land is won for the Lion by spinning gold from foam.
in fact, landscape urbanism existed long before it was ‘branded’ as such. According to Waldheim, landscape urbanism benefits from the long-standing lineage of regional environmental planning, from Patrick Geddes through Lewis Mumford to Ian McHarg, yet remains distinct from that tradition. However, it could also well be argued that landscape urbanism is not so new at all and has centuries old roots grounded in an intelligence borne of necessity that led civilizations around the globe to seek a balance in creating their settlement structures with, by and through the (constructed) landscape: ‘… collectively they bear witness to a continuum of human effort to productively transform and socio-culturally appropriate nature and the landscape in order to effectively guide their use, occupation and urbanization. In general terms, they inscribed themselves within landscapes where the slightest difference of topography and relation to hydrology was all-important—both pragmatically and symbolically. The built and unbuilt environments worked as an eco-system. Man adapted to the environment, through patient, pragmatic adjustment to circumstances with sophisticated means and logics that worked with nature. Indigenous landscape urbanism created marvelous civilizations—whereby the landscape was the strategic asset for development.’ It could equally be argued that a number of both landscape architecture and urbanism practices in The Netherlands have been engaged in landscape urbanism since the onset of the struggle of man’s conquering of the forces of nature. In fact, in his manifesto, ‘Colonizing the Void,’ Dutch landscape architect Adriaan Geuze of West 8 likens colonization (or the creation of land) to the ultimate expression of human culture; man identifies with nature, occupies it and transforms it into landscape. He claims the cultivation of nature is a necessary act of survival, demanding and generating creativity in its opportunity for cultural expansion. At the same time, he recognizes the taboo of contemporary colonization, fuelled by a public debate which focuses on environmental issues and the presumed cultural heritage of the European Arcadian landscape. 

The statistical needs of contemporary mass culture seem to face the limits of physical expansion. The alps are trampled, the coastlines are drowned and arcadia is absorbed in a sprawl of commercial suburban development. Colonization has become a taboo, forwarding the end of culture. Geuze draws on the peculiarity of the Dutch landscape—a 100% artificial space, where each generation adds its own layer of colonization to the existing layer—and reveals how continuous colonization is inevitable. Geuze concludes by proposing a paradoxical condition wherein the void is the guide and source of inspiration for continuing urbanization. He claims that the promise of city planning lies in simultaneously allowing urban congestion and creating

Corner. Corner has written insightfully and intelligently on landscape urbanism, stressing its capacity to embody multiple scales, emphasize process, invent operative strategies for design, remain nested in a larger matrix and field, perhaps most importantly to create projective projects re-inspire the recent past’s ‘bureaucratic and uninspired failings’ of the planning profession. A project that is becoming increasingly influential is one developed for the 890 hectares Fresh Kills Landfill site of Staten Island, New York. It is emblematic of a huge 21st century reclamation project—where healing the Earth and reconstituted ecologies are to result from an interaction between human, natural and technological systems. Field Operations, Corner’s office, abandoned the idea of a complete and determined design for the site in lieu of an intricate layering of multiple flows in which their clues come from larger territorial modes of production and result in continual change of the large territory. ... history of the site, its consequential pollution and recovery and reprogramming as a public landscape was the challenge. Fresh Kills opened in 1947 as a temporary landfill; it officially closed in mid-2001 but was reopened months later to receive the ruins of the World Trade Center catastrophe. The four large mounds (25–70m high) of landfill (primarily household waste) leach toxic chemicals and heavy metals into the soil and methane voids. Excavating urban voids in contrast to urban congestion, providing individual voids for ultimate personal expression and creating large-scale voids that challenge colonization are amongst the design strategies he has tested in various research and built projects. Geuze stresses the fact that voids are the products of social and political forces and that the ‘texture of voids,’ the morphology of the landscape, can become the principle of urbanization. Geuze—with his manifestly Dutch perspective whereby landscape and urbanism are inseparable from civil engineering—aims to direct landscape’s evolution rather than control it. Geuze’s contribution to the landscape urbanism discourse resides in his simultaneous ecological and civil engineering orchestration of large territories where a non-pastoral image of nature prevails and structures development. In an unrealized West 8 project, Buckthorn City (Duindoornstad), Hoek van Holland, the site’s natural silting process is accelerated and consolidated using hydraulic engineering techniques. The existing coastline, canal routes and a large sand dune are the landscape features around which a spillover town of 400,000 for Rotterdam/ Den Hague is colonized. Urbanization is provoked by a newly defined series of urban ecologies which link new landfill with the existing coastline. Landscape guides the city’s development [figure 2]. Another founding father of landscape urbanism is James Corner.
lies hidden in the landscape. The project is premised on a pre-investment in the landscape and infrastructure of the shrinking economic condition of North Holland to anticipate eventual new housing development.

Strootman’s deep understanding of ecological processes and the management of nature led to the development of a ‘tool-box’ for design, whereby water ecologies of slow gradients and shallow foreshores create ‘soft worlds of reeds’ to mediate land and water, ‘boomerangs of forests’ to hold urban areas, and a 4km bar of lightly-polluted sludge as one of the financial bases of the project (working on the principle of cut-and-fill logics).

Scene 2: Constructed Ground

According to academic and practitioner Linda Pollak, landscape urbanism’s strength lies in its acknowledgement of temporality (stemming from cultural, historical, ecological and natural processes) and the notion of nested scales of space (as interpreted from Henri Lefebvre).

‘Constructed ground represents a hybrid framework that crosses between architecture, landscape architecture, and urban design, to engage the complexity of contemporary urban landscape. This framework invests in the ground itself as a material for design, using landscape as both a structuring element and a medium for rethinking urban conditions, to produce everyday urban spaces that do not exclude nature.’

In an iteration of ecological urbanism, ‘boomerangs’ of steep and hard-edged forests hold and protect, in concave curve geometry, a softer ecological gradient of reeds, bushes and urban areas. (Image 4b© Palmbout - Urban Landscapes)

In both projects, water is the primary medium of design—as an infrastructure for flood control, storm water and as a foil to (sub)urbanization. Its double function as recreational space and as a carefully hydraulically engineered landscape is an intelligent solution to address critical water management issues and provide creatively programmed public space.

In the Dutch project, east of Amsterdam, a triangular site contained by the Vecht River, the doubled and newly placed A1 highway and the railway is centered on a newly created 60 hectare lake that is fringed by carefully studied and planned ecologies of woodlands, reedlands and settlement ribbons. In France, a meander of the Seine River has been reframed with a 700 x 90 meter basin that appears as an artificial arm of the river that can serve as an outlet for the waters as it floods. However, the water is actually storm water coming from roofs from privately owned plots, public pedestrian areas and asphalt roads. In both projects, an artificial topography is a richly constructed ground that appears as both an urban balcony and as a submersible garden. In Bloemendalerpolder, 330 hectare of new nature is developed in conjunction with the lake and various contemporary urban tissue types (to total 2800 new units of housing) to create ecological functions of a water-based land mosaic while at the same time...
maintaining cultural links to the territory’s geographical history. [figure 6]. In Parc de Trapèze, the basin forms ponds and marshy areas around ‘islands’ with various environments—flower-covered prairies, peat bogs and orchards—which shrink or grow in size depending on the level of the water table; the constantly moving geography hosts a rich biodiversity and at times of peak flooding, becomes a harbor. In both projects, the constructed ground, from the precise manipulation of topography, is the primary urban design tool. In the Bloemendalerpolder project, the new city is intentionally planned as a juxtaposition of centers with different characters and scales, resulting from the specific interplays they orchestrate through the infrastructural net and the natural (green and blue) systems, topographical differences and related soil conditions and finally with the programmatic destinations allocated to them. 

Scene 3: Landscapes of Infrastructure

Infrastructure, by its very nature, is similar to landscape in that it is continually evolving, simultaneously precise and indeterminate and works strategically. It allows multiple authors and accommodates existing conditions and local contingency while maintaining overall functional continuity. Infrastructure constructs the site itself through the division, allocation and construction of surfaces, provision of services to support future programs and establishment of networks for movement, communication and exchange. Today, particularly in The Netherlands, the creation of infrastructure is no longer simply considered as the accumulation of large technical objects in isolation from their surroundings. More and more, landscape and infrastructure merge; civil engineering feats and landscape architecture collaborate to create new wonders as movement corridors and water management systems are (re) worked as new vessels of collective life. An entirely new spectrum of the public realm has become a fascinating terrain for investigation. In order to function, fit and be acceptable, infrastructure enhances the quality of the landscape. Hence, conceiving infrastructure blends with generating architecture, building landscapes, and producing urban settings and living environments. It engages social and imaginative dimensions as much as engineering. At the same time, in the landscape urbanism discourse, there has been a focus on infrastructure, as Elisabeth Mossup has stated. “Explorations in landscape urbanism have focused on infrastructure as the most important generative public landscape. … Such a reexamination of infrastructural space involves the recognition that all types of space are valuable, not...”

just the privileged spaces of more tradition parks and squares, and they must therefore be inhabitable in a meaningful way…. Landscape urbanism also suggests that this happens by an instrumental engagement with ecological processes as well as with the functions of infrastructure and the social and cultural needs of the community.  

As well, amongst others, landscape architect Chris Reed promotes a revised reading, wherein infrastructure becomes landscape, full of diverse terrains, habitats, destinations, paths, conduits, nodes, gardens and fields. While conceived as rational, absolute and utilitarian, infrastructure has the capacity to be appropriated and transformed toward social, cultural, ecological and artistic ends. Architectural accretions, layerings of program and use, existing infrastructures made useful – herein lays the basis for a new civic realm, one created by appendage and insertion. Conversely, architecture and landscape can appropriate the utility and serviceability of infrastructure. One could imagine landscape/architectural projects conceived as functional infrastructures, ecological machines that process and perform, public spaces that literally ‘work’. 

The reuse of infrastructure, interstitial terrain vague and the reprogramming of brownfield sites have become popular testing grounds for landscape urbanism projects. Strootman’s project for Twente Airport and the development of scenarios—one for a care and cure programme and the other as a civilian airport—shares affinities with the project of Stadtlandschaft Lichterfelde Süd, in Berlin by the Architecture Research Unit (ARU) of Florian Beigel and Philip Christou. The latter’s regeneration of a former military training ground (115 ha) on the southern boundary of Berlin was intended to become a housing area with 3200 dwellings. However, full-fledged development was rather uncertain and the designers worked with the notion of an arrangement of landscape fields and field boundaries similar to a horticultural or an agricultural structure; they laid out the site as a series of ‘landscape carpets’ that become the generators in time for a variety of building patterns. According to Beigel and Christou ‘one could say we design the rug and not necessarily the picnic.’

The two projects result from a sophisticated and selective reading of the history of the site. Large fields are recognized as identifying qualities of the respective sites’ and as welcomed contrasts to the adjacent fragmented landscapes. Both projects investigate conditions of uncertainty and change on former military sites and develop landscapes of infrastructure—or, more precisely, reuse existing infrastructures as catalysts for new development and new economies.
Scene 4: An Art of Instrumentality

For its focus on intentional meaning, design sacrifices the scale and instrumentality of its agency, whereas that which planning gains in scale and efficacy it inversely loses in artful intent. Although this is not always the case, and perhaps too diagrammatic this axiom of landscape architecture’s bilateral crisis is the crux of the problem…. Landscape urbanism warrants serious discussion because it alone seems theoretically prepared and practically capable of collapsing the divide between planning and design.\(^{18}\)

The ever-provocative words of the Australian academic and practitioner Richard Weller could not be better stated. He refers to the idealism of landscape architecture and definition of its being a holistic enterprise, embracing art and science which is weakened by breakdown into landscape planning which concerns infrastructure which usually bears a low semantic load and landscape design (‘of highly wrought objects or specific sites’) that bear a high semantic load. Clearly, there are very few built landscape urbanism projects to date—very few projects that maintain the art of landscape and the agency of urbanism. Weller sees in landscape urbanism a collapse in the divide between planning and design and a merging of the boundaries between architecture and landscape, between fields and objects, and between instrumentality and art.

Perhaps in a place where one would least expect it, in the over-heated market and world’s fastest urbanizing nation, China, there are a number of exemplary landscape urbanism projects that focus on post-industrial sites and specifically on de-cannelizing rivers, preserving/conserving natural habitats and creating enlarged public realms. Kongjian Yu and his office Turenscape are creating an astonishing number of projects (in keeping with the pace of development) that combine ‘ecological infrastructure’ and ‘municipal infrastructure’\(^{19}\) as an evolutionary paradigm—as the next step in a long and rich heritage of Chinese traditions of land and water management methods that are at the same time bold, vibrant, artful and playful. The planned, engineering aspect and the science of ecology are skillfully wed to the sensual and the designed [figure 9a, 9b].

The same could be said of a number of Strootman Landschapsarchitecten projects. Highlighted here is the Westflank Haarlemmermeer, also done in collaboration with Palmbout Urban Landscapes, which had the inevitable engineering challenges of designing 4000ha of housing, new nature (water storage, forest and open landscapes) and infrastructure in a polder 5 meters below sea level. The ‘art of instrumentality’ in such a project is the balance the technical expertise with qualitative spatial environments and magical living environments that embed themselves to the specificity


\(^{18}\) Ibid, p. 71.

\(^{19}\) Ecological infrastructure is that which seeks to secure the integrity and identity of the landscape working with essential natural, biological, and cultural processes.
Landscape urbanism is a field of open speculations. A field of built landscapes and unbuilt landscapes, of urban landscapes and rural landscapes, of realized projects and unrealized projects. The final projects to be discussed are as similar as they are dissimilar. Similar in that they are developed as landscape urbanism strategies in the context of peripheral shrinking economies with impulses to find new economies, in that they are developed around the notion of a ‘park’ to structure the territory, and in that they seek alternative and inventive ways to mix programs and create synergies between energy and environmental policies. They are dissimilar in that the project of Strootman Landschapsarchitecten is for 1600 hectares in Meerstad, northeast of Groningen while the project of Paola Viganò is for 1800 square kilometers in Salento, Italy. The Meerstad park-like setting was to be constructed by one-third ‘nature,’ one-third water and one-third built; when the Dutch economy was still enjoying a boom, 600 houses were envisioned to be developed a year to eventually reach 10,000 houses. Since the economy imploded, the designers are now busy with the clients to literally re-imagine new configurations of land(scape) and to see which land might not need to be constructed at all and how perhaps energy plantations could be developed besides housing and/or recreational programs. They also investigated how housing could of the site over time. New bold geometries of the new lake, forest and open landscape complement the existing beauty of the polder grid and the ‘water machine’ weaves together the rich textures of old and new in carefully designed sections [figure 10a, 10b]

**Scene 5: Terra Fluxus**

Finally, the choreography ends with one of landscape urbanism’s main protagonists: James Corner and his seminal text, *Terra Fluxus*, in which he develops four characteristics of the landscape urbanism model, which are summarized as follows 1) process over time (space-time ecology); 2) the staging of surfaces (vast surfaces of potential); 3) the operational or working method (reconsideration of traditional conceptual, representational and operative techniques); 4) the imaginary (a speculative thickening of the world of possibilities). He concludes by placing the newest –ism in a larger field:

‘… the union of landscape with urbanism promises new relational and systemic workings across territories of vast scale and scope, situating the parts in relation to the whole, but at the same time the separateness of landscape from urbanism acknowledges a level of material physicality, of intimacy and difference, that is always nested deep within the larger matrix or field.’

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be developed at a slower pace and with as flexible as possible development strategies [figure 11] In Salento, the territory has been conceived of as a park — an extensive, articulated and complex habitat. 'The term “park” is used in a contemporary sense and not only alludes to a place of leisure, but is to be understood as a group of environmental situations in the broadest sense, whose essential combination will go towards encouraging the development of some or all the main social activities as affairs [...]. Contrary to current opinion the porous character of the diffused city presents a great opportunity for paving the way for a correct development of biodiversity and expansion of nature, in order to construct landscape and an environment that will interpret the values of contemporary society.' [figure 12a, 12b, 12c, 12d]

Epilogue: Dancing with the Water Wolf & Water Urbanism

Through 5 scenes, the work of Strootman Landschapsarchitecten has been discussed through a landscape/ ecological urbanism approach, whereby landscape development and ecology have together been orchestrated to guide urbanization. The projects are all situated in peri-urban areas within urban-regional contexts and include large pre-investments in the landscape. As projects in themselves they are, of course, embedded in their particular site specificities, but, at the same time, are representative of a large and growing importance of the regional project in the context of issues such of climate change (water storage, flooding resilience), housing and new landscape and infrastructure development. The complex spatial dynamics of peri-urban territories in transformation involve all sorts of processes and Strootman Landschapsarchitecten engineer nature in the best Dutch tradition, but also craft contemporary beauty with a sensitivity to a site’s geological history and layered socio-cultural complexity. They choreograph urban ecologies with flair and finesse. And … perhaps most importantly – they always have the WATER WOLF in mind. They do not try and tame him, they do not try and cage him. They work with him and do their job of choreography — they dance with the dear water wolf!