

# FLOWSCAPES

EXPLORING LANDSCAPE INFRASTRUCTURES



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© Francisco de Vitoria University  
Architecture Department  
Pozuelo Majadahonda km 1,8 Road  
28223 Pozuelo de Alarcón, Madrid (Spain)  
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Published by Francisco de Vitoria University  
ISBN: 978-84-15423-43-0  
Legal Deposit: M-30176-2013

Print: Stock CERO S.A  
Printed in Spain

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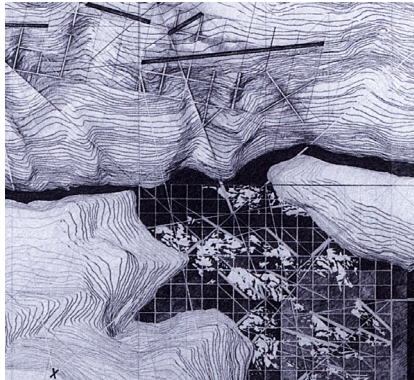
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# **PRINCIPLES OF LANDSCAPE ARCHITECTURE**

**Steffen Nijhuis**

*“To discover and reveal the deeper substrate of the landscape is something the natural sciences alone cannot accomplish.”*

*– Günther Voght*

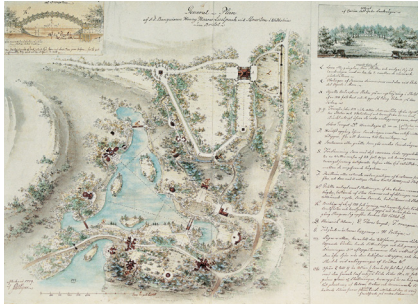
The Department of Urbanism at the Faculty of Architecture and Built Environment, TU Delft considers urbanism as a planning and design oriented activity towards urban and rural landscapes <sup>[1]</sup>. It aims to enhance, restore or create landscapes from a perspective of sustainable development, so as to guide, harmonise and shape changes which are brought about by social, economic and environmental processes. In this respect we can consider urbanism as an object or goal-oriented interdisciplinary approach that breaks down complex problems into ‘compartments’ or ‘themes’. Landscape infrastructures is such a theme were transportation-, green-, and water infrastructure are explored as armatures for urban development. The core of urbanism is formed by the disciplines of urban planning, urban design, and landscape architecture. Giving shape to the relationship between man and natural landscape is a core task for this disciplines and involves civil-, agriculture-, nature-, and environmental based techniques as operative instruments. However, in order to work together effectively it is important to identify and develop the qualities of the involved disciplines individually. What is the particular nature of landscape architecture as an independent discipline? The presumption is that the answer can be found in a repertoire of principles of study and practice typical for landscape architecture. But before elaborating on that some backgrounds will be discussed.

### **Architecte-paysagiste**

The term landscape architecture – architecte-paysagiste – was coined by Jean-Marie Morel in 1803 and marked the eclipse of the ‘new discipline’ <sup>[2]</sup>. Landscape architecture as an English term appeared for the first time in the title of the book ‘On the

Landscape Architecture of the Great Painters of Italy' by Scott in 1828. Subsequently it was used by Frederic Law Olmstead and Calvert Vaux at the design competition for the Central Park in New York in 1858. The profession became official, when in 1863 the title 'landscape architect' was first used by the state-appointed Board of Central Park Commissioners in New York City<sup>[3]</sup>.

The definition of landscape architecture according to the International Federation of Landscape Architecture (IFLA) is: "A profession and academic discipline that employs principles of art and the physical and social sciences to the processes of environmental planning, design and conservation, which serve to ensure the long-lasting improvement, sustainability and harmony of natural and cultural systems or landscape parts thereof, as well as the design of outdoor spaces with consideration of their aesthetic, functional and ecological aspects"<sup>[4]</sup>. Within this broad definition of landscape architecture there are three areas of activity: landscape planning, landscape design and landscape management<sup>[5]</sup>. Landscape planning is concerned with the long-term development and preservation of natural and cultural landscapes by implementation of strategic goal-oriented concepts and allocation of types of land use. Landscape design deals with form and meaning and is concerned with the organisation of a physical, functional and aesthetic arrangement of a variety of structural elements to achieve desired social, cultural and ecological outcomes. Landscape management is concerned with the conservation and enhancement of the long-term beneficial use of landscape resources as well as its heterogeneity, character, and beauty



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[6]. These activities overlap and address different spatial levels of scale with different degrees of intervention. They require a multi-layered understanding of landscape in general: its spatial structure, history, (relational) context, as well as the ecological, economic and social processes involved.

#### **Four principles of study and practice**

The nature of landscape architecture as a discipline, and particularly landscape design as an important activity, can be characterised by the interplay of four principles of study and practice, understanding landscape as (I) three-dimensional construction, (II) history, (III) scale-continuum and (IV) process [7].

(I) Landscape as three-dimensional construction: this principle addresses landscape as a three-dimensional construction. Here the focus is on research and design of the landscape 'from the inside out', as it could be experienced by an observer moving through space. It elaborates on the visual manifestation of open spaces, surfaces, screens and volumes and their relationships in terms of structural organisation (e.g., balance, tension, rhythm, proportion, scale) and ordering principles (e.g., axis, symmetry, hierarchy, datum, transformation)<sup>[8]</sup>. The basic premise is that the shape of space, plasticity (form of space-determining elements) and appearance (e.g., colour, texture, lighting) of spatial elements in the landscape determine the relation between design and perception. This principle addresses the form and functioning of three-dimensional landscape space, which creates a spatial dynamic. This might be, for example, the framing of a landscape or urban panorama, or the construction of a spatial series along

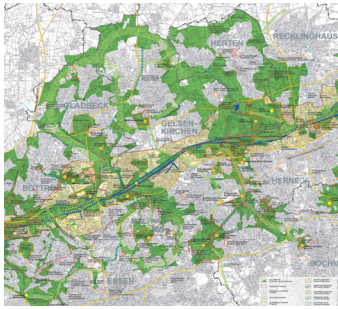


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a route, making a pictorial landscape composition. Examples from landscape architecture designing landscape as a three-dimensional construction include: Stourhead landscape garden, Wiltshire (UK) (figure 1), Vaux-le-Vicomte, Melun (France) and Japanese pre-modern gardens.

(II) Landscape as history: the landscape is 'read' as a biography, as a palimpsest that evidences all of the activities that contributed to the shaping of that landscape. The Genius Loci expresses the character of the site, not only geographical but also the historical, social, and aesthetic character, and is at the heart of this principle. The landscape is regarded as a layered entity where traces that time has laid over can reinforce or contradict each other. Knowledge of these layers is one of the starting points for new transformations of the landscape involved, or adding a new design layer. This principle involves the evolution of landscape over time and elaborates on operations of 'erasing' and 'writing' history<sup>[9]</sup>. Operations of erasing history include: complete or partial eradication, etching, excision, entropy and excavation. Operations of writing history include: parceling, infill, addition, absorption, enveloping, wrapping, overlay, parasitize and morphing. Examples from landscape architecture carefully intervening in the landscape as a historical culture include: Bunker 599, Diefdijk (Netherlands) (figure 2), the Quarries at Crazannes (France) and Oranjewoud Estate (the Netherlands).

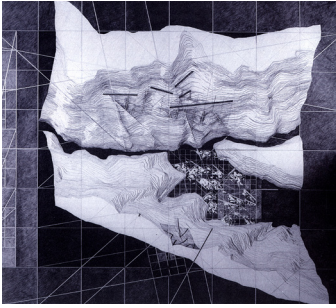
(III) Landscape as scale-continuum: this principle regards landscape to be a relational structure connecting scales and spatial, ecological, functional and social entities. Landscape is viewed as a scale-continuum. The design involves establishing



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relationships via attachment, connection, embedment of a specific site or location into the broader context at different scale levels. A landscape intervention will have impacts on different levels of scale, hitting interests of stakeholders operating on that level. Although scale is a matter of grain and radius, it implies that a particular site is always part of the larger context <sup>[10]</sup>. Once the frame and granule of the site (object of study) is determined, the rest is regarded 'context'. The reach of scale is also important, because conclusions on a specific level of scale could be opposite to conclusions drawn on another level of scale (called: scale-paradox). This principle addresses working through the scales as an important basic premise, for example for systematic elaboration of planning strategies (e.g., regional planning and design) and design interventions (e.g., project-based realization). Examples from landscape architecture connecting scales and different layers of interest are: Metropolitan Park Boston (USA) and Emscher Landscape Park (Germany) (figure 3).

(IV) Landscape as process: the landscape is regarded as a holistic and dynamic system of systems<sup>[11]</sup>. In that respect landscape is an expression of the dynamic interaction between ecological, social and economic processes. The landscape is considered as a process rather than as a result. Natural and social processes constantly change the landscape, making the dynamics of the transformation a key issue in research and design. The design is like an open strategy, aimed at guiding developments, no blueprint design. Projects play a role as an open-ended strategy, as in staging or setting up future conditions (e.g., manipulating processes of erosion and sedimentation by water or the development of project-based master plans).



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Operations focus on the interaction between landscape processes and typo-morphological aspects and facilitate aesthetic, functional, social and ecological relationships between natural and human systems. This principle of study and practice elaborates on models for understanding the landscape as system (e.g. layers-approach) and concepts like sustainable urban metabolism and urban ecology. Examples from landscape architecture using natural and social processes to shape landscape include: Jardin Élémentaires (Italy/France: study project) (figure 4), Nature development De Gelderse Poort, Nijmegen (the Netherlands) and London Guerrilla Gardens (UK).

## Conclusion

The knowledge reflected by the principles of study and practice form the core of landscape architecture and expresses the integrative nature of the discipline. It embodies a way of thinking typical for landscape architecture and is visible in landscape architecture theories, planning and design processes and products. The understanding and development of this body of knowledge is an important basis for interdisciplinary, context-driven and problem focussed research. Boldly stated it is like this: “if you don’t know what the core of your own discipline is, you don’t know what you can contribute to other disciplines”. By developing the typical principles of study and practice of landscape architecture, it is possible to contribute to other fields in terms of theories, methods and techniques, as well as their application via concepts, strategies and interventions. It becomes the basis for exploring the boundaries of the discipline, exchange of knowledge and the search for collaborations and partnerships to engage in sociocultural, ecological and technological issues

from the perspective of spatial planning and design. Educational and research institutions have an important role to play. They must take the lead in inspiring students, building up and transferring knowledge, while stimulating students to develop a critical academic attitude and explore the scope and remit of their discipline in an international context.

### **Figures**

Fig 1: Stourhead landscape garden (Wiltshire, UK) is a landscape designed from the observers point of view. Views and sightlines are combined with formal, transitional and progressive elements. Study map of Stourhead in 1779 by Frederik Magnus Piper showing important sight lines at eye-level (image courtesy: Royal Academy of Fine Arts, Stockholm)

Fig 2: Bunker 599 (Diefdijk, the Netherlands) is an example of a careful design intervention in an important historical defence structure of the Netherlands, the New Dutch Water Line. Project by Rietveld Landscape with Atelier de Lyon, 2010 (source: Rietveld Landscape)

Fig 3: Emscher Landscape Park (Germany) is based on a regional strategy elaborated by project-based design interventions. Section of the Masterplan 2010 indicating realised and future projects (source: Regionalverband Ruhr, 2010)

Fig 4: Jardin Élémentaires is a theoretical experiment where natural processes of erosion and sedimentation by water are manipulated by dams, creating changing patterns of streams and sedimentary islands in a valley landscape. Project by Michel Desvigne, 1988 (image courtesy: Michel Desvigne)

## Notes

[1] Here landscape is understood as “an area, as perceived by people, which character is the result of the action and interaction of natural and/or human factors” (Council of Europe (2000) European Landscape Convention. s.n., Florence, p 3). Urban and rural landscape are types of landscape.

[2] J. Disponzio (2002) ‘Jean-Marie Morel and the Invention of Landscape Architecture’, in: J.D. Hunt & M. Conan (eds.) Tradition and Innovation in French Garden Art: Chapters of a New History. Philadelphia: University of Pennsylvania Press, pp 135- 59; J. Disponzio (2007) ‘History of the Profession’, in: L.J. Hopper (ed.) Landscape Architectural Graphic Standards. Hoboken, NJ: Wiley & Sons, pp 5-9

[3] F.R. Steiner (2001) ‘Landscape architecture’, in: N.J. Smelser & P.B. Baltes (eds.) International Encyclopedia of the Social & Behavioral Sciences. Oxford: Elsevier, pp 8270-8275; K.J. Evert, et al. (eds.) (2010) Encyclopedic Dictionary of Landscape and Urban Planning. London: Springer-Verlag, p 509

[4] Evert et al., 2010 (note 3), 509

[5] R. Stiles (1994) ‘In search of a definition’, Landscape Design No. 234, pp 44-48; R. Stiles (1994) ‘Landscape theory: a missing link between landscape planning and landscape design?’, Landscape and Urban Planning Vol. 30, pp. 139-149; I. Thompson (2008) Ecology, Community and Delight. Sources of values in landscape architecture. London & New York: Taylor & Francis

[6] M. Vroom (2006) Lexicon of garden and landscape architecture. Basel, Boston, Berlin: Birkhäuser

[7] These principles are adapted from: M. Prominski (2004) *Landschaft entwerfen: Einführung in die Theorie aktueller Landschaftsarchitektur*. Reimer Verlag; S. Marot (1995) 'The landscape as alternative', in: K. Vandermarliere (ed.) *Het Landschap / The Landscape. Four International Landscape Designers*. Antwerp, De Singel, pp 9-36; Also based on S. Nijhuis (2006) 'Westvaart als landschapsarchitectonische ontwerpopgave', in: *Westvaart in de polder. 4 ontwerpen voor een verdwenen 7-molengang*. Leiden: Uitgeverij Groen, pp 35-37.

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