BEYOND ISM: THE Landscape OF LANDSCAPE URBANISM

CONFERENCE PROCEEDINGS
CREDITS

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INTRODUCTION

The aim of this conference was to reposition the relationships between city and landscape, as reflected in the practice and academia of various disciplines. To this end, we sought to revisit the academic discourse concerning Landscape Urbanism, and to engage with subsequent ‘isms’ as well as looking beyond, in order to enrich and broaden the urban discourse.

The international cross-disciplinary conference, organized by the Swedish University of Agricultural Sciences (SLU), aimed to contribute new and alternative formulations of the relationship between landscape and urbanism by reassessing Landscape Urbanism. Hosted by a landscape architectural institution the conference discussed Landscape Urbanism from a landscape perspective, re-engaging landscape as a “lens” to understand and develop its theory and practice. We invited participants to dig deeper into the concerns motivating the cascade of ‘isms’ that have proliferated over the last decade: landscape urbanism, ecological urbanism, infrastructural urbanism, process urbanism, biourbanism, etc. To advance a theoretically sound and practically relevant discourse – rather than launch yet another superficially modified urbanism – we had asked participants to take stock of Landscape Urbanism and its closely related theories to identify their strengths, weaknesses and potentials.

The conference brought together advocates and critics of Landscape Urbanism, as well as scholars whose research complements its ongoing discourse. Participants came from around the world; academics and reflective practitioners from disciplines such as landscape architecture, urban and landscape planning and design, architecture, cultural geography, as well as subject areas in the arts and humanities.

The multiplicity of perspectives and backgrounds, both geographical and disciplinary, is mirrored in the themes and questions taken up in the contributions to these conference proceedings. 17 authors followed our invitation to publish their ideas in the proceedings. The contributions have not been peer-reviewed and they have been edited only minimally. The statements express thus solely the authors’ opinions. Together, the papers reflect authentically the diversity of contributions and the vibrant range of ideas and theories but they also make an excellent read individually. We thank the authors for their papers, and all conference participants for contributing to such an inspiring and intellectually engaging conference.

Caroline Dahl, Lisa Diedrich, Gunilla Lindholm, Vera Vicenzotti & Nina Vogel
LANDSCAPE URBANISM IN BELGIUM: SOCIOBIOLOGY AND THE EXCHANGE OF METHODS AND METAPHORS

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KEYWORDS: Landscape Urbanism, Ecology, Metaphors, Sociobiology, Belgium

INTRODUCTION
‘Isms’ as Landscape Urbanism and Ecological Urbanism claim the notion of landscape as a way of integrating different disciplines into their practices, thus introducing new methods and concepts that are stemming from disciplines other than urbanism, namely sociology, biology, ecology and engineering. This ‘disciplinary promiscuity’ – as Charles Waldheim describes it - remains a source of confusion within the disciplines of landscape architecture and urbanism. In this paper we attempt to question this disciplinary interaction, and define the (productive) openings and frictions it entails. Concepts from other disciplines are used to insert new methods and metaphors into the field of design, which is both epistemologically and methodologically not unproblematic. Also, the current disciplinary alliances are often approached from an outspoken, ‘problem solving’ approach, but the question remains – which socio-political agenda and ideological choices underpin the concepts developed in these disciplines? To investigate these questions more closely, we focus on biology, planning and landscape theory and practices in Belgium at the turn of the 20th century, along with the emerging concept of socio-biology within these fields. The concept was first introduced in Belgian urban planning theory by landscape architect/urban planner Louis Van der Swaelmen (1883-1929) around the First World War. However, biologist Jean Massart (1865-1925) and sociologist/politician Emile Vandervelde (1866-1938) had introduced a socio-biological theory in the Belgian scientific and socio-political context almost two decades before. In the paper we will unravel the percolation of methods and metaphors that are derived from biological sciences into socio-political discourses and the fields of urbanism and landscape design. As we shall see, social sciences, but also theory of urbanism has turned to biology to render their study more ‘scientific’, and thus more credible. Studying how certain terms ‘migrate’ between disciplines can teach us more about the political and epistemological agendas behind actors and disciplines.

MASSART AND VANDERVELDE: TOWARDS A SOCIO-BIOLOGICAL VISION
At the end of the nineteenth century, Massart and Vandervelde co-authored two books, *Parasitisme organique et parasitisme social* (1893) and *L’Evolution regressive en biologie et en sociologie* (1897), in which they compared biological and social phenomena. In *Parasitisme* Massart explained the aspects of parasitism inside organisms, while Vandervelde wrote some chapters about the same phenomena in a social context. The chapters were divided between both fields, yet the two disciplines never really integrated their methods. It was mainly Vandervelde who discussed the (small) differences between organic and social parasitism, so as to put the emphasis on the important
similarities. One critic found that Massart and Vandervelde pushed the analogy ‘farther than is desirable’. The Scottish biologist, evolutionist and urbanist Patrick Geddes wrote a foreword for the English translation of the text, stating that the critical questions readers may pose on these comparisons are ‘a matter of detail’, and they should focus on the more important message of the text that ‘thou shalt not exploit thy neighbour’. In the introduction to L’Evolution, the two authors themselves questioned the combination of their disciplines: ‘To what extent are these assimilations [between biology and sociology] legitimate? Do they have to be understood only in a metaphorical sense?’. Vandervelde was anchored in the political left – he would become the foreman of the socialist party in Belgium - and he interpreted Darwinism in such a way as to scientifically prove that capitalism was a system that was destined to disappear. It is interesting to realize that it was the sociologist who used biological concepts, and not the other way around. Vandervelde clearly aimed at providing a scientific backing for his plea against capitalism. However, Vandervelde was not a revolutionary, but a reformist. Evolution was a gradual process, without revolutionary breaks, and using this theoretical, biological framework allowed Vandervelde to reject the schemes of Marx, paving the way for an ‘organicist’ socialism. However, Marx also used the biological metaphor in the form of ‘metabolism’ to construct his theories. Erik Swyngedouw claims that Marx, ‘mobilized metabolism in an ontological manner in which human beings, like society, were an integral, yet particular and distinct, part of nature’. Indeed, theoretical systems of sociologists were influenced by the natural sciences. Following Padovan’s work on social metabolism, this was partly due to the growing accuracy and scientific objectivity of these sciences, and the belief that the nature of society depended on relations with nature that surrounded that society.

Vandervelde’s later work continued this line of thinking about man and his environment and city/countryside relationships. In his book L’Exode rural et le retour aux champs he pleaded for a return to the fields and the de-urbanization of the urban proletariat. As an answer to the rise of capitalism in Belgium, he proposed to re-organise the territory in all its forms, city and countryside. He did not completely reject industrialisation and the city, nor did he fully embrace the rural way of living. Instead, he proposed a more hybrid scheme, integrating city and countryside. For example, he believed that with the construction of a fine-grained railway network, workers would be able to live in the countryside but work in the cities. In the case of Massart sociobiological thinking fitted in his research on the relationship between organisms (human and non-human)
and his study in the field of geobotany. In his later work, for example Les Aspects de la Vegetation en Belgique, Massart used a series of didactic illustrations depicting the different geobotanical regions of Belgium (Figure 1). Here, he also paid attention to cultural landscapes, showing an interest in a holistic approach of biology and geography.  

**LE NOUVEAU JARDIN PITTORESQUE AND PRÉLIMINAIRES D’ART CIVIQUE: INTEGRATING BIOLOGY AND LANDSCAPE DESIGN?**

In 1913, Massart became an active member of the Nouveau Jardin Pittoresque, an association that aimed at popularizing knowledge on gardens and gardening. Both Massart and Louis Van der Swaelmen, who was also an active member, considered gardens and nature as possible agents of social reform. Le Nouveau Jardin Pittoresque promoted the wild garden defined as a more ‘natural’ garden, in opposition to the ‘artificial’ English landscape garden (Figure 2). Van der Swaelmen saw this garden as a pedagogical means to familiarize the public at large with the benefactions of nature. He also considered the garden to be a defining link between architecture and the landscape, thus making the step to urbanism in his professional career. In 1914, Van der Swaelmen left the Nouveau Jardin Pittoresque, presumably because the organisation had moved away from their initial strive towards social emancipation. During the First World War, Van der Swaelmen wrote Préliminaires d’Art Civique, a book that was both a guide for the reconstruction of the territory and a handbook for urban planning. Inspired by British concepts of garden cities, town
planning and survey, Van der Swaelmen proposed a twofold solution to the crisis of the modern city: First, the development of a system of urban planning based on an objective and scientific survey and second, the realization of 'superior harmony between the things of nature and the creations of man'.

Van der Swaelmen based his theory on specific cities, such as the city of Amsterdam. In the structure of this city he read the neighbourhoods as the cells of an organism, the infrastructure the as nerves and the parks as the lungs (Figure 3). Mentioning Darwin and Lamarck, he was clearly influenced by evolution theory. His biographer Herman Stynen stated that the work of Félix Le Dantec, a French philosopher and biologist who adhered to evolution theory was the main influence on a scientific level. In his search for an evolutionary explanation of the growth of cities, Van der Swaelmen's work is also reminiscent of the work of the Scottish biologist/urbanist Patrick Geddes. Stynen points out that it was also Van der Swaelmen's own background, and the reading of Unwin's *Town planning in practice* (1909) that were of major importance for his urbanistic thinking. However, Van der Swaelmen also referred to Jean Massart. *Préliminaires* proposed to anchor spatial development in what Van der Swaelmen called the 'physiognomy' of the territory, determined by physical circumstances, in interaction with the need of man. This system was based on the classification that Massart made of the Belgian territory in geobotanical districts. *Préliminaires* was littered with biological metaphors. For example, Van der Swaelmen wrote that the first biological element of the urban phenomenon is *habitation*, the cell that formed the urban
tissue. He explained that the *cité embryonnaire*, the embryonic city, consisting only of *habitation*, already possessed the urban features that develop when urban agglomerations grow more extensively, thus embracing the biological, organicist view that embryos already hold the promise of a grown-up. Donna Haraway stated that ‘organicists stress the teleological behaviour of organisms’ and there is ‘at least the appearance of goal-directedness and design in biological phenomena’. Indeed, Van der Swaemen believed that the city moved towards *un état de perfection*, an ideal that was both good and beautiful. This view was at odds with that of other evolutionists, like Massart, who didn’t believe in any form of finalism. In an article of 1921 Van der Swaemen wrote that urbanism should rest on two “poles”. First, *la socio-biologie des cités*, which would focus mainly on the housing issue. Second, a social culture which visualises itself in the *paysage urbain*, the urban landscape. In another text, he went even further, writing that the *paysage urbain* was an expression of the organic synthesis of functional elements. André De Ridder, a contemporary of Van der Swaemen, considered Van der Swaemen to be the first to apply the method of the biological sciences to urbanism. After the use of the *méthode historico-narrative* and the *méthode esthétique*, he wrote, Van der Swaemen adapted the *méthode scientifique et biologique* to the urban sciences.

**TESTING GROUND: LE LOGIS-FLORÉAL**

From the 1920s onwards, Van der Swaemen became active as a designer of a number of garden cities. The programme d’urbanisation for the Brussels region was a clear expression of his earlier visions on urbanization (Figure 4). He proposed to expand the city by implementing a ring of garden cities around the Brussels core, by which the city would grow in an ‘organic’ way. The garden cities of the 1920s came into being in a sociopolitical context that picked the fruits of the rising power of Emile Vandervelde and his colleagues. The umbrella organization of social (rental) housing companies was lead by socialist senator Émile Vinck, as an attempt to evacuate workers’ housing from the sphere of capitalist speculation, and in this context urban planning...
and landscape design served ‘the creation of the material environment for a new social order’. The garden city in which the spatial concepts of Van der Swaelmen’s thinking are best expressed is Le Logis-Floréal (Figure 5,6). This design is not a garden city following the model of Ebenezer Howard, he wrote, rather ‘a methodical urban expansion, an organic urbanization, under the form of [adding] garden neighborhoods to the city’. The plan for the neighborhoods of Le Logis-Floréal was strikingly heterogeneous, and this was, according to Van der Swaelmen, due to the topography: ‘The road network was, to remain organic, dictated by the conditions of the terrain,’ which lead to a ‘spontaneous, unsearched and picturesque layout’. Van der Swaelmen believed that the juxtapositions of different ‘garden quarters’ around the capital would culminate into a real ‘garden suburb’, where the different nuclei would be connected by planted avenues and where free space would be transformed into parks, creating a real ‘park-system’.

CONCLUSION: METHOD AND METAPHOR

In this paper, we made a first attempt at tracing a historical lineage of terms and concepts through a close reading of the term sociobiology. We tried to demonstrate that socio-biological thinking was used by actors in the fields of landscape design, sociology, biology and urban planning at the end of the nineteenth and beginning of the twentieth century. The voices discussed in this paper used the disciplinary exchange between biology, sociology and design to back their ideologically loaded discourses and researches, so as to create a ‘scientific’ reading of their visions and ideas.

However, the question remains whether this ‘disciplinary promiscuity’, that also exists today, surpassed the use of terms and concepts as a metaphor, and shifts to an actual transfer of methods. In the cases under study the level of the metaphor was not surpassed, however the result was an exchange of terms and concepts that allowed Massart, Vandervelde en Van der Swaelmen to think of the landscape in terms of hybrids of nature and culture. Massart conceived cultural/natural landscapes in his geobotanical research, as well as in his plea for protection of nature in Belgium, Vandervelde envisioned an urban/rural territory and Van der Swaelmen constructed a socio-biological urban theory, in which cities could be studied as scientifically known entities, or organisms. Lastly, Van der Swaelmen designed garden cities on the premise of a natural underground and an organic building pattern, in accordance with the natural growth of the city. This dialectical, (hybrid) relationship between man and nature is perhaps best exemplified by Van der Swaelmen’s plea in Préliminaires d’Art Civique for a planning that is based on both scientific survey and the ‘harmony between man and nature’. This plea situates planning and design as a discipline that is on the one hand determined by nature, but also expresses human control over nature. So in fact, the socio-biological metaphor was used to mentally and conceptually surpass the duality between ‘things nature’ and ‘things social’, and look at socio-natural processes that transform both city and countryside. We argue that, even if metaphors are not used “correctly”, they have a strong agency. Benedikte Zitouni wrote on the issue of metaphors in the case of urbanism that they ‘are not models, not analogies, not simulations, not comparisons. They are vague, unstable and literary sometimes. […] In other words, it doesn’t matter whether the metaphor is true or not – of course we all know that the city is not an organism – but to posit that it is might help us to investigate one specific subject with a little more imagination.’ However, the issue of the exchange of metaphors and methods remains a complex phenomenon that requires further study. As terms and concepts act as agents that transfer ideas and meaning from one field to another, it is important to investigate when they are used as a method or as a metaphor, and what these notions entail. As André De Ridder’s wrote, Van der Swaelmen adapted the biological method into his work, highlighting that the biological methods were not merely copied into the design discipline. Following this argument, we should further investigate what this adaption then signifies, and what the meaning behind the use of biological concepts in design really implies.

ENDNOTES


ECOLOGICAL APPROACH IN REGENERATIVE DESIGN: LANDSCAPE URBANISM AS AN OPPORTUNITY TO RECOVER INDUSTRIAL ABANDONED SITES IN LIÈGE

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KEYWORDS: brownfields, regenerative design, ecological approach, post-industrial landscape, evolutionary vision.

INTRODUCTION
Rethinking industrial abandoned sites means to look at those productive landscapes, who forged the cultural and physical identity of the territory, and to consider them in a new perspective. The urgent issue, rising from the de-industrialisation process, consists in elaborating strategies to activate new life cycles in brownfield sites, in order to revive places and to regain the lost balance between environmental resources and human actions. The paper retraces the emergence of ecology as the basic value in regenerative strategies, where the design process involves ecological dynamics, in order to activate both environmental remediation and urban re-appropriation. This approach invests the thematic researches of the Laboratoire Ville Territoire Paysage, (Faculty of Architecture, University of Liège), where the act of reading the Meuse valley, within its morphological and cultural dimensions and the study of their interactions and changes in time, are intended to orientate the design process to an evolutionary vision. The case study of Esperance Longdoz industrial site, as the object of my graduate thesis project, was an opportunity to discover an interdisciplinary approach in architecture, broadening the concept of design process, including new parameters as: the multi-scalar dimension, the overtime changes, the different layers of landscape. But it also represents the starting point for a wider reflection in the Phd research focusing on the study of the effects of using vegetal structures to recover brownfields of the Meuse valley.

LANDSCAPE URBANISM: FROM A FUNCTIONAL LOGIC TO AN ECOLOGIC APPROACH
Transformations in Liège landscape express the vision of ‘territory as an object of construction, as a sort of artefact’, where natural elements have been manipulated in order to respond to social needs. From the modification of watercourses to the extraction of coal, the territory has been overwritten, re-shaped following a functional and economic logic all along the XIX century. The industrial development in the Meuse valley has taken the form of a rhizome, where mines and metallurgic industries have grown on strategic areas, making visible the presence of local resources through the installation of exploiting “machines”. Transport infrastructures, connecting one production pole to another, have woven a territorial tangle, crossing and fragmenting urban areas, thickening the distance between towns and the river.

The deindustrialisation process has left huge inaccessible areas inside the urban fabric, opening the debate on territories reuse, where the labour model who generated them, ceases to exist. The
Meuse valley, as a territorial sample, reproduces phenomena that have affected many European and American regions, and have promoted innovative reflections and realisations concerning the regeneration of industrial abandoned sites. From these experimental projects and theories, Landscape Urbanism emerged as a new discipline dealing with urban reclamation, which might be measured in three ways: first, in terms of the retrieval of memory and the cultural enrichment of place and time; second, in terms of social program and utility; and third, in terms of ecological diversification and succession.

At the beginning of 2000’s, by extending the reflection on post-industrial sites to abandoned urban areas in general, Landscape Urbanism became a new planning method, based on the ecological approach. In fact, variability and incompleteness, as the main features of landscape, might be considered as ‘an antidote to the implicit finitude of zoning’, who has proved unsuitable for dealing with the contemporary city, who is ‘variable, characterized by continuous micro changes’. Thence, the success of this new hybrid discipline lays on its productive attitude towards ‘indeterminacy, open-endedness, intermixing and cross-disciplinarity’ opposing to the outdated concept of ‘static composition’ of town planning.

**ECOLOGY: FROM A SCIENTIFIC DISCIPLINE TO A LANDSCAPE DESIGN VALUE**

From the second half of the last century, ecology has been recognized as one of the most important value in landscape design, together with aesthetics and social involvement and its interest has extended from the biological sciences field to the urban design approach. The term Oecologie dates back to the German biologist Ernst Heinrich Haeckel (1834-1919), who defined it as ‘the study of the natural environment including the relations of organisms to one another and to their surroundings’. Later, the geographer Carl Troll (1899-1975), by observing the interactions between ecosystems and environment, introduced the concept of landscape ecology, defining it as ‘the study of the main complex causal relationships between the life communities and their environment in a given section of a Landscape’. Landscape ecology still concerns the study of species, their associations and their succession in specific areas, called landscapes, including both natural and human actions, but only in 1969, thanks to Ian McHarg’s work, has ecology involved as a main parameter, in the urban planning process. By the criticism of the anthropocentric view and of the model of growth based on economy, McHarg highlights that man, as part of the biosphere’s ecological system, must take into account natural elements and dynamics as components of his habitat, and he must include them as basic values in territorial transformations. Therefore, according to the writings of the biologist Eugene P. Odum, it appears clear that ecology ‘has emerged from biology as an essentially new, integrative discipline that links physical and biological processes and forms a bridge between the natural sciences and the social sciences’. Even if today’s attitude towards environment has changed, natural elements are often just “insertions” in design process, not considered as life-cycle activators, but still subjected to profitability of land value. The study case of Seraing attempts to actualize Mc Harg’s theory in Liège’s post-industrial landscape. The vegetal structures are considered the leading factors in the recovery of the site for their capacity to restart natural processes.

**ENVIRONMENTAL ETHICS: A PRECONDITION FOR THE ECOLOGICAL APPROACH**

Since the energy crisis in 1973 until the recent climatic events, linked to the global warming, the effects of exploitation of natural resources have generated an increasing awareness about the dependence of human life on environment and the need to reduce the ecological footprint. The landscape architect Alan Ruff underlines that the new sensibility toward the environment derives from a consciousness about technology’s failings, and affirms the necessity to build the future upon ‘the capacity to work within the natural limits of environment’, respecting natural factors as air, water, soil, climate, flora and fauna. Therefore he proposes seven guidelines to design ‘ecologically inspired landscapes’, where the visible aesthetic quality of designed landscape reflects ‘positive environmental change’.
The concept of “sustainability”, introduced by the Bruntland report in 1987, embodies the will to re-establish a balance between quality of life and the respect for nature, as the responsibility to guarantee the survival of future generations on the Earth.\textsuperscript{17} Thence, in contemporary landscape design, ecology is interpreted as a key approach, concerning mostly regenerative design. In fact landscape design deals with urban development strategies, interventions on urban fringes, reclamation of waste lands: in all cases the landscape design process aims to restore the interrupted balance between natural resources and anthropic actions. According to J.T Lyle, this innovative concept considers design as the cultural instrument that gives form to physical phenomena, where ‘deep form’ shows the invisible natural processes and must be preferred to ‘shallow form’, as a merely contemplation artefact.\textsuperscript{18} As a revealing device, the regenerative design accompanies not only landscape transformations, but also the relationship between communities and the spirit of the places. Thence, recovery strategies are oriented to build a new identity, especially in rejected areas, where society can re-discover and re-appropriate abandoned places.

**SERAING: A CASE STUDY FOR THE ECOLOGICAL APPROACH IN A RECOVERY STRATEGY**

In this perspective, the Esperance-Longdoz industrial site represents a case study within the constellation of “derelict lands” left by the phasing out of the steel production chain, along the Meuse valley. The specific project describes how the re-interpretation of natural and artificial traces, the observation of ecological undergoing processes and an attentive perception of the places become the basic actions to recover the site. The hypothesis is that the identification of available areas and the study of their inner characters allow to inscribe them in a new system, where the landscape approach is proposed as a reactivation device. The site, extending for 30 hectares on both sides of the river Meuse, includes: the blast furnace, warehouses, slag depot areas, altitude gaps, lead tracks for the material transportation, spontaneous green belts and also a boardwalk, as gas pipes support, called *passerelle de l’Espérance*. Complexity, as the main character of the site, appears as an obstacle to the understanding of its morphology, but it also constitutes its inner “deep form”, releasing a mysterious fascination. After a *de-constructive analysis*, to classify the existing artificial and natural structures, the site is *re-composed* using the diversified elements as complementary instruments to recover the site.\textsuperscript{17}

As mentioned, “Working with nature”, in landscape urbanism, means to activate processes involving plants, animals and people, with the aim of improving the quality of life in urban environment. Therefore ecology is strictly linked to aesthetical and social aspects: landscape design must relate spatial values, by reinterpreting and enhancing the characters of the places, with social values, by introducing activities to strengthen social interactions. Thence the design process is structured in three phases, where different actions are oriented to the progressive re-appropriation of the site. The first step is to **open the «neglected areas»** by transforming the existing boardwalk in a new footbridge. The physical effect of crossing a border is also intended in a psychological and cultural dimension. The act of “discover” implies to recognize “artefact landscapes” as identities but also to seize and understand spontaneous processes, for example to understand that the acid soil, product of the industrial activities, is the ideal condition for the development of a specific habitat, a precious biodiversity site, to observe and preserve. The ecological attractiveness of these typical urban forests, grown on coal slag heaps, lead citizens to reconsider the site, which is perceived as a new green area inside the town, but also as an identity element, linked to the social history of the town.

Then, in as second phase, different methods to **interact with soils** are proposed: testing phytoremediation, tracing new paths, modelling the ground. According to morphological characters of the site, this intermediate stage, involves ecological dynamics to prepare the areas for new uses. The project focuses on this phase in order to apply an ecological approach on a remediation strategy. The realisation of wetlands, as like as phytoextraction fields, have a double effect. As a matter of fact, the interaction between water, soil and specific plants establishes a cleaning process, but also it creates specific habitats. The idea is to choose an area inside the industrial site and realize, first, an irrigation system to collect rain water and testing it with phytoremediation (*Machrophyte*).
Then, to cultivate on the soil other plants with strong absorbing capacity (Brassicacee, Linum usitatissimum, Miscanthus, Helianthus annuus). Cultivating is intended as a «taking care» action and it concerns also working with time. The reactions of the soil to this kind of treatment implies changes in landscape. So we don't know exactly what will be the soil answer, we can only imagine scenarios, as like mosaic (fully cultivated), sponge (partially cultivated), leopard spots (scarce cultivated). Testing phytoremediation and other experimental reclaim methods could be an interesting research field, because the region contains many industrial abandoned sites for the development of in situ researches on this specific subject. The choice of less invasive methods reflects the intention to work with materials and elements of the site, giving them new meanings and therefore to preserve what nature has built by itself, to respect and to reveal to people the slow rhythm of changing.

Finally, the introduction of new uses is intended to employ rural elements and dynamics in order to re-constitute a new productive landscape, balancing environmental quality, natural aesthetics and social engagement. The reuse of abandoned areas concerns also the re-writing of parts of towns, linked to urban functions. The landscape design approach permits to consider vegetal materials and their temporal dynamics as basis in local development strategies, where ecology becomes a new urban form of identity. The proposal is to reuse the area as a public space, where design process let citizens re-appropriate of places through a physical and mental attitude. Vegetal structures are used as compositional elements of the places and as the expressions of landscape transformation. The experiences of a ploughed ground, of the growing of crops, of the harvesting, are re-introduced through the landscape design, where the functional and the aesthetic values are combined in the regeneration process. Rural practices, evoking seasonality, are re-interpreted as cultural acts, tending to reconcile man with his territory and with the rhythm of nature.

**CONCLUSIONS: EVOLVING CULTURE INVOLVING NATURE**

The research challenge is to introduce green structures in abandoned areas, in order to develop a new dynamics, where design process works as an experimental device, according to an eco-logic perspective. In addition to environmental restoration, the discovery and the perception of nature in brownfields, permit to reconstitute a consciousness in citizens’ memory and to create a new imaginary, building the bases for a gradual re-appropriation of those forgotten territories. Following the described theories and case study, it appears that ecology offers a real opportunity to review instruments and methods in regeneration strategies. But ecology is not a panacea itself: the risks in ecosystem service approach are several, if design imposes nature as a disconnected layer from the site. First, especially in public spaces design, there is the risk of confusing the primary values of the action of planting trees and greenery: some aesthetical choices could not represent the ecological efficiency. This happens very often when an immediate effect is required, where vegetation’s use is equated to a decorative device, instead of a new balance generator one. Similarly, choices based on low maintenance perspective are not always synonymous of ecology but respond to economic saving or reflect a lacking comprehension of the qualities of the site. Furthermore, in Urban Planning, prescriptions about greenery and trees plantation follow some quantitative parameters instead of qualitative ones, ignoring perception as a fundamental factor in landscape design. In fact the sensory dimension expresses the relationship between man and the place and it can strengthen or weaken the efficacy of a project. The contribution of landscape design to Urbanism is based on a multidisciplinary approach which tends to detect and enhance those hidden and overwritten features characterising the genius loci of the places. Thence, ecology represents a remedy in regenerative strategies, as it enriches the design approach by unveiling site specific factors, and by integrating in landscape urbanism a deep knowledge of the processes and their effects on environment and on society.
ENDNOTES
7. Ibid.
14. Ibid.
17. The term “deconstructive analysis” doesn’t refer to a specific philosophical concept, but rather to a process, used in several disciplines, to identify the singular components of a more complex structure. This method is the basic instrument to read and understand the different layers of territory in landscape approach.

OTHER REFERENCES

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INTRODUCTION
On December 24, 1968, in what would become the most watched television broadcast at the time, the crew of Apollo 8 took turns in reading from the Book of Genesis as they orbited the moon. Chapter 1:22 reads (New American Standard Bible, 1969):

‘God blessed them, saying, Be fruitful and multiply, and fill the waters in the seas, and let birds multiply on the earth.’

FIGURE 1: Reference to the NASA Apollo space missions in Ian McHarg’s Design with Nature (1969, 76)
The reading from space became a spectacle that symbolized and added leverage to a new mindset that viewed life on earth as one large interconnected ecosystem. (Figure 1)

One year later, this very passage of the Book of Genesis is referenced in the title of Ian McHarg’s 1969 film entitled “Multiply and Subdue the Earth” (PBL). My argument, as will be more clear in what follows, is that the reasons for choosing the title had to do with cohesive message of the Bible, though not necessarily in a religious sense, and with the Apollo mission, to the same degree. The image of the astronauts acutely confined to the space vessel, reflecting on the omnipresent force of a spiritual calling for life on earth, was too powerful and political an image for McHarg to resist.

The point made in this paper is not that there are links between McHarg and the mid-20th century science known as cybernetics – as we will see shortly there is plenty of evidence of that (Anker 2005; Herrington 2010; Lystra 2014) – but rather what these links imply, and in what way the implications may be productive and relevant for us to ponder. My thesis can be summarized in three points. First, I show that McHarg communicates his agenda, and proposed methods for action, in a rhetoric that mirrors that of systems theory and cybernetics. His use of terms such as regulation, fitting, creativity, stability, adaptation, and health explicitly implies an approach concerned with flow management, control and feedback. Second, if we look beyond textual or semantic correlations, I have found that the actual model McHarg proposes implies an interesting and unusual setup between what he calls “the body” and the “environment”, which I think deserves to be revisited. Finally, I will show how McHarg in this rhetoric uses techniques of representation that closely emulate those of system scientists and cyberneticians a decade earlier. I will end the article by briefly speculating around what this revisit of McHarg could potentially imply for contemporary landscape urbanism.

**SUGGESTED HEADLINE**

As historian Andrew Pickering points out, cybernetics is a different kind of science that belongs to a strange and unfamiliar paradigm (2013, 90). Its point of origin was MIT in the late 1940s, and the work of mathematician Norbert Wiener. His 1948 book, *Cybernetics or Control and Communication in the Animal and the Machine*, was inspired by questions concerning how animals and humans maintain equilibrium, and how they respond appropriately to their ever-changing environment. Over the next decade Wiener’s ideas would develop into a science that couples ideas of feedback and control with information theory and electronic computing. The most salient aspect of the new science was that it embraced the unknowable by substituting older ideas of scientific certainty with a new cybernetic ontology that invites for processes of adaptation and becoming (Pickering 1995). Unlike other sciences, cybernetics begins with the view that the world ultimately is unknowable, it is ‘an unpredictable place of emergence and becoming’ as Pickering notes in his text *Cybernetics and the Politics of the Dark Universe* (2013, 90).

McHarg’s *Multiply and Subdue the Earth*, was a 120-minute film co-produced, written and presented by McHarg and American journalist Austin Hoyt for the Public Broadcast Laboratory of National Educational Television (now PBS). The film begins with a scene from the US national institute of health, where behavior scientist Dr. John Calhoun is attending to an experiment (Figure 2). Directly influenced by Heinz von Foerster, the originator of so called second order cybernetics, the pictured mouse maze study is a form of biological computing, here concerned with urban pathology. The focus of the ongoing experiment is the social behavior changes that accompany increases in density, overcrowding and social competition. In other words, the goal of the gerbil experiment is to understand what Calhoun calls “pathological togetherness” – the antithesis of the Genesis message. At the beginning of the film, Dr. Calhoun explains the most recent finding of the study:

> As the population increased in size, as there were more interactions between individuals, the change that took place was not so in the character of the deviance of behavior, but in the fact
that a larger and larger percentage of the population exhibited deviance behavior that was not of survival value to the group. (Multiply and Subdue the Earth, 1969)

The scene of the mouse maze brings to mind other experiments in environmental psychology and behavioral studies such as those conducted by Edward Tolman, but also studies on intelligence, machine learning and AI. Claude Shannon's maze solving mouse “Theseus” from 1952 springs to mind, or from a context closer to design the subsequent “SEEK” experiment by Nicholas Negroponte and the Architecture Machine Group from 1970. All these experiments deal with intelligence and with furthering understanding of man/environment interactions. However, there is a particular point that Calhoun is making, and that interests McHarg. The research suggests that individuals in dense and overcrowded settings often develop deviant behavior, which imply collaboration and a sense of a shared purpose is absent.

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That same December in 1969, NASA’s Apollo 8 also sent back photographs of the earth as seen from space. The sociopolitical impact of this looking back at what became known as the blue marble has been written about extensively (Lovelock 1979; Poole 2008). Relevant for this article is that a modified version of the image reappeared on the cover of Ian McHarg’s manifesto: Design with Nature, the same year Multiply and Subdue was broadcast. While the selection of the cover art may have been a strategic move to capture the attention of a wide audience -- this was after all a period in which the American public was spellbound by the Apollo programme – I would argue that McHarg’s intention was more profound. Similarities to the cover of Stewart Brand’s counterculture magazine Whole Earth Catalog, published a year earlier, are striking. While Brand’s publication was intended to equip back-to-the-landers with practical and intellectual tools useful for self-sustained living, McHarg’s book presented a vision of symbiotic collaboration ad their resulting in human environments designed in concert with the natural world. The explicit parallels between the closed environment of the Apollo spacecraft, and the biosphere of the earth are striking and unusual. He writes: ‘If one can view the biosphere as a single superorganism, then the Naturalist considers that man is an enzyme capable of its regulation, and conscious of it. He is of the system and dependent upon it, but has responsibility for management, derived from his appreciation. This is his role – steward of the biosphere and its consciousness’ (1969, 124). References to space appear, as Peder Anker (2005) points out, in many places in McHarg’s work. For instance, in a few of the chapters in Design with Nature, an astronaut serves as McHarg’s narrative protagonist. For example, in a chapter entitled “The World is a Capsule”, McHarg writes that ‘We can use the astronaut as our instructor’, as his struggle for survival within an essentially closed system is in principle the same as that of mankind in the biosphere of the Earth (1969, 95). However, while the functionality of a spacecraft is monitored by sensors fitted to electronic signals, the question McHarg faces concerned how to measure that the earth evolves in a sustainable manner?
Continuing a tradition of overlay mapping, McHarg proposes a survey method that integrates information from a cross-disciplinary set of sources (1967). The output from the prescribed critical diagnostic analysis, performatively constructed with the help of graphic transparency, is referred to as “X-rays” (1969, 35). In short, McHarg approaches an expert in each field of science and asks where, from their point of view, a geographic site or region would be most harmed if developed. For each scientific field a transparent overlay is developed that via the means of grayscale encoding communicates the areas are most and least negatively impacted if developed. On the example of the route selection for the Bronx River Parkway, McHarg notes that at the outset, ‘The method was known but the evidence was not. It was necessary to await its compilation, make the transparent maps, superimpose them over a light table and scrutinize them for their conclusion. One after another they were laid down, layer after layer of social values, an elaborate representation of the Island, like a complex X-ray photograph with dark and light tones. Yet in the increasing opacity there were always lighter areas and we can see their conclusion’ (1969, 35). (Figure 3)

In essence, McHarg’s ecological method (1997; 1969) constitutes a greatest-social-value-at-minimum-environmental-cost model, in which creativity constitutes the driving factor. The notion of creativity is borrowed from thermodynamics, where it is defined as the process of raising matter and energy to ‘higher levels of order,’ (McHarg and Steiner 2006, 54). This change, according to McHarg, is a process of inherent directionality - a phenomena he finds applies to both living and non-living systems. Thus, McHarg argues that if one can observe the directionality of the process, then it can also be determined whether or not it is creative. The criterion used to judge whether or not a process is creative McHarg calls ‘to fit’ (McHarg 2006, 25). He writes, ‘The ability to find of all environments the most fit, and to adapt that environment and oneself, is in fact a creative process’ (Ibid., 24). But in order to determine whether or not a situation is exhibiting ‘creative fitting’, a holistic attribute is needed: ‘health’ (Ibid., 25). However, the medium McHarg chooses to express the holistic attribute is to become the most criticized feature of his work– the static cartographic map (Herrington 2010, 11).

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While the map is static, much of McHarg’s rhetoric focuses on dynamics of landscape, and interestingly, while he is fundamentally opposed to Western anthropocentric industrialism and 20th century dominance of neo-liberalism and laissez-faire politics, which he believes is the cause of a rapid and unforeseen destruction of the environment (1969, Chapter 3: “The Plight”), McHarg proposes replacing not the philosophy of economics per se, but rather the currency of trade, from money to energy. In other words, what McHarg proposes is ‘an ecological value system in which the currency is energy’ (1969, 197). This shift, he argues, will increase ecological awareness by establishing a controlled and scientifically monitored world. Focusing on energy enables not only a dynamic survey of environments but diagnosis of their health, which in turn will allow for a better and more sustainable alignment between the purpose of natural systems and that of man-made ones. This goal of aligning purposes – or diagnosing health, according to McHarg – is arguably the key attribute that McHarg’s program shares with cybernetics. The central question, which makes the topic resonate with the contemporary moment, is that if we for the sake of reflection imagine Ian McHarg as an ecologist-cybernetician, concerned with sustainable management, we will have a difficult time determining if McHarg sees himself as belonging to what is known as First order cybernetics, where the observer is not part but located outside of the system he is observing, or if he belongs to a higher order cybernetics, where the observer is part of the system and in turn, by his presence, influences and is influenced by the system. On this very point McHarg consistently contradicts himself.

In focus, in McHarg’s writing, is the dynamic body of the environment, i.e. the interface between human activity and the natural order. In other words, the body is construed as the combined symbiotic set up of the natural world and human activity. That is, a hybrid between what might
in earlier periods have been called *Nature* and the manmade or superimposed. Through his writing, teaching and professional work, McHarg commands that landscape architects must strive to become experts in determining the health of this hybrid, which in turn may assist in adapting human activities and in altering the environment to achieve “creative fitting”, envisioned as a stable and harmonious equilibrium, not only on a local level but on a scale that science with capital S predicts sustainable for the entire *blue marble*, construed as one holistic system. However, if we, like cyberneticians in the 1950s accept that our mission ought not to seek positive knowledge in order to make the world knowable, but rather concern ourselves with how to productively cope with uncertainty, where would that lead? Similarly, McHarg asks: ‘Where else can we turn for an accurate model of the world and ourselves but to science?’ (McHarg 1969, 29). While this strive for accuracy has in retrospect been labeled scientific determinism, the greatest learning from McHarg is perhaps that science may not offer emancipation for landscape architecture, as he once claimed (McHarg 1967, 105). Stated differently, as Andrew Pickering points out, many cyberneticians’ efforts, Stafford Beer among others, revolved around the construction of management systems that could performatively adapt to environments that they could not fully control (2013). In the case of environmental landscape design, such an approach implies neither a lack of environmental concern on one extreme nor total paralysis on the other, but rather that the process of monitoring, calibration and becoming is the object on which to focus, not with aim to stabilize it into equilibrium, as McHarg envisions, but rather to continuously refine our techniques for taking stock of landscapes in motion, and to actively participate in the process of propelling such forward.

**CONCLUSION**

The great master narrative of McHarg is that his is too expensive and controlled a method, and that his approach is lacking a humanist dimension. He is either accused of being blinded by scientific determinism or of being too subjective. What I suggest here is that his use of cybernetic blue-marble rhetoric is not an analogy but rather a shift in scale. That is, while his method is highly representational is also performative, in a cybernetic sense as described by Pickering. This aspect of McHarg’s work I argue is often overlooked in favor of his belief in ecological determinism. As I have illustrated in this article, via the ecological method, McHarg puts image to thought by giving flesh to the immaterial conception of the dynamic environment. As such, the X-ray is a temporal ontology, a snapshot, obsolete as soon as it is assembled.

**ENDNOTES**

1. This paper is intended to position itself in conversation with two articles written by Peder Anker and Susan Herrington respectively, which both make the suggestion that there are close intellectual ties between Ian McHarg, systems ecology and cybernetic thought in the cold war period. I am referring specifically to Anker’s piece “The closed world of ecological architecture” (2005) and to Herrington’s ”The Nature of Ian McHarg’s Science” (2010). Related to these studies is also Margot Lystra’s article, entitled ”McHarg’s Entropy, Halprin’s Chance: Representations of Cybernetic Change in 1960s Landscape Architecture” (2014), which suggests parallels between the language of McHarg, Lawrence Halprin and cybernetic concepts.

**REFERENCES**


TOWARDS AN AESTHETICS OF AFFECT FOR LANDSCAPE ARCHITECTURE/URBANISM

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KEYWORDS: aesthetics, affect, landscape, performativity.

"Something in the world forces us to think. This something is an object not of recognition but of a fundamental encounter."

In recent times the landscape of landscape architecture and landscape urbanism has become entangled in a series of theoretical and discursive discussions that have permeated from contemporary continental philosophy, and which promise a potentially transformative debate for landscape disciplines. Beyond the obvious issue that these philosophico-theoretical streams embody forms of discursive "isms", and hence beg for a deeper investigation of the implications of such entanglements for landscape architecture/urbanism, their appearance in current approaches to landscape-driven research and design bespeak an important shift that problematizes the conventional understanding of landscape architecture as a thing – as a "design", or a "project"-, and instead proposes its reconceptualization as an action - as an orchestrated agential act-, capable of fostering affective encounters, triggering new subjectivities based on experience, and driving new forms of heightened responsiveness.

LANDSCAPE URBANISM’S STRUGGLE WITH PERFORMANCE
Conceptualizing landscape architecture as an action rather than concentrating our efforts on fixed and stable objects is not entirely new. James Corner’s Recovering Landscape of 1999 paved the way to more recent developments in landscape architecture, namely the formation of landscape urbanism, which has since significantly contributed in acknowledging the open-endedness and indeterminacy of the development of contemporary and future cities. It has repeatedly proclaimed its celebration of uncertainty, and —with its emphasis on patterns, processes and dynamic relationships— it has admirably pushed forward an interest in "performative design". Such a design approach moves away from fixed identities, essences and places, as well as from complete or finished products, towards a focus on continuous production, and sustainability, —understood as “sustained” experimentation and continuous striving towards adaptation, evolution and the facilitation of new encounters. The understanding of landscape “in becoming” advances diversity; it remains open for future elaborations and ultimately works towards sustaining the heterogeneity of life and expression. Landscape urbanism projects that make use of the “performative approach” to design advocate change; yet the notions of chance, indeterminacy, as well as the truly unpredictable and unrestrained emergence, still seem unsettling when projects reach their implementation stage. Relinquishing control and setting relations free is a difficult endeavour. There is often little
The possible, open-endedness of the future easily becomes predefined and highly regulated, and when the time is right, it simply actualises the expected outcome. Concepts get lost in translation, so to speak. The future suddenly gets stuck in the present, and a project’s design rhetoric reveals itself as a broken promise.

Given that one of the key notions of landscape urbanism is change, it is curious to see that the movement has turned its back to one of its closest relatives: gardening. Gardening is far more engaged with change than traditional landscape architecture: it works with actual plants and actual soil and is from the start creatively involved with landscape processes as something tangible and open to experience. In contrast, in the search for a suitable method to achieve desired landscape performativity, landscape urbanism has turned to computer modelling, where process-based design generation techniques are employed to simulate change and ecological dynamics. In this way, ecology, despite being highly specific, becomes a model and not a particular, localized condition. Turning ecological mechanisms into a model ultimately overthrows them and firmly secures them in carefully aestheticized representation. Once implemented, such designs commonly fall short of living up to the promise of dynamism and open-endedness implied in the generated diagrams and simulations; their forces remain trapped on screen, exposing how a design that performs on screen does not necessarily perform once it is implemented outside the confines of a computer.

Design-simulations that imitate landscape behaviour and ecological mechanisms often forget that, while software is undoubtedly a useful tool that can produce multiple design alternatives relatively quickly, a landscape intervention—in addition to being a skilful choreography of ecological processes, systemic thinking and environmental problem-solving—is also a product of culture. When the discussion engages aesthetics, landscape urbanism assumes a reserved stance: even when it explicitly rejects romantic, pastoral or picturesque landscape scenes, it nevertheless pays great attention to the quality and aesthetic appeal of its projects’ representations. Compared to ecological issues and design instrumentality, however, the aesthetic component of built projects’ is quickly dismissed as superficial or regarded as merely a pleasing bonus. Nevertheless, taking into account that when a project reaches its implementation stage, the dynamic relationships and the flows of the city still need an expression and a form to play out, the design choices all too often fall into with what is tried and tested: simulated neutrality and the continually naturalised. This means that long-established structures are given contemporary forms, only to reinforce the status quo, while simultaneously naturalising the persistence of the political, economic and social order. Such newly created landscapes simply reflect the social reality we live in and become multiples of one, duplicating or reproducing the world that already exists, instead of creating a world that invites engagement and activates landscape to meet contemporary concerns. These landscapes do not challenge or dare; they affirm and reinforce our being and acting in the world, and often rely on the traditional aesthetic categories of the pleasant and the beautiful they pretend to reject. Changes are welcome as long as they do not diminish human comfort, safety, or the accustomed quality of landscape experience. While it is true that natural processes and non-human actors are part of the designed assemblage, they are allowed to do only certain things, at certain times and on certain places. The drawn boundaries, within which landscape processes take place, remain fixed and taken-for-granted, therefore limiting the variety of possible outcomes to a set of fairly predictable “changes”. In this way, designed landscapes turn into sites of desire after controlled contingency where possible interactions are predetermined. Instead of powerful affects and interesting effects achieved along landscape’s performance, they become what their creators initially seemed to challenge and reject: representation of something already in existence. Upon closer inspection, an important amount of work produced today, echoes with what James Corner observed almost two decades ago, namely that “…a combination of nostalgia and consumerism drives [the desire of sentimental recollection] while suppressing ambitions to experiment and invent.”
LANDSCAPE'S PERFORMATIVITY IS AESTHETIC

In this article, we argue that it is precisely the initial denial of aesthetics that causes such conceptual and practical shortcomings, and that when coupling landscape’s performative capacities with its power of cultural expression, one should start by acknowledging that performativity and aesthetics are not mutually exclusive. Ecological performativity is aesthetic. Under this light, the aesthetics to which we are referring to here, is not the timeless aesthetics which in the western scenic conception of landscape and landscape experience predominantly falls under the categories of the beautiful, the picturesque and the sublime. Instead, our interest lies in the myriad of ways by which the experience of landscape, —understood through an immanent notion of aesthetics—, may trigger specific forms of action. In such a way, aesthetics is read not through its representational qualities, but through its affective, ethically and politically enabling potentials. It is an aesthetics that turns away from traditional aesthetic categories; it is — above all — unfamiliar, and at its best, unsettling and even otherworldly: it does not comfort, but instead, it confronts and demands response.

In recent times, it has become increasingly difficult to argue against pleasing and comforting experiences, against those brief moments of escape and respite from the speed and anguish of contemporary everyday life, when stillness and the familiar are desired and looked for. We certainly need familiar landscapes, places where we feel comfortable and protected: undulating picnic lawns, curvy strolling paths, fragrant flowers, sound of water in the distance, vegetation that is lush but not overgrown, animals that make us feel we are not alone, but which always remain at a safe distance. But this is not it.

Landscape architecture is expected to fulfil a series of daunting responsibilities: cultivating environmental awareness, creating new “publics”, leading the path of future development, providing space for social interaction, influencing quality of life, constructing a sense of belonging, responding to environmental issues, etc. While occasional innocent passivity and detachment is necessary and welcomed, constant reliance on long-established structures not only holds back the development of the field, but also denies the possibility that there is more to the world and to ourselves than what we currently imagine.

Therefore, to begin moving towards landscape urbanism’s ambition to go beyond mere appearances, landscape architecture needs to shift its focus from a landscape experience that is tightly knit with vision towards an open-ended encounter with landscape that operates aesthetically through the force of *affect*. Approaching experience and aesthetics from the affective side removes them from the purely visual domain, and places emphasis on affects as pre-cognitive modes of awareness and bodily response. In this way, the question is not primarily *what* we experience or *how* the experienced landscape (or design representation) *looks like*, but rather what this encounter *does*, how it reshapes our capacities to act, to what degree it influences our perception, offering us more than simple beauty or meaning. The revival of affect theory in recent decades is precisely an attempt to understand those domains of experience that fall outside the hegemony of representation and language. The importance and power of aesthetics is therefore found in an immanent sense, through the notion of *affect*, and not through some transcendentonal structure or representational system of signification. Affect is shaped exclusively by the participants in an encounter that form a composition, which might, —or not—, enhance the participants’ capacity to *act*. Following the Dutch philosopher Spinoza, and his affirmation of openness, while the capacities of bodies involved and the outcomes of an encounter can never be fully known, it is certain that they are always followed by a form of response, by *action*.

THE ‘UNFAMILIAR’ AND ITS POWER OF AESTHETIC PERSUASION

When discussing affect the focus is not placed on the emotions of the subject, or on those of an individual body; nor is it placed on the individual’s capacities to act, but rather on a body’s behaviour in relation to other bodies, in specific socio-material formations and provisional or-
derings. French philosopher Gilbert Simondon treats affectation (affectivity) as a mode of bodily experience that does not necessarily correspond to previously known bodily habits or already constituted frameworks. While perception is already qualified and formed, affect is open and unpredictable. According to Simondon, affectivity is found in-between, between a body and its becomings. Following his thought, individuals of any kind can never be fully complete as they constantly partake in the larger processes of collective individuation through the force of affect. By acknowledging that an individual is not a closed set of relations, but an evolving body with the power of continuous becoming, we also see why it cannot be detached from its surroundings (milieu) and from all other individuals. An individual can only be defined in relational terms: as a phase within a larger process, and contrasted to what it is not, to what it emerged from, and to what it could potentially become.

According to Brian Massumi, an individual (understood as continuous becoming), is both abstract and concrete: it extends to the realm of the body's potential, constantly participating in the virtual, and thus, moving towards what is always already immanently present: incorporeal, yet very real. The force of affect (intensity) signals a critical point (threshold) that triggers emergence as individuation on other levels, and while escaping confinement, it nevertheless retains the body's potential for interaction, thus sustaining its continuous becoming. This affective intensity (or continuum of potential) affirms its openness, triggering material-affective responses, which are rooted in the (not necessarily 'human') body, and foregrounding its capacity to act differently. In short, affects are pre-subjective, non-cognitive forces and intensities that are experienced prior to consciousness, intensions, meanings or reason. They are nonsignifying, and yet, they influence our actions. Affects are quickly adopted by structures of thought, speech, and conscious reasoning, where they are organised into ordered, and recognisable perception. When we perceive a tree, i.e., we name it “a tree” because we have learnt how a tree should look like. Through the course of evolution, perception has aided us in narrowing down the complex reality of a “tree” to meet the operative, yet limited, information we need to navigate through everyday life. “A tree” it may be said, is comparable to a user interface. Yet, what is actually concealed, and what we typically fail to recognize, is the composition of nutrients, energy and water flows, reflected light, respiration, arrangement of pigments, cell division, decay, food storage, absorption, vegetative reproduction, community interactions, etc. that constitute “a tree”. A tree will remain a tree, but in order to see it in previously unforeseen ways, that is to say differently, we would have to change the register and let ourselves be affected through altered, disordered sensations that challenge and disrupt our habituated perception to form and re-form our bodies. It is in this way that the “unfamiliar” functions. Understood as affect, the “unfamiliar” holds the power of aesthetic persuasion, making us realise that there is more to reality than meets the eye.

In this sense, the “unfamiliar” is of significant value for a host of material and spatial practices, including landscape design, where the engagement with abstract concepts such as affect or desire is not a common or customary approach, but which nonetheless are receptive to aesthetic registers.

Not far removed from concepts that are emerging in the sister field of critical ecology as a response to impoverished or flawed methods to deal with the impact of human interaction with the environment (“novel”, “impacted” or “designed ecosystems”, i.e.), the unfamiliar in landscape design becomes a potent concept-tool to think and act within so-called disturbed sites: landscapes left behind after intense human (ab-)use. All too often, transformations of such landscapes, instead of working with and within them, tend to propose designs as cosmetic solutions that seek to ameliorate these “undesirable” effects of human development and exploitation. Beginning from restricted representational and dialectic logics that strive towards an unattainable ideal, and relying on tested formulas, techniques and existing models throughout the design process, such transformations commonly end up only reproducing and repeating the already existing realities. In contrast, to dive into the unfamiliar is to enter the complex assemblage that is the milieu; it is to engage in ethico-aesthetic approaches where our agency as humans within the environment is
levered against that of other more-than-human agents and forces. As participants in this becoming we experience the power of experimentation and performativity from a disoriented, decentred, dislocated position, from where we may begin to think and act differently.

AESTHETICS AS A CATALYTIC AND CREATIVE FORCE

In order to create something worthy of making today would require to think in permanent unfamiliarity, that is, in relation to the yet to come, to what does not yet belong in this world, but which is immanent to it. Perhaps it is because landscape architecture and design are material practices necessarily embedded in physical reality, that they often fail to acknowledge precisely that which sets them apart from it. For instance, instead of addressing “a public” as an undefined mass of bodies passively waiting to be summoned, landscape projects could instead approach “a public” as something to be created, sustained and/or disassembled. They could strive to create their own public, a public-yet-to-come and a human-yet-to-be-constructed, instigating novel forms of subjectivity based on mutual interdependence between the human and the non-, or more-than-human, between the “natural” and the “cultural”. They could embrace creativity as unrestrained emergence and uncontrolled response to the world, as liberation from the fixity of our times by opening up to the possibilities of being and acting otherwise. The aim would not be to somehow magically bring about social change, i.e., but to envision other alternatives of thinking and making landscape; a landscape design that does not reproduce itself, but renders imaginable the multiple worlds we could begin to inhabit instead.

Under this light, landscape design would not only adapt to changing conditions over time and make room for other kinds of future landscapes, publics and urban futures, but it would also ensure that what is made is, —and remains—, as richly diverse as possible. Only at that point could we begin to talk about sustainability or resilience of a landscape in becoming, where the power of aesthetics through affect is what binds human subjectivity, the environment, and social relations together — by engaging us critically, stimulating thought, influencing behaviour, ideas, judgements and desires; by expressing the unknowability, incompleteness, openness, and fluidity of the world. Above all, by triggering action while relentlessly showing that landscape is not a totality, and that the world is not set in stone.

ENDNOTES

4. It should be noted that our attempt to bring back the notion of aesthetics into contemporary landscape echoes the work of many contemporary scholars. Although from a slightly different approach to aesthetics, the work of Elizabeth Meyer importantly connects aesthetics to the body as a multi-sensory experience, where she argues that aesthetics is crucial if the design is to have any significant impact on individual or collective life. In: Meyer, E. (2008). Sustaining Beauty, The Performance of Appearance. A Manifesto in Three Parts. Journal of Landscape Architecture 3(1): 6-23.
5. This refers to the dynamics of natural systems, cycles and processes, as well as to the interrelated and simultaneous ecologies of mental, social and environmental worlds.
6. Landscape experience is conventionally discussed in relation to vision and a perceiving subject. Hence, the experience of landscape often falls under the domain of aesthetic experience or perceived aesthetic value. Aesthetics approached from the visual domain praises ‘natural beauty’, the world in harmonious balance and the experience of visual pleasure according to long-established structures that may please or offer timeless experiences, but which often holds little power and limited potential to affect and be affected.
Blog/?p=219 [August 09, 2016].


10. Ibid. p. 252.


RECYCL-ISM. TOWARDS A CHANGE OF PARADIGMS

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KEYWORDS: landscape, cities, infrastructures, aesthetic, recycling, obsolescence, life cycles, landscape urbanism

INTRODUCTION
Since 1970s, the theoretical debate on environmental sustainability is oriented towards a new ecology of the artificial, where environmental constraints offer to the design culture the extraordinary opportunity to propose different solutions based on renewed criteria quality. In 1965 Vittorio Gregotti claims that, ‘nothing is created, nothing is destroyed: however everything is accumulated, waiting for being transformed. There are not only cemeteries of men, dogs and elephants: our entire urban periphery is a graveyard of objects [...] and it stops, skeletal, somewhere, waiting the time for its convenient recovery.’ This is increasingly happens nowadays. In many western European countries we have built more that the real necessities. Very often uncontaminated landscapes and ecological systems have been drastically compromises by the construction of new buildings or infrastructures. Dramatically many of these have never been used or have remained unfinished. In the last ten years, 4.3% of the European Union’s territory has been affected by urban development, a shocking amount if we consider that only 13.4% of the total surface is actually urbanized. Such numbers double and triple when we look at Italy, Germany or the Netherlands. In the meanwhile changes in technology, economy and lifestyle continuously drive the abandonment of what is considered obsolete, leaving behind polluted and undetermined landscapes while shaping new urban configurations that literally consume the territory and its resources. This is particularly evident, in the current situation, where the financial crisis is making even the new appear obsolete: in Spain alone 1.5 million new buildings are empty, in Italy 1.2 million. These changes have happened so fast that well tested solutions and historically based planning are no longer viable. The result is a mismatch between populations and available resources, in which the environment and landscape are paying the highest price.

Recycle, in landscape and urban terms, is a process that transforms the original material by adding proprieties not related to the original use. Recycle works on existing structures and territories from open perspectives and covers issues with wide contents such as hybridization and integration, always aiming to confront the old and new through the merging of mixed uses, epochs, attitudes and technical solutions. It has been affected by new cultural and esthetical attitudes of contemporary society and these discourse necessarily bring into a dichotomy between aesthetic and ethic. Aesthetics—intended as a subjective but shared perception of our bond with the environment—is defined by a deep and balanced dynamic harmony. Ethics instead is the ability, subjective and
intersubjective, to conceive and accomplish actions that can keep a healthy and balanced bond with the environment. Therefore, ethics and aesthetics are two sides of the same coin. If aesthetics is the (inter)subjective feeling of the harmonious “immersion” in the environment and ethics is the (inter)subjective feeling for the respect and harmonious actions on the environment, then the ethics allows to maintain the aesthetics, and the aesthetics guide for ethical actions.\(^5\)

**LA RE-ÉPOQUE**\(^6\)

Rehabilitate, rebuild, recalibrate, reclaim, reconnect, recover, recycle, redistribute, reform, refurbish, regenerate, reinvent, remake, remediate, renovate, reorganize, repair, restore and reuse are some of the most significant RE- key words used in research projects during the last decade.\(^7\) It seems to be a time of reflection and reuse of what has already been produced: the *RE-Époque*. It has an implicit assonance to the *Belle-époque*, one of the most optimistic periods of the modern history, where new arts flourished underneath a general optimistic and positive attitude. At that moment the concurrence of many technological innovations, joined to a quite stable international political condition caused—in a relatively short time—considerable technological, scientific and cultural innovations. Similarly, we are now in a time of change, but with economical, political and environmental conditions very different and less stable. However, the concept of recycling has been present in architecture, city and landscape since ancient time but the conditions for which it is proposed have changed. According to Mosè Ricci, ‘architecture and the city have always recycled themselves. Examples like Split, Marcello Theater in Rome or the Dome in Syracuse are just a few of the most obvious manifestos of recycling’ (Figure 1).\(^8\) It’s not a question of restoration: the idea of conservation tends to embalm the image of architectural or urban space by attributing value to the unchangeable.” In fact, recycle differs from operations of restore and reuse. Reuse refers to operations at the medium scale and is based on reprogramming the uses rather than on refurbishing the building or infrastructure. Whereas, recycle breaths new life into structures, which will reincarnate in a different body. Recycle is a process that transforms the original material by adding properties not related to the original use. Recycle works on existing structures and territories from open perspectives and covers issues with wide contents such as hybridization and integration, aiming to confront the old and new through the merging of mixed uses, epochs, attitudes and technical solutions.
In the beginning of the twenty-first century, the idea of recycling the existent to design landscapes and cities has grown in importance in many European nations due to social problems connected with the conditions of certain suburbs, but also as urban tool for institutions to regulate the land use (Figure 2). Several superimposed crisis—financial, political and environmental—brought a higher sensibility to climate and social changes and even a change of paradigms in the dynamics of urban transformation. Design projects and theory turned towards environmental, efficiency, cost or energy saving factors. An increasing number of design projects aim to recycle existing buildings in particular contexts, with specific attention to social and ecological issues. In fact, ‘two disguises have been applied to the architect in recent decades: firstly, that of destroyer of the past and secondly, that of interpreter of history, and now he has become an ecologist.’

But recycle also allows for a range of imaginative and metaphorical associations, moving towards an attitude of understanding and balance with the legacy that has been inherited. It arises from two main themes: the progressive abandoning of buildings in the post-production city and the new ecological urban dimension. ‘The trend is moving away from the modern attitude of domination and submission which characterized previous decades towards a mechanism of atonement for the excesses of the past’ with an attitude of understanding and reclaiming what we have hyper-produced.

In contrast to other urban and architectural theories, recycling is not a formal or spatial approach. It works with the specificity of each context and improves their potentialities. In fact, recycling means the reuse of waste materials, which have lost value or meaning. It is a practice that helps to reduce waste, to limit its presence, to reduce disposal costs and to limit production of new waste. Recycle means, in other words, to create new value and new meaning. ‘Another cycle is another life. […] Recycling is the ecological action that pushes into the future by transforming the existing waste in the prominent features and producing the city’s culture, the beauty and the urban quality.’ It is also evident that recycle offers different possibilities of action. According to Francesc Muñoz recycle could also mean new activities that reinforce (enhance) the principal function use and not necessarily as the simple replacement (substitute) of the original use. However, recycle’s main purpose is to work on the sense of things, on their meaning, on their memory. In that sense, recycle offers different possibilities of action. Although it depends on each case, generally the more immediate idea of recycling is to take out what is there and put in something else. But Muñoz approach adds value to the complexity of the recycle process because there might be several alternatives instead of one single project.
THE ECOLOGICAL FOOTPRINT OF RE-CYCLE

Contemporary society seems to lose solidity: its organizations become plastic, its living attitudes become fluid, projects tend to be flexible, and choices reversible. Or at least this is the tendency. Even if this is not completely new in philosophical terms, everything changes in practical terms.

As it was between the 19th and 20th centuries, the Re-époque is not only a temporary vogue but it brings a real change of paradigm with a significant impact on cultural, ethical and aesthetic values. The recycling process is generally linked to the need for recovery of the obsolete heritage, the land preservation through the reduction of land use, the redevelopment of abandoned areas and, in particular, of obsolete infrastructures in an economic environment of reduced resources. Infrastructure gives life to cities. If it’s true that infrastructures sustain cities, what happens when they ends their life cycle, becoming obsolete? They compromise our landscape and cities, often generating problem of degradation and social security. Designing landscape and cities, today, claims for a shift in the design approach. The exploration of potentialities—spatial, social and aesthetical—in recycling obsolete structures achieves an implementation towards sustainable and ecological solutions. Furthermore recent projects highlight the challenges in re-thinking not only the abandoned and unused infrastructure in search of a new identity, but also recycling all those infrastructures that are already active but poorly operating and unproductive.

Recycling practices are therefore very important because they imply a reconsideration of the role of architects, landscape architects and urbanist nowadays in society. The challenges of design (the landscapes and the cities) are moving beyond the creation of fascinating new forms that introduce new aesthetics and new materials. Anne Lacaton clearly stated that the most important questions for architects now are: ‘How and where do we want to live? What can we do to improve living conditions in cities? How can we define that and reformulate the notions of comfort and of quality of life?’ An answer to these questions is given by the recycling the obsolete heritage, structures and spaces. In contrast to the French policies of demolishing and rebuilding, Lacaton and Vassal propose the recycling of obsolete social houses buildings. According to the French architects, it is not possible to consider these elements only as a single architectural issue. The residential blocks of Tour Bois Le Prête in Paris, among others, are not at the end of their lives—even if they are in bad condition with numerous problems—and they still have a high potential for improvement. The project works with the on-site materials that are the building per se, and the people who inhabit it, in order to make it again ‘a nice place to live’. Adding roof gardens and balconies, remodeling the skin through new openings and materials, the project has brought an improvement in the quality of the interior spaces, creating an immediate transformation of the image of the building as well as generating an improvement of the surrounding area. Lacaton and Vassal propose not simply replacement of the superficial skin, but rather they implement a place with a lasting transformation that comes from the inside, directly from the substance of the building.

Accordingly, recycling approaches, defined case-by-case, offer a network of paths in the landscape rather than presenting one-way routes that strongly limit the way of living in the territory. Focusing on infrastructure, recycling is an emerging attitude in the reactivation of obsolete urban infrastructures. Obsolete and interstitial spaces of the city become the palette to be used in order to build a new ecological and environmental sensibility shared by communities and citizens. These are generally projects that activates a new life cycle to communicate, share, enjoy, and experiment a different way of living an abandoned or obsolete spaces, but also to and rediscover their beauty. Often they can be accomplished through collaborations between institutions and individuals, associations and groups, with a collaborative attitude as a political act. Urban recycling, temporary installations, and land-art increasingly become regular practices rather than occasional actions, thanks also the contribution of interdisciplinary languages like arts and media. These projects are driven by the need and the search of a new life (a new lymph), to follow the traces of the past but even more to begin a new story. The High Line in New York (Figure 3) and the Trento Tunnels in Trento (Figure 4) are two of the most renowned and discussed case studies of the last decade. They clearly show how recycling practices could be profitably extended to the landscape and urban scale.

to recover abandoned structures through a new interpretation of landscape within the city. These projects experimented the reinvention of infrastructure’s significance and identity, the mending of a tear in the urban fabric. In fact, these recycled structures reinterpret surfaces, buildings, and fragments of former transport infrastructures, converting them into public places with pedestrian and cultural uses with a renewed aesthetic.

**FINAL REMARKS**

Nowadays, think about what is an environmentally friendly, sustainable and costless lead to a different ethical principle: a project based on reuse and wastes’ reduction, with ecological performances and environmental protection. All this created a new expressive and procedural language. Recycling is neither a temporary vogue nor a mere metaphor: it is a design process carrying ethical principles and expressing the new aesthetic changes of contemporary society. It is an adaptive and contextual practice that works with tactics rather than with models. The missed use is replaced with a new one, very often unexpected, that comes from other forms of expression. Its “essence” is superimposed on that of the original place, thus creating meaningful images and places with strong narratives. Recycling guides behavior models rather than good practices. Recycling projects propose a pervasive vision, able to interpret the contemporary change of living landscapes and places. In that sense, ethics and aesthetics are not in opposition but rather complementary paradigms. Recycling as a design approach calls into question the figure of the author: it opens the possibilities to the active participation of citizens in reshaping the future of their cities. Landscape architects, architects, or in general designers, reaching with their works in the field of ethics, deliberately or unwittingly, does not say anything that has not already been said in other fields of the thought. Their rather interpret and translate into shapes and materials those messages already articulated by others in different languages. The author, single or together with a community, becomes an interpreter of the change of a new expressive language. Landscape architects, architects as well as urban designers and planners are called to re-encode the change.

**ENDNOTES**


2. Source: ISTAT, 2001-2011. In the Netherlands soil consumption was 15.2 % of its surface, 9.8% in Belgium, 7.3% in Italy, 6.8% in Germany, 5.2% in France, 3.6% in Spain.

3. The financial crisis made visible the consequences of overproduction in the European construction industry: in Spain, over 1.5 million new residential buildings, completed after 2007, have remained unsold (Source: L’Internazionale, December 6, 2012). The land consumption in Italy continues to grow significantly, although there has been a slowdown in recent years. Between 2008 and 2013, the phenomenon covered on average of 55 hectares per day, between six and seven square meters of territory that were lost every second (Source: ISPRA Istituto Superiore per la Protezione e la Ricerca Ambientale, Il consumo di suolo in Italia, 2015).


6. Some concepts in the following paragraphs have been deduced and developed from my publication: Favargiotti S. (2016). Airports On-hold. Towards Resilient Infrastructures (Trento: LIST Lab).

7. Javier Mozaz defines these operations as Re-processes whose aim is to intervene on the world that is already built Mozas J. (2012). ‘Remediate, Reuse, Recycle. Re-processes as atonement’. In Reclaim. Remediate, Reuse, Recycle (a+t architecture publishers), 39-40: 25.

8. See Ricci M., op. cit., p. 73.

9. Among other projects, it refers to a sequence of events, projects and exhibitions including: Convertible City. Modes of Densification and Dissolving Boundaries (German Pavilion, Venice Architecture Biennale, 2006); Vacant NL (The Netherlands Pavilion, Venice Architecture Biennale, 2010); RE-CYCLE. Strategies for Architecture, City and Planet

11. Ibid., p.15.
12. Ricci M., op. cit., p. 73.
RECOVERING PLACE IN THE ARCTIC

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KEYWORDS: arctic, mapping, place, transect walk.

Most literature on Arctic development starts with the rapid changes occurring in the region due to climate change. Nowhere are the effects of global warming felt more acutely. This affects fragile ecosystems, but also the communities that are described as “victims” of climate change. Generally, Arctic settlements are inscribed in a “development” or “frontier” discourse in which they are observed and designed from elsewhere. In this discourse, their appearance reflects responses to exterior forces, and their inhabitants have little or no agency of their own. Arctic settlements are seen as extraordinary – either as socially and economically underdeveloped communities of indigenous populations that rely on regulation and support from (southern) national states or simply as unregulated industrial settlements or “company towns” that are exempted from regular rules and legislation. This last perspective is on the rise due to the projected wave of industrialisation in the region as the rising worldwide resource demand leads to the opening up of more economically marginal extraction areas. This is made possible by changing sea ice patterns which open up the Arctic for shipping, mineral prospecting and resource extraction (see, e.g. Arbo et al., 2013; Smith, 2011).

The colonial history of the region is evident in many ways. While empowerment and self-government have increased in parts of the Arctic, paternalistic voices still proliferate and post-colonial resentment and resignation are also evident in many places. This has consequences for community development, which is seen as necessary by outsiders, but is often considered to be outsiders’ business by locals. Adding to this problem is the increasing transient population of the region, including imported miners or seasonal employees in other industries. They are not regarded as having a say in the development of place, despite their obvious “citizenship” in the landscape, especially in the wholly transient industrial or tourist settlements of the region.

The architectural and urban planning legacy of colonialism has been well documented in many regions, but no systematic record of this dimension exists for the Arctic. In the period after the Second World War, particularly from the 1960s, Arctic communities were, as architectural historian Rhodri Windsor Liscombe argues about the Canadian Arctic, ‘site[s] of utopic imagining and dystopic intervention’ (2006, p. 64). At the peak of architectural modernism, colonial contexts, including the Arctic, were subjected to grand experiments in ‘modernisation through architecture’. Even under the ensuing criticism of modernism, in the form of an anthropologically inspired structuralism with an increasing focus on everyday life-worlds, a lingering notion
of architectural determinism still pervaded. In the Arctic, this is evident in the writings of British/Swedish architect Ralph Erskine. While his proposals for settlement designs in the Scandinavian and Canadian North paid lip service to the desires and aspirations of locals, and despite their “softened” architectural language, they were still ultimately modernist in their proposals for utopian “place-less” designs of settlements (Hemmersam, 2016; Liscombe, 2006; Marcus, 2011; McGowan, 2008). (Figure 1)

The climate-adapted architecture of Ralph Erskine is still widely seen as archetypal (e.g. Birk, 2012), and even today, no competitive alternative models for Arctic settlements have emerged. A contemporary derivative of his ideas is found in the Winter Cities movement (Pressman, 2004), which is ‘a design and behavioural approach’ (Davies, 2015, p. 307) that ‘attempts to reduce winter’s negative consequences and to emphasise its positive features’ (ibid., p. 278). While seemingly sympathetic in pursuing liveable urban environments for inhabitants, this approach nevertheless echoes Erskine’s outsider’s view on settlements in the region and his fundamentally colonialist call for an Arctic architecture that ‘attract[s] engineers and technicians and their wives’ (1968, pp. 166–67).

Erskine’s idea of a new utopian architecture reflected modernism’s disregard for local preferences and desires, and he ‘found it difficult to reconcile the northerners’ love of their forests, rocks and islands with their longing for southern ways’ (Erskine, 1968, p. 166). Illustrating that this modernist perspective still dominates the discourse on Arctic cities, Kjeld Vindum, editor of the Danish journal Arkitektur, recently complained that the ‘poor international mainstream architecture’ (2012, p. 3) emerging after Greenland’s home rule was inferior in its concern for local context compared to the colonial architecture from the 1950s and 60s that displayed ‘a sincere effort to address the unique climatic and topographical conditions and the Greenlandic lifestyle and culture’ (2012, p. 3). (Figure 2)

In recent years, the emerging dynamics of the region has again attracted the attention of architects, such as the Danish contribution to the 2012 Venice Biennale of Architecture on Greenland (Lima et. al, 2012) and the 2014 Canadian exhibition in the same place celebrating the 15-year
anniversary of Nunavut. In addition, numerous schools of architecture and landscape architecture have focused on the Arctic, including the University of Virginia, Columbia University and the Royal Academy in Copenhagen. At these institutions, design studios have engaged in variations on speculative design driven by the “extreme” parameters of the environment and often bear little evidence of input from locals.

PLACE IN LANDSCAPE URBANISM

The abstraction of modernism was criticised by postmodern architects and theorists as a 'tyranny of space' (Venturi et al., 1972, p. 148; see also Augé, 1995; Relph, 1976). They insisted that the more intangible notion of “place” should be addressed as the key dimension of people's identification with a given location. This was specifically the program of critical regionalism (Frampton, 1983; Tzonis & Lefaivre, 1990), which emphasised the role of local climate and topography as key moderators of modern architecture, often with a focus on the tectonics and materiality of the architecture.

Today, critical regionalism has largely been outflanked by diverse forms of neomodernism that celebrate the transformative role of globalisation in cities. Architectural historian Mari Hvattum calls the static regionalist conception of place in architecture the “tyranny of place”, and claims that it has inherent nationalistic and essentialist currents and relies on geographic determinism (2010). Hvattum echoes geographer Doreen Massey’s notion of place as being neither fixed nor spatially bounded. For Massey, places are ‘articulated moments in networks of social relations and understandings’ (1994, p. 154), which results in a ‘sense of place which is extroverted, which includes a consciousness of its links with and dependencies of the wider world, which integrates in a positive way the global and the local’ (1994, p. 155).

Landscape urbanism as a discourse emerged in the mid-1990s and can be traced to postmodern architectural thinking and the critique of the abstraction of modernism (Waldheim, 2016). The development of the field also represented a move away from the ecological modernism that had dominated landscape architecture, while simultaneously echoing the foregrounding of environmental thinking and, more recently, climate change adaptation and mitigation strategies in the
design and planning of cities. This intersection of landscape architecture and architectural urban planning is both a post-modern and a materialist alternative to the strict modernist division of landscape and city. It differs distinctly from critical regionalism by seeking entirely new strategies and designs for place creation, rather than relying on traditional forms and tactile design strategies.

As an experimental and culturally informed planning proposition, landscape urbanism is rooted in the recognition of the indeterminate or uncertain future of any location undergoing change and the need to develop design strategies to accommodate such uncertainty. An associated development in the 1980s and 90s was the emergence of ‘strategic urban planning’ (Albrechts et al., 2003; Healey, 1997), which sought to develop governance-based planning policies that were processual and no longer relied on predefined “ideal” end goals for urban development. This approach emphasised the unfolding interplay of actors, institutions and the public, and sought the release of trans-sectorial energies and potentials through selected strategic projects. These projects often take the form of public space upgrades that then “trigger” private investment and initiatives from other sectors, which are all seen as parts of a wider effort towards urban cultural and economic development. This mirrors concerns in landscape urbanism for what Charles Waldheim calls ‘urban effects’ (2016: 13) and for indeterminacy of use and ‘processes over time’. His perspective mirrors James Corner’s insistence that the urban landscape should be seen as a ‘living arena of processes and exchanges over time’ in which ‘shifting processes cours[es] through and across the urban field: *terra fluxus*’ (2006: 30).

Strategic urban planning echoed in a wider trend of turning away from the social sciences as the sole underlying ontology of planning. In landscape urbanism, we find a turn towards a new materialism in which landscapes and their constituent processes and elements are seen as having agency. Bringing landscape structures and processes to the foreground of city planning may result in the release of energies beyond ecology, exemplified by the numerous river opening or brownfield regeneration projects in recent years that have had profound effects on urban life and vitality.

In strategic urban planning, the aim of achieving synergy between actors across various fields has a distinct cultural dimension, and a similar claim can be made for landscape urbanism, where place creation through material and social dynamics becomes important as a cultural perspective. In landscape urbanism, this processual dimension is accompanied by an interest in regional systems of ecology, water, infrastructure etc. The intention of opening up and including any site in regional systems mirrors Massey’s insistence on an extroverted sense of place, rather than the essentialist or phenomenological notions of place espoused in critical regionalism. In landscape urbanism, such open design and creation of place is linked to the value of recognising global or at least regional dimensions of any given location, including the material and cultural agency of these scales and the multitude of place definitions held by a multiplicity of actors, both within and outside a location.

**TUNDRA URBANISM**

Arctic cities and settlements come in many different configurations, from highly urban post-Soviet industrial cities to coastal fishing and hunting settlements. Generally, they do not conform to standard Eurocentric models of cities. For instance, the agricultural element in an urban–rural transect is absent, and densities do not conform to standards outside the region. Also, in many cases European (and North American) models for urban regionalisation are simply not feasible due to the lack of connecting infrastructure and distances between settlements.

Central to landscape urbanism is the development of strategies for restructuring sites of modernisation and/or de-industrialisation. In the current era of climate change effects materialising in changing patterns of sea ice, fish stock habitats and territorial industrialisation, nowhere changes faster than the communities in the Arctic. The contingency of this situation mirrors the concern in both landscape urbanism and strategic urban planning of developing new forms of urbanism that
respond to uncertainty and change. Based on this parallel, it is appropriate to ask what relevance landscape urbanism approaches hold for landscapes and cities in the Arctic.

To answer this question, we can start with the constituent roles that landscape and natural resources play in Arctic communities, whether they rely on fishing, sustenance hunting or resource extraction. In addition, core concerns of Arctic urban planning include various landscape-related forces, such as the extremes of wind, water or snow, the hazards of avalanches and erosion and the challenges of permafrost construction.

A further parallel between the two discourses is the prevalence of post-industrial landscapes as a field of operation, which was the initial breeding ground for landscape urbanism in North America. In the Arctic, developing responses to industrialisation is rapidly becoming a pressing issue, and many communities are also facing either de-industrialisation or new industrialisation, depending on fluctuations in the world’s mineral markets.

Another subject matter of landscape urbanism is the development of strategies for shrinking cities that lack the kind of growth that still constitutes an underlying premise in traditional forms of urban planning today. This condition is also present in many arctic communities, as a policy-based, but also culturally inspired, impetus for urbanisation and centralisation has led many smaller communities to contract. De-industrialisation also plays a role in this phenomenon, for instance, in the way the regionally important fishing industry is centralising.

The primacy of infrastructure as a territorial organiser in landscape urbanism theory and practice (e.g. Allen, 2007; Bélanger, 2016) also seems to be relevant in Arctic settlements. Here, infrastructure is visually very evident in settlements due to permafrost and the limited supply situation in many parts of the Arctic, which means that communities have to be self-contained for extended periods, as no regional system plug-in is feasible.

While these overlaps between the landscape urbanism agenda and Arctic urbanism make it assertable that theories and practices are transferable, landscape urbanism is obviously developed and practiced elsewhere, with a distinct set of priorities and agendas not necessarily found in Arctic settlements—which also differ significantly among themselves.

**MAPPING NON-STANDARD SPACE**

The premise of this paper is that certain aspects of landscape urbanism practice and theory have parallels in the Arctic context that call for further inquiry. This includes the specifics of design strategies that are based on a close reading of local conditions and an overall search for innovative and different models for place creation in places that do not conform to classic models of urban space. Such close site reading includes the materiality of the landscape and its processes of change, as well as reassessing infrastructure as the very opportunity for place creation in entropic (or in the Arctic, isomorphic), non-standard urban landscapes.

Building site knowledge involves forms of mapping. Mapping in postmodern architectural culture was inspired by the “representative turn” in the social sciences (Harley, 1988; Wood, 1992) in which maps are seen as social constructions. More recently, mapping has been inspired by non-representational theory, including “the material turn” in geography (e.g. Bennett, 2010; Nyseth & Pløger, 2015). What these postmodern perspectives on mapping share is the view that ‘urban and cartographic spaces are entwined’ (Brook & Dunn, 2012, p. 11; see also Cosgrove, 2006), and that ‘mapping [is] a collective enabling enterprise, a project that both reveals and realizes hidden potential’, thus ‘creating and building the world as much as measuring and describing it’ (Corner, 1999, p. 213). In fact, according to James Corner, mapping has agency in uncovering realities previously unseen or unimagined, even across seemingly exhausted grounds. Thus, mapping unfolds potential; it re-makes territory over and over again, each time with new and diverse consequences’ (1999, p. 213).
Maps and mapping have begun to fill a number of roles beyond geographic modelling and territorial control, including mappings that are ‘participatory, generative, revealing, enabling, performative’ (Hall, 2012, p. 157). Tracing its lineage to the psychogeography of the Situationsists (Debord, 1958) and recognising its inherent agency, various contemporary forms of architectural mapping deliberately include a variety of dimensions in the activity, including the serendipitous, the material, the mediated and, not least, the cultural (see Hemmersam et al., 2012; Hemmersam et al., 2015). In landscape urbanism, various mapping practices have been employed, including ones that link social processes with ecological concerns in the study and design of city and landscape (Corner, 1999), moving beyond the modernist separation of the cultural, social and material spheres. In recognising the agency of mapping and the reiterative character of any mapping of dynamic processes, such practices also move beyond fixed, essentialist and phenomenological place relationships. They include critical approaches to finding and establishing new identities in situations where standard urban models and planning modes do not apply and where de-industrialisation and de-population call for entirely new approaches and innovative suggestions for establishing a sense of place.

**FINDING PLACE IN THE URBAN LANDSCAPE**

According to critical regionalism protagonist Kenneth Frampton (1995), while globalisation sometimes has devastating consequences for cities, landscape, he argues, has a remediating role to play in maintaining a sense of place. The following question thus arises: How does landscape address the question of a “sense of place” in ways planning and architecture are incapable of?

Ian Thomsen argues that one of the core tenets of landscape urbanism is to make the ‘invisible visible’ (2012; see also Amoroso, 2010). This represents the continuation of the tradition of landscape mapping stemming from Ian McHarg (1969). While still occasionally invoking functionalist ecology, landscape urbanism has essentially abandoned it as its core ontology in much the same way that planning has deviated from the social sciences. Various mapping practices within the landscape urbanism field have emerged as alternatives to the “scientific” modernist ecological planning that aspired to ever-increasing accuracy and complete models of any terrain to inform (top-down) decision making. This implies that the “visible invisible” may be natural phenomena, objects and processes as well as the social and emotional relations between people and a given location.

Corner argues that architectural mapping contributes to ‘diversify worlds’ (1999, p. 149). This is akin to Massey’s insistence that sense of place cannot be reduced to single identities, but rather that even within the same community people have different positions and a diverse “sense of place”. Therefore, places have many distinct identities. Massey also argues that notions of place are not spatially bounded but extroverted and includes an awareness of the various networks that the places are part of. This echoes the premise in landscape urbanism of mapping and designing any site in its regional context, which follows Corner’s observation that ‘ideas about spatiality are moving away from physical objects and forms – towards the variety of territorial, political and psychological social processes that flow through space’ (1999, p. 227).

Finally, any mapping of place necessarily also involves the emergence of place. According to geographer Tim Cresswell (2004), the questions of what place is and how it can be mapped are closely connected. For Cresswell, place is not a thing, but a way of understanding the world. This tangledness of mapping and place making is the proposition of this paper.

**TRANSECTING ARCTIC CITIES**

The changing approach to urban landscapes represented by landscape urbanism required new modes of representation, of which aerial photography, dynamic diagrams and maps are among the most prominent forms. Drawing from such methodologies and proceeding experimentally, we
have examined how settlements and landscapes of the Arctic can be documented and conceptualised in ways that avoid standard (colonialist) approaches. This has happened as part of a wider research project called Future North in which we have sought to find approaches that ascribe agency to local populations and landscapes in thinking about the future.

According to Corner, ‘the agency of mapping lies in its cunning exposure and engendering of new sets of possibility’ (1999, p. 251). Our mapping approach was inspired by Raoul Bunshoten’s Urban Gallery methodology (Bunshoten et al., 2001). Corner describes Bunshoten’s approach as ‘informed by a kind of street-level ethnography that is often highly personalized and peculiar to places and individuals. In this way, the field-worker/mapper gains a remarkably detailed and socially colourful sense of local dynamics and desires’ (1999, p. 243).

Our version of ‘street-level ethnography’ employed a redevelopment of the Urban Transect Walk, resulting in a kind of physical, sensory walk (Pink, 2007). The Urban Transect Walk is a participatory method that deliberately cuts across the urban landscape in order to capture diversity rather than averages (Henk & Wilbers, 2004). It is used for appraising local economies in cities in the South by organisations such as UN Habitat and the World Bank, where it functions as an alternative to survey-based forms of mapping (e.g. Pretty, 1995).

Our mapping of five Arctic cities took place between September 2013 and May 2015, and included Murmansk (Russia), Vardø (Norway), Tasiilaq (Greenland), Fermont (Québec/Canada) and Longyearbyen (Svalbard/Norway). Each mapping iteration was a variation of the previous ones. In total, eight mapping sessions were conducted, and responding to local conditions and earlier experiences, we tried different routes, reversing directions and mapping individually, in teams and with locals. For documentation, we employed our GPS-based and social-media-enabled urban mapping tool, which allows for shared text, image- and hashtag-based annotation (like Instagram) in discreet mapping sessions. This tool also allows us to create digital maps (KML format) that can be downloaded for post-processing. (Figure 3)
Along the transect walk, we observed and annotated phenomena with images and text. Our diverse range of academic backgrounds (an architect, literary scholar, design researcher and social scientist as well as students of landscape architecture) brought out varying perspectives on what we observed, and revealed what aspects of the urban space were important to each of us. Thus, the transect walks provided observational data; more importantly, however, they provided a platform for exchange between researchers and local informants.

**CREATING PLACES**

The mapping sessions provided us with a rich introduction to the given locations and enabled the cross-disciplinary team to jointly observe and co-narrate aspects of the place. Our walks transected the cities from periphery to centre, but in practice we were drawn to observe and document phenomena beyond the line. Thus, the line is a tool that draws in a wide set of phenomena (objects, views, events), while still being highly selective. The obvious randomness of the transect line underlines the arbitrariness of any map-producing activity. In our approach, there was no pretention of comprehensive mapping; rather, serendipity and encounter were emphasised as key dimensions of the activity. (Figure 4)

Our approach involved embodied knowledge generation, in which seeing and conceptualising were entangled. It revealed the agency of the mapper, and faced her directly in confrontation...

**FIGURE 4.** Excerpt from transect journal. Longyearbyen (Svalbard), May 25, 2015.
with the physicality of the urban landscape (as when jumping from snow bank to snow bank over the Longyearelva River in Svalbard or encountering the smell from a highly polluted river on the outskirts of Murmansk). It also worked to expose our individual and collective “luggage” of preconfigured ideas (see Traganou, 2009) – ideas we often found pertained to urban settings elsewhere, but still coloured our perception of place.

The mapping activity was part of wider efforts to build site knowledge based on a variety of sources and local knowledge. The mapping activity also extended beyond the actual walk, including both previous knowledge and research as well as post-mapping mediation and uptake in design development. On several occasions, the mapping also involved informants – either as mapping companions or as casual encounters along the walk. This provided insight into local imaginaries and aspirations. The knowledge collected during the mapping formed the basis for further dialogues with locals, and also functioned as input for educational design studios. The resulting work and our reflections on site were communicated back to the community in online posts, booklets and exhibitions. Thus, our mapping enabled both our own sense(s) of place and those of locals. In this approach, we find a multiple sense of place that means that we have ‘diversified worlds’ (Corner, 1999).

The speed and scale of change in Arctic communities seem to mirror the radical consequences of deindustrialisation in North American and European cities that started landscape urbanism. Through our encounters with Arctic communities using mapping, we have learned that urban life here is remarkably similar to what one finds anywhere, indicating that perhaps settlements in this otherwise extreme region are “just” places and settings for everyday life like everywhere else. This calls into question the current planning practice of modernisation, and also calls for the development of a true place-specific urbanism – one that includes both the agency of populations and landscape; that recognises the variety of ways in which places are co-produced; and which ensures an open and relational concept of place can include locals, outsiders and the landscape itself in formulating multiple futures in a rapidly changing, industrialising and urbanising Arctic.

In conclusion, we think that it is important to further develop non-representational and architectural forms of mapping that focus on how place is enacted. The action of mapping itself is a vital part of this activity.

ENDNOTES

1. For example, as reflected in the Grenlandic policy of allowing mining corporations to set up workers’ camps that are partially exempted from national social and work legislation (Ittisaritutlov nr. 25 af 18. december 2012 om bagte- og anleggsarbejder ved storskalaprojekter, 2012).
2. On landscape citizenship, see, e.g. The European Landscape Convention (Council of Europe, 2000).
4. www.futurenorth.no
5. The tool is called MAPPA: https://itunes.apple.com/us/app/mappa-collaborative-tool-for/id578620293?

REFERENCES


THE URBANISED RURAL

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Urbanisation is still understood largely as a one-directed process of people and industry moving to larger cities, causing de-popularisation of rural areas. City growth is an obvious tendency and has rendered “the urban” a normative political role in planning and governance. Uneven geographic development escalates in Sweden like in several other countries and increase needs to improve adequate local-regional planning practice for development and transformation. Cities and the urban have become idealised as models for living, production and consumption and tend to detach rural and sparsely populated areas as something essentially different.

However, this is a severe simplification. Many contemporary changes of rural areas may originate in cities, and could be regarded as extended colonisations of the rural by cities, but mainly marks a shift since early industrialism concerning regionalisation. From start it was a process that dissolved city-countryside dichotomies, and both current and earlier planning practice in Sweden have involved “urban” and “rural” areas of extensive variation and diverse forms. Simplified understandings of the term urbanisation still neglect regional interdependencies, exchanges and connections but with ecology and global economy it is obvious that the processes of urbanisation have two-way directions, connecting and affecting both cities and rural landscapes. Hence, regarding regions as integrated planning contexts in a wide range of environments, we ask: What does a more complex understanding of urbanisation mean for planning and its related discourse?

URBAN GROWTH PERSPECTIVES

Standard growth perspectives are still projected as spatial norms onto more sparsely populated areas, relentlessly stigmatising some regional parts as losers in municipal competition, running the risk of being conserved mainly as natural resources or leisure locations serving city life, or as unspecific, “passive” surroundings. City growth through market oriented competition has been the issue of critical research and partial revision, but centralised outsets continue to drive a metropolitan-hinterland dichotomy as the basis for regional planning, and reproduce traditional models for “city”, “town”, “density”, etc. The dense, mixed city is (scientifically unproven) often claimed to support sustainable development within the paradigm of economic growth, and projected onto a diverse range of spatial conditions. This maintains inherent power hierarchies and even conserves the verbal status between centre and periphery, town and rural surroundings etc. Compartmentalisation – what we call “containerism” – adds to local-regional planning rivalry where collaborative use of resources, competences and services across territorial borders could be both environmentally and economically more beneficial. Behind these problematic planning conditions lingers a conventional understanding of “urbanisation” as a one-directed process, as
if nothing has happened with the rural since depopulation began or as if Henri Lefebvre never wrote *La revolution urbain* (1970).

Increasing spatial complexities and development diversity necessarily question what a broadened understanding of urbanisation means for planning. We will follow some of the current critique, mainly as formulated by political scientist/urban theorist Neil Brenner and sociologist Christian Schmid (2013a, b), and based on our own studies of urban-rural areas and Swedish planning practice we will discuss how urbanisation as an inclusive process can support contemporary planning, set in relation to “regionalisation”. Connecting to some of Brenner’s and Schmid’s suggestions for additional investigation we hope to open a discussion on possible shifts in understandings, planning approaches, discourse and methods.

**CRITIQUE OF THE URBANISATION CONCEPT**

Already in the 1990s, Thomas Sieverts provoked traditional “compact city” ideals in his studies on *Zwischenstadt* and the diversity of urban-rural landscapes that constitute large parts of environments today (Sieverts 1997). Sieverts convincingly argued that this international phenomenon closely connects to the concepts of landscapes and settlements, related to resource use and understandings of contemporary everyday life forms. The English title *Cities without Cities* (2003) stressed that traditional “urb” formations are challenged by new perspectives on “urban-ness”, with references to centrality, density, periphery etc., as well as on ecological socio-economical, cultural, political, design and planning aspects from these new spatial understandings.

Several followers with similar argumentation should also be mentioned, for example Sievert’s colleagues and publications in the *Zwischenstad series*, studies at ETH Studio Basel by Roger Diener et al (2006) on wide-ranging understandings of Swiss urban landscapes, GUST (Ghent Urban Studies Team, 1999), works by Edward Soja (1996, 2003), certainly the landscape urbanism movement triggered by James Corner and Charles Waldheim in the 1990s, and urban architects Dana Cuff, Roger Sherman and the Los Angeles cityLAB, (Cuff and Sherman 2011). Within Scandinavia we may refer to the research group in Aarhus around Urban Mutation (2004), researchers at Landscape Architecture in Copenhagen (Braae 2015, Tietjen 2011) or Bosse Bergman’s extensive studies on Swedish roadscapes, e.g. in E4-staden (2008). The literature today is massive.

Brenner and Schmid (2013a, b) launch a broad understanding of urbanisation as complex socio-spatial processes conditioned by global economy. They criticise views on urbanisation as one-way demographic movements and argue, similar to for instance Sieverts, that urbanisation as a theoretical concept may encompass a wide range of environments, where “the urban” and “the rural” are deeply entangled in multifaceted ways. In their article ‘*Urban Age in Question*’ (2013b), Brenner and Schmid argue that ideas of one-way movements and a majority of world population today living in cities is a partly misinterpreted trope conserved by dominating institutions like the United Nations, London School of Economics, Deutsche Bank etc. Such factoids, based on demographic statistics, were debated for relevance already in the 1950s, reaching back to critical studies from 1937, but still remain as “truths” defining urbanisation and “urbanised areas” in authorised statistics, academic research, book production and outsets in planning, especially from mid 2000s (ibid: 5-12). The authors show how ‘obviously arbitrary’ definitions of urban conditions and re-organisations have been maintained as ‘relentless dynamics of socio-spatial restructuring […] that’ have continuously reworked the boundaries, scale and morphology’ (p. 5).

Instead, urbanisation should consider ‘thickening webs of connectivity’, ‘unstable constellations of metropolitan social organization’ and ‘emergent worldwide horizons’ (p. 8). They also claim that ‘centers and peripheries are immanent within the accumulation of capital itself’ (2013b: 13, quoting Merrifield 2011), and that the idea of “Urban Age” is a chaotic conception:

*The basic problem is de facto sociospatial fluidity and relentless dynamism of the urban phenomenon under modern capitalism: its endemic tendency to explode inherited morphologies*
of urbanism at all spatial scales; to create new, rescaled formations of urbanized territorial organization [---] to promote the ‘urbanization of the world’ by intensifying sociospatial independencies across places, territories and scales.’ (p. 13).

The particular critique of the “Urban Age thesis” is that it (a) divides the indivisible in regions and landscapes (p. 17); (b) ‘lumps together unrelated and the inessential’ by ‘pervasive black-boxing of the rural’ and radically ‘overspecified urban’ (p. 18); and (c) that it neglects that the “urban condition” encompasses a vast spectrum of settlement conditions, ranging from small- and medium-sized towns to regional centres, metropolitan cores’ (p. 18).

REGIONAL URBAN-RURAL INTERPLAY
If urbanisation is general and involves all socio-spatial processes, affecting all areas and regions, can we then do away with specific categories of urban and rural conditions?

The Swedish word landsbygd, analogue to English “countryside”, literary means “what is not city” or “does not have city-like built structures” but also more neutrally denotes “part of the country” or “built areas” contrasting to “unbuilt areas” (SAOB 1939). Rural areas consist of a number of mixed landscapes: agricultural production, forestry, industries, sites for retail and service, meeting points and dwellings. Other parts are characterised by nature, tourist routes with associated scenery and narratives, expansions of towns and cities, and infrastructures of transecting roads, railways, transport nodes etc. Mobility related to work, leisure, tourism, goods etc. generates different patterns and demands. Production and industry in rural areas often display mixed features with ‘urban’ traits: agriculture also developing small-scale industry, horse-breeding, transportation contracting or vending etc. where incomes from agriculture can combine with jobs related to the service sector, industry or business.

Undoubtedly, depopulation of rural areas and increased city growth have characterised development in Sweden since the beginning of industrialism in the early 19th Century. National planning (Sw. Riksplaneringen) around 1970 responded to industrial decrease after World War II and aimed to balance regions with support to sparsely populated areas. In the last fifty years city sprawl has accelerated – mainly because of larger dwellings and increased mobility (digital as well as physical transportations of people, money and goods), with large parts of rural surroundings embedded in city regions, also expanded by new retail establishments at “hot” route connections, city outskirts and small towns. The general decline of industry and rising costs to maintain welfare pushed the public sector (state-municipalities) towards cooperation with market actors, culminating when more neoliberal orientated services, together with the ICT breakthrough in the 1980s launched the idea of “K-society” – communication, knowledge and creativity – in one package. Enlarged municipalities were given stronger roles in political governance, for instance with land use monopoly and school system’s authority. This opened for more business oriented management of the welfare sector and competitive municipal practices. Regional planning today is largely limited to well-defined sectors like traffic, infrastructure, environmental issues, education etc. Many regionalisation possibilities for exchange and synergy effects between sectors are being neglected, although this could support long-term sustainability.

Today almost all persons in Sweden, regardless of residence, are connected to “urban lifestyles”: We shop in city centres and malls, commute to work, communicate and consume through the internet. Work market and education are closely tied together; culture and leisure develop a range of entrepreneurial activities, and tourism embraces both distant and local visitors with shopping, events, culinary experiences and accommodation as important components. The traditional city (“urb”), with its concentrations of enterprises and banks, capital and various competences, is important to trigger economy, but criteria shift concerning qualities of everyday life. Migration into rural areas varies; people may value countryside life-style and accept longer commuting (though often desiring reach to larger cities); others see possibilities of dwelling and income in smaller
places. Land use and small industries in rural areas are often stabilised by being inherited into the next generation. Today, agriculture in southern Sweden, lacking work force, express needs for improved job status and new staff.

Regions differ in size, hierarchies, economic base, location in the nation and connections to other regions or national borders. As agents in (sociocultural) urban dynamics, interconnected at many levels and as variations of “urban landscapes”, regions may also be recognised as ‘fragile urban landscapes’, as discussed by Björling (2016). Metropolitan regions differ from those dominated by middle-sized cities or sparsely populated areas, but it is also a question of density structures: A regional area like Skaraborg in West Sweden shows a mesh of small towns and criss-crossing traffic routes: major transport corridors, railways, main roads, water routes and a web of smaller roads, often of old historic origin. If considered as a coherent domain of approximately 130x130 km, Skaraborg forms a “network city” with around 250.000 inhabitants, equal to the third largest city in Sweden (Malmö), but with its two largest “centres” of only about 30.000 people.

“Urban networks” can no longer be understood as neutral links between nodes, but constitute “connecting landscapes” articulated by shifting contents and formation. And landscapes along transport infrastructure are not merely “transport corridors” but scapes with certain character, preconditions, activities, potentials and transformative processes. Flexible traffical systems rapidly develop along with expanded diversity of transport – including adaptable combinations of vehicles, deliberative solutions, shared economic responsibilities and digital services (for instance Uber transportation) – often connect with other sectors or welfare services.

An economy – and ecology – as tourism is an example of today’s complex relational regionalism generating new administrative and business sectors, interdependencies, collaborations, networks, locations etc. with roots and motifs belonging both to “urban” and “rural”. Tourism as event and service industry may relate to historical sites (churches, castles, canals etc.), nature, food, accommodation, shopping, sports, narratives, crafts, restauration etc. Its roles for business and education increases with the thematic diversity (for instance event guiding, food crafts or local history courses), also including services such as tool repair, everyday food markets, material manufacturing and communication services, local farming products or industrial design. But it also profits from rural clichés, stereotyped for instance in Nordic Noir criminal movie settings in dramatic wild nature (with attached guided tours).

One example of the risk to not rethink the town centre norm and its relational aspects is Haparanda, a town located at the Finnish border in the very north of Sweden, which welcomed IKEA as an additional value. Haparanda redeveloped the town centre according to conventional norms as a dense mix of housing and commercial functions while the new mega-company was located in the outskirts by the throughway. The drastic consequence was that most customers went to the new commercial location, draining the town centre. With a more relational urban approach, free from the “city design norm”, a more flexible and sustainable model could probably have been developed. Another example is Charlottenberg in Western Sweden at the border to Norway. The municipality accepted a Norwegian multi-million investment to build a large shopping mall at the main highway connection, close to the old centre and its main street with small shops, housing and services. The new border retail was successful, and has partly generated more housing and enterprises, but to large extent the old main street is drained and closing down. Here planning could have acted more proactively – again thinking beyond the city norm – to recognise the new centre’s possibilities and transforming the agency of the old area.

POWER PERSPECTIVES
Urbanism refers both to a knowledge field related to architecture and planning, and socio-cultural aspects involving certain “urban” identity codes, still containing implicit power hierarchies between “urban” and “rural”. On the one hand we have the geo-political linkage of urban to “centre”
and rural to “margins”, bestowing centres the activating role while “margins” are understood as more passive in competitive global economy. Centres regarded as “hubs” project metaphors of driving wheels, central axes or “activating engines” in complex industrial machineries, or as intense meeting places for “creative class” gatherings, as launched by Richard Florida (Fredriksson 2014).

Since the 18th Century urbanity also signifies “high society” connected to diplomacy and international contacts, which spills over to “civilization” and modernity. But in more recent discourses on the urban, suburbs with “marginal” locations are often seen as “young” modes of thinking-acting, spaces of “less control” with connotations to incitements for conflict, creativity and renewal.

Socio-cultural anthropologist Arjun Appadurai (2000) argues that urban redevelopment processes contain a “double apartheid effect” for grassroot groups, which involves difficult power interplays. Firstly, he says, there are traps by the “community of assessment” where standardised validation proceedings and quality criteria, measurement systems and ratings legitimise certain research values, investment alternatives etc. Secondly, communities or organisations with weak resources must be able to connect the double systems of glocal: They must gain local trust, often enacted on site, in real physical contexts and pragmatic time perspectives, with expected concrete results. But they must also be able to handle the global perspectives and its communication forms in terms of technology, values and discourse. This, Appadurai argues, raises urgent needs for much stronger ethical stands and critical discussions within academy as well as professional practice, and calls also for more imagination, virtuosity, pedagogic skills and activism.

WHAT TO DO

Concluding their Urban Age examination, Brenner and Schmid suggest needs for additional knowledge, here briefed in selection, indicating knowledge gaps for further research and practice approaches: (1) The urban and urbanisation are theoretical categories – the need for conceptual abstractions. (2) The urban is not a universal form but a historical process – needing studies on continual sociospatial transformation, changing settlement types and morphologies for entire territories, not only limited “points” or “zones”. (3) The sociospatial dimensions of urbanisation are polymorphic, variable and dynamic – needing new cartographies and understandings that move away from ‘settlement-based understandings of the urban condition’. (4) Urbanisation involves both concentration and extension – needing studies on ‘densely tangled circuits of labor, commodities, cultural forms, energy, raw materials and nutrients’ and ‘webs of relations to other places’. (5) Urbanisation has become ‘a planetary phenomenon […] there is no longer any outside to the urban world’ – hence the need to rethink ‘urban/rural binarism’ and question it as ‘increasingly obfuscatory basis for deciphering the morphologies, contours and dynamics of sociospatial restructuring under early twenty-first century capitalism.’ (6) Urbanisation constantly produces new differentiations – the need to re-examine patterns of differentiation and varieties in urbanisation processes. (7) A new vocabulary of urbanisation emerges – needing ‘new analytical approaches, methods and concepts, including experimental and speculative ones, as well as visualizations of evolving sociospatial and sociometabolic conditions […] a new lexicon of urbanization processes and forms of territorial differentiation’ (2013: 18-22).

The aspects of urban norms – both as design conventions and as general theoretical-conceptual understandings – need to be discussed much more, beyond the surface and disciplinary boundaries but with knowledge depth in planning, governance, landscape and architectural perspectives. At the centre of interest stand the regions, understood as broad, relational potentials and diverse landscapes of urban and rural character, structures, networks and processes. These diverse regions need more qualified descriptions, thematic and relational mappings and systemic analyses that recognise changing administrative sectors, interdependencies and collaborations, networks, links, environments and agencies of interest – including the power struggles, capacities and potentials that go with it.

So, architecture and planning friends, there is a lot of work to do to bring about new understandings and planning practices of regionalisation and develop new ways to deal with the local-
regional. For instance: Brenner’s and Schmid’s broad criticism needs to be reflected by Appadurai’s radical renewal of anthropological perspectives and by recent studies in the Sievert’s tradition. Media stereotypes must be re-examined, partly by revisiting planning history. Key concepts must be developed for more relevant discursive and practice agency. And planning practice must use complex architectural-designerly and cross-disciplinary thinking to explore wider logics and effects for systemic, spatial rethinking of regions.

REFERENCES
DEEPENING SHALLOW FORM: RENEGOTIATING LANDSCAPE AND INFRASTRUCTURE IN THE SAHEL

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KEYWORDS: infrastructure, landscape, urbanism, deep form, climate change.

INTRODUCTION
This design led investigation attempted to answer the question of how landscape architects might work to address the increasingly urgent challenges of climate change in the Sahel region of Sub-Saharan Africa, an area experiencing some of the most drastic urban growth anywhere on the planet. Situated around the discourse of landscape based approaches to urbanism, it has sought to challenge the narrative of the insensitive foreign expert implementing expensive and inappropriate solutions, and argues for the potential of working with infrastructural intervention as a means to induce systemic change through strategic projects. More specifically, the central questions presented here ask how landscape architects can work to apply their professional skills towards addressing the impacts of climate change being felt with disproportionate strength across the Global South. Using the hydro-agricultural infrastructure of Mali as an example, this discussion identifies one way in which landscape based methods can be used to expand the capacity monofunctional, rigid, and fracture-critical infrastructure systems with relatively modest intervention. It does not ask why landscape architects should interject with their expertise into the South, but how one might do so in order to address, avert, or mitigate the significant risks that arise out of inaction.

FRAMING THE INVESTIGATION
The research for this project began by identifying the Sahel as a region for further study due the intensity of the environmental and demographic challenges which arise there. Fittingly derived from the arabic word for “shore”, the Sahel refers to the semi-arid zone of transition between the Sahara Desert to the North, and the Savannah plains to the south. Receiving ~200-600mm of precipitation yearly during a very short wet season, the Sahel is an expanse of territory defined by climate rather than lines of political jurisdiction. As such, this region has had stable yet fluid borders due to the large swings in precipitation over long time periods, and within the annual cycle of wet and dry seasons. While understanding and working with political jurisdiction is critical to actually delivering designs into built form, it is the patterns of seasonal rains and river flow determined by basic physical and chemical processes which drive the rhythm of life in human settlements and their larger ecological surrounds in the Sahel. These are reflected not only in the adaptation of organisms, but in the evolution of ethnic groups distinguished by relationships with specific elements of this dynamic region, from sedentary farmers growing dryland crops or cultivating rice (Bambara and Rimaibé), nomadic herders moving with seasonal rains (Fulani), and communities with livelihoods based on fishing (Bozo and Bambara). While historically distinct,
these various communities have relied upon close interaction and trade to form a cultural complex capable of reacting and adjusting to extreme shifts in climate, where the ebb and flow in the prominence of various kingdoms and trading empires have occurred in tandem with periods of abundance in rainfall or drought. With agricultural modernization and redistribution of power to distant urban regions, the habitual practices of these different groups have begun to drastically change, seeing people transition from specific areas of expertise into a mix of general practices including aspects of fishing, farming, and crop growing in order to meet their needs.

These abiotic, biotic, and cultural processes work at the regional level to organize investigation and research by allowing for the identification of critical patterns which can be more difficult to discern from the scale of the site. In this case, the large scale framing of long term and inter-annual levels of precipitation that define the Sahel are understood best in the context of the equatorial low pressure system of the Intertropical Convergence Zone (ITCZ) that is responsible for the wet seasons. Working within a large-scale framework acts to challenge the bias that can arise from strictly local observations. For example, recent research links the severe drought experienced across the of the late 1970’s and early 1980’s with the subtle changes in global sea surface temperatures, rather than over-grazing and intensification in land use which were long assumed to be the primary factors. Further research also indicates a new state of more erratic precipitation patterns, correlated to ocean warming pushing the ITCZ southwards, which are of critical importance in crafting projects which anticipate and properly address the effects of climate change into the future. Revealing the relationship between these processes to physical form provides a means for unifying work across scales of time and place, in this case using hydrological structures to move from these strategic issues that occur across the four major watersheds of the Sahel inwards through individual river sheds and into localized catchment areas that can engage with the details of context specific to a specific place. As part the larger dialogue on landscape urbanism vis-a-vis infrastructural systems, Pierre Belanger has argued for this approach of ‘sliding across scales’ to engage fully between the territory and the site. This research worked to use this methodology specifically to identify points of tension between underlying operational logics of physics, ecology and related cultural traditions, with the super-imposed order of modern infrastructure systems extended across territorial scales which explicitly service urban regions.

The agricultural complex of the Office du Niger (ON) located just upstream of the Inner Niger Delta in Mali represents such a point of tension, as it diverts a steady flow of water from the Niger River which amounts to less than 10% of the yearly flow, but from 60-80% of the river’s water during the dry season. Established under French colonial administration prior to 1950, the ON is the articulation of urban influence extended into the periphery, where large swathes of land were to be brought into production explicitly for the purpose of serving an export based economy within Mali to supply French textile and manufacturing industries. Cotton, rubber, sugarcane, and rice crops were the primary targets for this new area of production, with forced labour and re-settlement of people from across the region as the initial means of building the system of agricultural production at lowest cost to the administration. Through his surveys during 1919-21, French engineer Émile Belimé identified fossilized branches of the Niger River leading into derelict alluvial floodplains rich in fertile sediment. His plan called for these areas to be brought back to life with a barrage that would create a reservoir along the river, raising water levels enough to restore flow and irrigate up to 1 million hectares. The artificial regulation of water flow of the Niger River which began in 1946 with the completion of the Markala Barrage, and the top down form of administrating agricultural lands, has continued following the independence of Mali in 1961. Development of the area has been slow, and by the turn of the century some 100,000Ha were under irrigation, yet numerous large-scale expansions are currently underway that will see cultivated lands triple to over 300,000Ha by 2040. Since independence, cotton and rubber have been abandoned in favour of Asian rice varieties and sugarcane as the primary planting strategy, both of which are highly susceptible to drought and require great amounts of water to thrive.
THE FORM OF INFRASTRUCTURE
The performance of this infrastructure is at odds with the prevailing logics of the Inner Niger Delta, a crucial wetland habitat the size of Belgium which is flooded by the Niger River swollen from seasonal rains in its Southern headwaters. This incredibly rich and diverse ecosystem provides critical overwintering habitat for millions of European birds and waterfowl, and acts as a bulwark against the encroaching sands of the Sahara directly adjacent to its North. It is a critical resource for its 1.5 million human inhabitants, and in supplying the rest of land-locked Mali with 50-100,000t of fish annually and over 50% of its domestic rice supply. The fluctuation of river flow responsible for the inundation of the Delta varies significantly, flooding anywhere from \(8000\text{km}^2\) as seen during the drought of 1984, to well over \(36,000\text{km}^2\) in 1957. As the wettest of the past 45 years, 2016 has seen \(25,000\text{km}^2\) flooded, yet this would be considered only an average year in the 50+ years of records prior to 1968. The floodwaters rise as much as 6m, sustaining rich biological activity well into the dry season, and function as an engine of socio-economic development for the region. Fishing, river trading, movement of livestock, crop varieties and growing techniques endemic to this area are all tailored to this annual ebb and flow to form a highly managed ecosystem. The traditions of architectural form in the settlements occupying the highgrounds of this area, along with the patterns of agricultural activity shaping the land present examples of what John T. Lyle calls “Deep Form”, where the physical shapes and structures are reflective of underlying ecological process. Building on this notion, Kongjian-Yu argues that traditional farming tactics in particular, developed through trial and error over long periods of time, ‘illuminate the underlying basis for deep forms as expressions of compromise between nature and human desires, balancing natural processes and cultural intervention’. In contrast, the modus operandi of the current food production system has little to no active relationship with the basic operational logic of the area and its dynamic hydrological rhythms. It is a zone for agriculture only, excluding animal herders accustomed over millennia to moving their herds through the land, and in separation from the “nature” enclosed within nearby forest reserves. The amount of water delivered to the ON upstream of the Delta remains consistent from year to year, regardless of the huge variation in precipitation, and in accordance to the flow rates delimited by the geometry of the gravity fed canal system. It represents shallow form par excellence, a type of intervention built around machine dimension and universalized standards ‘which hovers on the surface of the land without connecting to natures ongoing processes’. American architect Thomas Fisher expands on this critique, describing such approaches to infrastructure as being “fracture-critical”, in that they require physical, political, and economic stability to a degree which leaves them prone to catastrophic failure when conditions change. Support for his argument of this fragility is proven quite dramatically within the ON, as two major irrigation expansions have fallen apart in the past decade alone. The first being the Malibya project funded by the former regime of Moamar Qaddafi, which built a 40km long, 120m wide canal to irrigate 100,000Ha of land to supply Libyan markets only to have it sit idle as the political turmoil in Libya deprived the project of funding and leadership. The second being the 90,000Ha American funded Alatona expansion, where funding and work was halted due to the coup over the elected leader of Mali. Smaller but more numerous fractures have appeared over time through poor maintenance, water-taxation system leading to illegal diversions, and numerous small scale conflicts between herders and local pastoralists without deep roots in the area who attempt to exclude animal passage over their lands.

DEEPENING SHALLOW FORM
Utilizing the existing canal networks as the part of the architecture for intervention, this project attempts to deepen shallow form through additions to the functional program which develop the range of ecological activity and economic potential supported by the infrastructure system itself. The basic premise of the techniques and technologies employed within the ON leave a wide opening for improvements which do not necessarily require dismantling and rebuilding of the current infrastructure, yet are capable of making them responsive to downstream needs and more
resilient to external shocks. The highly regulated site of the Macina-Ke district which has been the focus here forms a sort of anthropogenic watershed employing a strategy of mono-cultural rice production. It functions on the gravity driven premise of water supply from high points in raised supply canals along the perimeter delivered inwards to the fields through secondary and tertiary canals before flowing into the inverse network of drainage trenches. To address the weaknesses outlined, the interventions employ soft strategies of crop diversification, agro-forestry and ecological intensification through the network of supply canals, drainage canals, and low points within the area which remain too wet for agricultural activity for most of the year.

Changing the range of crops grown to include dryland staples of millet and sorghum, along with more drought tolerant but lower yielding African rice strains, allow the possibility for responding to changing levels of water flow in the river and local precipitation that are monitored through an existing system along the entire Niger River. Planting trees species valued for their economic potential, for example, is a simple yet effective solution along the supply canals which can utilize water normally lost through seepage. This works to supply locals with building materials, firewood, and a range of other products associated with selected tree species like the *Baobab* and *Doum palm* which have commercial potential which benefits primarily local actors. The drainage system can be used as a network for animal herds to travel through the area, planted with a selection of groundcover, woody shrubs, and tree species which are geared towards producing fodder and fruits while functioning simultaneously as a series of shelterbelts and erosion control measures. Grazing along these specified corridors works to address conflict between herders and farmers, reducing the negative impact on soil quality and crop production caused by trampling herds while promoting use of excess water found in drainage canals. The basic comforts provided by shade of the trees is also a simple yet powerful result of design thinking which can be maintained year round by staggering of nitrogen-fixing white acacias, which keep their foliage in dry season, and fruit producing jujube trees which shade during wet season. Lastly, focusing on the currently un-used pockets of low areas submerged in drainage waters through the year can provide opportunity for establishing nesting habitat. Research has shown that irrigated rice paddies are already used as feeding grounds by nearby wetland bird species, and contrary to the belief of many do not actually impact crops, instead feeding on the insects and pests which farmers struggle to control. By planting appropriate tree and wetland plant species, this relationship can be established into a positive feedback cycle where birds can actually live and feed in within the agricultural area. In this way, the agricultural infrastructure is transformed from being biologically barren into a reliable ecological reserve rich in diversity, improved in its overall performance for all measures (biodiversity, crop yields, etc.) and with greater cultural sensibility to the location in which it is situated.

**FROM HUMAN TO HUMANE ECOLOGIES**

This project has specifically targeted infrastructure as a strategic forum of intervention because it offers broad potential for inducing systemic transformation of urban regions rather than symptomatic responses to specific issues after the fact. The approach taken works directly to address impacts extended from urban centres of the built environment into the broader territory, and the array of challenges provided by climate change in issues like food security and water scarcity. Rather than being reactive, the idea of deepening shallow form in the *Office du Niger* suggests how even simple planting strategies can work to significantly alter and expand the functional program while simultaneously advancing economic and ecological agendas. By no means do these particular interventions discussed represent the best means of working towards better solutions for rapidly growing urban regions of the Sahel. The obvious weakness here is a strategy which has not, for reasons of practical difficulty, engaged or consulted in person with the actual stakeholders of this area. However, the evidence suggests that these actions would benefit those living and working in the area, those in the cities relying upon it for their food supply, and those who are investors/land owners. It is quite clear that the current approach is already outdated, inefficient, prone to conflict and anything but resilient in the long run.
Landscape based forms of urbanism engender a diversity of approaches that can still maintain the coherence required to effectively address complex challenges, allowing those with relevant knowledge and skills to work beyond their “home-range”. While there are many institutional, financial, political and geographical obstacles to working in areas like Inner Niger Delta, it should be clear that practice focused almost exclusively on the post-industrial cities of the North is not enough. A sober assessment of the consequences of inaction on climate change using the most generous of scenarios in predictive models, should instil a true sense of urgency given the impact of comparatively minor disruptions currently being experienced in countries like Syria. Moving beyond ism requires that landscape architects and urbanists act to project a need for their expertise, and divert some part of their attention to the areas in which they are currently absent and most useful. As such, the main thrust of this research has not been to merely affirm the presence of this infrastructure as part of a human ecosystem, but to suggest how one could work to make it a more humane ecosystem.

ENDNOTES
7. Lyle, J.T. Ibid.
THE POLITICS OF LANDSCAPE URBANISM AS DISCURSIVE PRACTICE: UNDERSTANDING PRESENT USES, ENVISIONING FUTURE USES.

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KEYWORDS: landscape urbanism, discursive practice, politics, discursive institutionalism.

INTRODUCTION
There is a political side to the theory of landscape urbanism (LU) that is often overlooked. To address this political side, this paper presents a model that looks at landscape urbanism as discursive practice. By focusing on discursive practice, I broaden the narrow understanding of discourse as language or text, to a broader perspective that also articulates the social-institutional practices (including actors and their networks) that are entwined with the language used and the material, or bio-physical aspects of an area. The aim here is to provide an idea for structuring the conversation about the politics of landscape urbanism (or ecological urbanism), in situations that have already been branded as LU or in situations where LU might be considered as a design-option.

Discourse studies maintain that concepts are not mere reflections of reality, nor neutral sources of inspiration. Rather, discourse analysts accentuate the political character of concepts and their use. Landscape urbanism as a concept, to be more specific, incurs questions as to what its introduction does, politically, such as: who is involved, who is not? Who wins, who loses? How does landscape urbanism alter social relations?

There is a wide range of types of discourse studies, each with their own definition of discourse. Some studies focus on discourse as language or text, other studies frame discourse in terms of communication and the norms of an “ideal” communicative rationality. Yet others look at discourse as frame, by which they focus on how, consciously or unconsciously, discourses exist in peoples’ minds through which meaning is given to phenomena. Yet other studies emphasize the role of social-institutional practice in reproducing ideas and concepts and propose a discursive institutional approach (for an overview see Arts and Buizer, 2009). Looking at discourse from the perspectives of frames and social-institutional practices, we argue, facilitates analysis of how new ideas, concepts and narratives (such as those surrounding landscape urbanism) have a bearing upon social and political processes and outcomes (ibid.). A view of discourse that is strongly practice-oriented focuses on how language, text, and the things that people say; work out in practice and vice versa, how these “text-infused” practices strengthen a particular discourse. This paper builds upon the discursive-institutional approach, and develops it further as a lens to examine landscape urbanism. This will render greater attention to the social-political questions that are imbued with landscape urbanism. In so doing, I aim to understand what working from the theory of LU does, how it directs the conversation and how it might brush aside other topics. This approach con-
nections to appeals for critical reflection on the political work done by green infrastructure concepts (de Block 2016).

I present a simple model with three sets of questions. Roughly, the three sets of questions relate to 1) discourse, symbolic representations (ideas/concepts that may enable or restrain certain practices and forms of managing the urban landscape, narratives); 2) actors and institutions (the actors and institutions and social practices involved with LU that may make some discourse stronger and others weaker); and 3) materiality (the natural-physical conditions, or physical context and physical manifestations of LU in/with which urban actors engage in urban life and collaborative initiatives). Elsewhere we have worked from these three dimensions as a way to operationalize and explore “landscape governance”, and found that political conflict was displaced and contained in a way that prevented public debate (Buizer et al. 2015). Thus, the model is to be considered as a heuristic device that acknowledges that there is a politics of scale involved, a means by which to learn about what landscape urbanism might mean in different contexts and to help imagine how things might be different. To this purpose, the case of Laak, a socio-economically deprived district in The Hague the Netherlands, will serve as inspiration to substantiate the claim that it is important to take on such a political view on landscape urbanism. To an extent, this is a hypothetical exercise – developments in Laak were never “branded” as landscape urbanism. However, imagining a specific environment aids in reflections on the model.

THE DISCOURSE OF LANDSCAPE URBANISM

Although landscape urbanism is often loosely referred to as the landscape urbanism discourse, it has so far not been critically reflected upon as discourse in the above broad sense, as a way of framing that is related to social-institutional practices and that has material manifestations in the landscape. There is already a lively debate about the many adjectival urbanisms and what they stand for, or what they can achieve (Barnett reports 60 and more, Barnett 2011). Similarly, several contributions to the landscape urbanism discourse have emphasized its versatile, even promiscuous character (Waldheim 2016). Steiner makes a case for the establishment of a closer connection of landscape urbanism with ecological urbanism (Steiner 2011). This cause has been followed up by Waldheim (Waldheim 2016). In a somewhat different way, the versatility of the concept resounded strongly at the Beyond isms conference that the present proceedings resulted from. At several of the sessions, presentations were given of developments and initiatives with regard to public space that were not initially intended or labelled as “landscape urbanism”. In more than one occasion, members from the audience questioned the suitability of the term for the presented case. Whilst acknowledging that this is, to some extent, a result of organizing a conference with landscape urbanism in its title, such questions about the “fit” between the concept and the presented examples, by their implication of “right” and “wrong” interpretations, do the work of reproducing the idea of landscape urbanism as it is known in documented materials and established discourse. Yet, it makes sense to ask these questions, because they may uncover what is taken for granted in applications of the concept and highlight how interpretations may be different.

In concurrence with Aseem Inam, I think that presenting or fixing a “closed” definition of an –ism risks ignoring the different meanings and makings of what we want the concept to mean, or what it could mean (Inam, 2014). Indeed, to define “what something is”, arguably invokes conservative forces and tends to consolidate the status quo. This is sometimes useful, but often it is not. Inam criticizes the focus in urbanism on architecture on a larger scale, and the obsession for aesthetics and three-dimensional objects, and he draws attention to issues of social and political empowerment. Arguably, ‘the point is […] to develop a profoundly critical engagement with cities and to offer intellectual and ethical guideposts for transformative action’ as ‘the most powerful means we have for the design of cities is our imagination’ (p 21). In this vein, I have interpreted the conference theme “beyond ism” as a call for thinking beyond “what is”, and towards the question that is provoking the imagination: what landscape urbanism can be. I believe the three-pronged “political” model can facilitate analysing present use, and envisioning possible future uses.
DEPOLITICIZATION - THE DISPLACEMENT OF THE POLITICAL IN LANDSCAPE URBANISM

With reference to Landscape and Ecological Urbanism, De Block (referring to Žižek) contends that ‘the mobilization of expert knowledge, complex sophisticated technical practices, and the focus on managing local, mainly biophysical, parameters, instead of social priorities, efficiently function together to reduce controversy and reach stakeholder consensus, thus circumventing political disagreement’ (2016: 382). Although reaching consensus and circumventing political disagreement might sound attractive, I concur with De Block and argue differently. The problem with such a focus on consensus is that it has often come with the embrace of neoliberal win-win and no-regret policies that keep in place certain forms of injustice. Simultaneously, consensus-oriented solutions have often brushed aside values that could not be aligned with what has become the “consensus view” (Metzger et al. 2015). We need to remember Mouffe’s statement that ‘[E]very consensus is based on acts of exclusion’ (2005: 11). Various authors have argued that the widespread embrace of neoliberalism and the related assumption of aligning ecology and economy has introduced a “postpolitical” stage in world history (Wilson and Swyngedouw, 2015; Metzger et al., 2015). This postpolitical stage is characterised by depoliticization or a political deficit, meaning that there is a lack of space for contestation and agonistic engagement, and little to choose from other than detail (Metzger et al., 2015). Designing cities for the future, in such a world, has become a matter of procedural and managerial governance that is driven by and operating for neoliberalism. This is not to say that developments surrounding landscape urbanism are necessarily working in the same direction. It is to say that the question needs to be asked.

In response to the emphasis put on the existence of a political deficit, other authors have asked if this emphasis has not taken too much attention away from agency, from the possibilities that actors still have to realise change in a world that can never entirely be dominated by a depoliticising, neoliberal logic (Paddison and Sharp, 2007). They argue for more attention to difference, and to a greater role for conflict and agonism to reveal the fundamental differences underlying the choices made in cities.

I agree with the critique that there is a risk in too easily glossing over the socio-political context, in relying on expert knowledge and striving for consensus whilst papering over what is lost on the way. But, why raise this point particularly in relation to landscape urbanism? Indeed, this type of critique is also relevant to other “-isms”. But, landscape urbanism and particularly its belief in the central role of green/ecological infrastructures is a case in point, because it has been criticised for lacking attention for the political, and for taking it too easily for granted that there is great potential in the bottom-up integration of ecological processes with urban growth. In this view, De Block argues, ‘[I]nterface is believed to generate an inclusive assemblage, a landscape for the general “public good”’ (2016:369). Her point is that in fact, it is not. Case studies have expressed a similar concern, such as the study of Littke and colleagues (2015), that observes how in the case of the popular LU Highline in New York – a track of abandoned infrastructure that has been transformed into an elevated park to lift the neighbourhood and the economic value of its real estate – social and political issues have been overshadowed by a concern for ecological and landscape qualities.

However a baby could prematurely be thrown away with the bathwater by refraining altogether from engaging in debates about landscape and ecological urbanism – for such debates can bring together different disciplines to question what futures are imaginable and desirable for urban development. One of the potential attractions of the concept is that it inverts mainstream thinking about the relationship between cities and landscape. It offers an alternative, by taking landscape or ecological flows and networks as the point of departure. Also, it is, purportedly, better able to accommodate and adapt to complexity and changes such as climate change (cf. Sease, 2015). This does not necessarily only have to happen on abandoned land or infrastructures.

In conclusion, the remaining question is how the political can be included in evaluations of landscape urbanism projects, current or upcoming.
BRINGING BACK THE POLITICAL
To bring back the political in analyses of LU we need to ask whether landscape urbanisms is restricted to the "typical examples" as they have currently been presented in the LU literature and explore the conditions in which LU has so far been implemented, with what consequences. Also, we need to explore the prospects of using the concept more freely, to imagine alternative futures. The latter exploration intends to uncover how we need to operationalize landscape urbanism to facilitate/enable responding to the socio-political conditions that currently stand in the way of a more just and equitable society. Reflecting on what landscape urbanism has, so far, been made to be is part of such an effort, but it focuses on imagining what it could be in a setting that is different from the settings in which it is most commonly imagined, and to develop a view on landscape urbanism that is people-focused and that is firmly connected to attention for the politics of scale and place-making. In order to facilitate research on the politics of landscape urbanism we draw upon our three-pronged approach:

LAAK
Laak has 40,000 inhabitants, of which 70 percent has a migration background. Although Laak is administratively labelled as one of 8 districts of The Hague, residents rarely experience Laak as one whole. In fact, Laak exists of neighborhoods Molenwijk, Laak, Spoorwijk and Schipperswijk and Binckhorst, each with their own characteristics and problematic. Overall, unemployment is high in comparison with other districts in The Hague, although percentages differ per neighbourhood. A recent report of the Dutch Environmental Assessment Agency The divided triumph of cities offers an interesting view on the city of The Hague when it concerns the proportion of people per neighbourhood with a low income, as compared with inhabitants with paid jobs. Laak (deep purple in Figure 2) is one of the districts with a significantly higher number of lowly paid workers than other parts of The Hague. Although the report emphasizes that segregation in the Netherlands is not as strong as in other European cities, it also shows how segregation has become more marked between 2001 and 2012. Historically, the "dividing line" in The Hague is formed by the question whether the neighbourhood was built on clay or sand, with generally higher incomes in the neighborhoods on sand.

FIGURE 1. Three lenses to look into landscape urbanism
In the north-east of Laak, the industrial area Binckhorst is currently undergoing a substantial transformation. A new tunnel will enter into the city, several buildings have been demolished to make place for new housing and enterprise development, rendering large tracts of derelict land and rapid changes of ownership. Three new bars/restaurants have been opened over the past years, their customers chiefly creative entrepreneurs whose businesses are occupying some of the old industrial buildings of the area. The Binckhorst is separated from the remainder of Laak by a canal.

With this background information in mind, one can now venture to formulate initial questions to imagine landscape urbanism in Laak. Table 1 (next page) presents four columns with, in the first column, the dimensions materiality, discourse, actors and institutions. In the second column, I contrast each of the dimensions with LU theory and practice. The third column presents three sets of questions that highlight the social-political dimension of landscape urbanism. The fourth column summarises key issues in Laak that come to the fore on the basis of the dimensions and the related questions. The fifth column asks for the conditions for LU design options in Laak, to envision possible future uses of the concept.

Concluding, learning from current LU practices by asking questions about its social-political performativity, may provide a window on how this particular “–ism” may, or may not work towards a more just and equitable society.
<table>
<thead>
<tr>
<th>Materiality</th>
<th>Landscape urbanism in theory and practice</th>
<th>Questions to accentuate social-political dimension of landscape urbanism</th>
<th>Design options for LU in Laak? Envisioning possible future uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>The physical place characteristics or the objects in a landscape, bio-physical conditions</td>
<td>Building upon abandoned infrastructure or abandoned land in cities. Projects are mostly large-scale. What 'abandoned land or infrastructure' is available in the area?</td>
<td>What are the possibilities for breaching with a past of social segregation by a LU-inspired physical intervention such as LU?</td>
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<td></td>
<td>What these infrastructures or places often do, politically, is supporting some groups of people while displacing others. What are examples of green space that might be linked to a landscape urbanism approach?</td>
<td>How can LU serve as a 'vehicle' to connect 'sand' with 'clay'?</td>
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<td>Discourse</td>
<td>Discourse of ecological modernisation: a belief in possibilities to align scientifically supported, ecological (landscape?) approaches with economic growth, producing outcomes that do not involve harm or vulnerabilities. Focus on (green or ecological) 'infrastructure' as a basis for urban development, as a response to architectonic approach of the past. Landscape considered as an object that can be measured by complex calculations and cartography.</td>
<td>What are the kind of social-economic problems of the area? Who see potential in using LU as an approach to provide answers to these problems? What have other projects shown to be the potential social-political side-effects of LU projects that might be of relevance for the area under study? What issues are included and which are potentially pushed aside by the introduction of LU?</td>
<td>Social problems in Laak seem to be critically related to (increasing) social segregation. Inhabitants hardly frame problems in terms of access to green space or infrastructure. Other issues dominate agenda’s, such as structural conditions behind the relatively high level of unemployment in parts of Laak, or housing property owners who do not invest in widely experienced problems such as mould. At a scale beyond Laak, there is a marked and growing issue of social segregation.</td>
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<tr>
<td>How the problem is framed, and at what scale, with what knowledge considered relevant</td>
<td></td>
<td></td>
<td>Does landscape urbanism help address the social-economic problems of Laak? Is there a role for landscape/ecology? How? According to whom?</td>
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<td></td>
<td>More specifically: Does the idea of landscape urbanism create imageries of Laak that address the experienced problems? In terms of knowledge-exchange: can forms of action research, with local groups and networks, be inspired by LU? What types of urbanisms tune into local problem framings?</td>
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</tr>
<tr>
<td>Actors and institutions informal networks, formal arrangements</td>
<td>Significant role for designers, ecologists, expert knowledge, creative entrepreneurs. 'Friends-of' groups supporting the new development (e.g. in case of Highline). Ample resources made available for the projects</td>
<td>Who are (potential) advocates of landscape urbanism projects? How do informal networks 'traditionally' work together with formal structures? Who is likely to win, and who to loose, by implementing a landscape urbanism project? Are resources available?</td>
<td>Organisations in Laak are based on different religious backgrounds. There are various government subsidized organisations that have no perspective for the long term. Links between the different neighborhoods in Laak are not strong. Who are potential supporters of a LU project in Laak? Do these have the mobilizing potential (in the short and long run) to activate a broader network, formally and informally?</td>
</tr>
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TABEL 1. A first exercise using the model
REFERENCES


WHO, WHY AND HOW? THE LANDSCAPE PERSPECTIVE TOOL: A PROPOSAL FOR A SITUATED INTERPRETATION OF THE URBAN LANDSCAPE CONSTRUCTION

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ABSTRACT
Functionally and aesthetically, urban landscapes have been often characterized as marginal, ubiquitous, generic, banal etc. However, each specific urban landscape responds to a set of local contextual aspects including physical geography, history and culture, to name a few. The unique and differential character of urban landscapes has been recognized in academia already, but how can such theoretical advances be transferred to the practical and pragmatic contexts of landscape and urban planning? By carrying out a theoretical and methodological revision, a proposal for an interpretive tool has been made in an attempt to accommodate additional aspects of landscape formation in territorial analysis and landscape characterization processes. These are embodied in four dimensions that have been pooled, so to speak, from said theoretical revision. The tool has been dubbed “landscape perspective” and it has been developed using urban landscapes as a basis. It has tried to meet the following requirements: firstly, to fit in the practical context defined by tensions between discipline related objective and individual and/or collective subjectivist land understandings, and also by the lack of specific design and planning criteria for the urban landscapes. Secondly, to stress the social construction of landscape by drawing from a historically and culturally specific multi-layered understanding of place. This means that it should consider the various tangible and intangible effects that society has had in landscape construction, and also, the many land understandings that originate in as many actors. Finally, to be compatible with established analysis and projective procedures in the planning praxis and space related decision making by structuring the interpretation of landscape in a systematic way. The theoretical review has taken into account three main fields of scholarship: urban studies, landscape theories, and urban landscape theories. Additionally, other three subfields have been used to build up the tool’s theoretical foundations: landscape and nature, mountain landscape theory and cultural landscape theory. On the other hand, methods that are built on multi-aspect and multi-layered territorial and landscape analysis and interpretation have been reviewed along with theoretical, academic and practice based methods. As a proposal, the concept and design of the Landscape Perspective tool tries to put forward a way to understand the character of urban landscapes, by including both material and discursive, objective and subjective aspects in the analysis. The tool is a compound of the mentioned theories and methods of landscape characterization, and its fundamental structuring aspects are the Idea, Agent, Representation and Element dimensions. In addition, the Landscape Perspective tool is also defined by its instrumental use for interpretation purposes as it has a propositive and practical objective that is reinforced by its systematic structure, that is, by the four lines of inquiry suggested by each of the four dimensions. The interpretation through these might lead to a detection of potentialities and possibilities that are unique to each landscape from a social constructivist point of view.
**METHODOLOGY, OBJECTIVE AND PURPOSE**

The unique and differential character of urban landscapes has been recognized in academia already, but how can such theoretical advances be transferred to the practical and pragmatic contexts of landscape and urban planning? This is the main question of the research explained in this paper. By carrying out a theoretical and methodological revision, a proposal for an interpretive tool has been made in an attempt to accommodate additional aspects of landscape formation in territorial analysis and landscape characterization processes. These are embodied in four dimensions that have been pooled, so to speak, from said theoretical revision. In this paper, a tool is proposed.

The main aims and requirements are next:

- Understand the character of urban landscapes and their formation
- Structure the perceptions. There needs to be a consideration towards the physical and conceptual effects that society has on the land, and also, many land understandings that originate in as many actors should be examined. Such perceptions of landscape should be structured in a systematic and normalized way that could hypothetically be compatible with established analysis and projective procedures in the planning praxis.
- Objective qualification of Landscape. In addition, an effort should be made to avoid well known landscape archetypes in order to achieve the most integrative perspective as possible in terms of what is considered valuable and significant. It means that land analysis should be carried out without predefining the vocation or aesthetic quality of a place, and instead, searching for its future situation in its own qualities and potentialities so as to value and qualify its prevailing state.
- Empathic approach to landscape. Moreover, the method for analysis shouldn’t be guided by aesthetic and subjective criteria that define differences between pleasant/proper and unpleasant/unproper built elements, and rather proceed with an empathic approach to landscape (Sieverts, 2003).

The tool has been dubbed “landscape perspective” and it has been developed using urban landscapes as a basis. It has tried to meet the following requirements: firstly, to fit in the practical context defined by tensions between discipline related objective and individual and/or collective subjectivist land understandings, and also by the lack of specific design and planning criteria for the urban landscapes. Secondly, to stress the social construction of landscape by drawing from a historically and culturally specific multi-layered understanding of place. This means that it should consider the various tangible and intangible effects that society has had in landscape construction, and also, the many land understandings that originate in as many actors. Finally, to be compatible with established analysis and projective procedures in the planning praxis and space related decision making by structuring the interpretation of landscape in a systematic way.

The concept and design of the Landscape Perspective tool is a compound of the several theories of landscape. However, the main theoretical reference of the tool is the constructivist approach to landscape by Denis Cosgrove (1998). Cosgrove (1998) claimed that landscape denotes more than the visible elements of the land and stresses the notion of landscape as a particular mode of perceiving reality that is developed by certain parts of society in a specific historical moment and that has its own modes and techniques of representation. On the other hand, the Landscape Perspective tool is also defined by its instrumental use for interpretation purposes. These aspects and the aim concerning the analysis of a regional scale landscape have been inspired mainly by two references, although other similar methods have also been consulted. On the one hand, the concept of “ecology” and its fourfold formulation use by Rayner Banham to interpret the city of Los Angeles (2001a). On the other hand, the model for landscape perception and its interactive threefold structure proposed by Martin Zube (1982). While the first method is the inspiration for taking into account the specific landscape—ecology in Banham’s terms—and its different aspects—architecture, culture, representation— created by the interaction amongst geographical features and social-cultural practices within an urban region, the latter model offered also an additional take on interaction in the case of the features that form the process of landscape perception and construction. The proposed method of the finalized research considers just one
type of geography or land: the mountain slope, but looks into various ways it has been cultured.

In addition, the Landscape Perception tool can also be paired with and has been influenced by: the three layered construction of the urban space by Henri Lefebvre (2003), the concept of land as palimpsest (Corboz, 1983), and the multiple possibilities for perceiving a land suggested by Meinig (1979) as it has already been noted.

LITERATURE REVIEW

From a constructivist standpoint, landscape is a way to see and relate to land of a part of society (D. E. Cosgrove, 1998); a concept that is both materially and conceptually constructed and transformed (Baker, 1992; Nogué, 2010; Roger, 2007). By joining various landscape perspectives of different social backgrounds and profiles, it is possible to compose a multi-perspective understanding of a land (Meinig, 1979) and it is also possible to identify different ways of understanding the land that affect spatial planning and that depend on different levels of social and political power (Baker, 1992; D. E. Cosgrove, 1998; Denecke, 1992). In addition, as relationship between society and land change over time due to social, political and economic developments, landscape accommodates these variations dynamically (Jackson, 2010) and also has the capacity to be deconstructed (D. E. Cosgrove & Domosh, 1993) due to an interactive relationship amongst people, land and perception (Zube et al., 1982). That is to say, according to a constructivist outlook, landscape is formed by people, in various physical and conceptual ways that change through history and time.

As the current situation, urban fringes are a result of multiple layers of land understanding and perspectives (Roger, 2007). It is fair to say that by digging into their foundations and structures it is possible to understand their formation and find specific features within that can help characterize their landscape.

What follows is a brief account on the references and definition of the four Dimensions that structure the Landscape Perspective. These have been derived from independently elaborated, but conceptually related, theoretical approximations to landscape and to its definition, perception and conceptualization.

• **Idea, 1st Dimension:** the Idea represents the understanding of the mountain/land in connection with a purpose or intention of transformation. This Dimension is derived from the definition of landscape as “a way of seeing the world” (D. E. Cosgrove, 1998) and stresses the aspect of specificity to the construction of landscape by particular social groups (D. E. Cosgrove, 1998) so as to indicate the existence of various Ideas that fundament as many different Landscape Perspectives. The manifold existence of Ideas is simultaneously derived from the argument of the existence of tenfold ways of seeing a single part of land (Meinig, 1979).

• **Representation, 2nd Dimension:** the Representation Dimension is derived from the direct association between a Landscape Perspective and its communication, representation, artealization (Roger, 2007) in various modes of expressions and techniques depending on the author. To represent the way of experiencing, seeing and relating to the world is also a key process in the construction of landscapes in Cosgrove’s (1998) definition. Landscape as a representation or schema of the way to see the world (Corner, 1992, p. 243) denotes a selection of elements from the land to express a plausible reality or design (Corner, 1999).

• **Agency, 3rd Dimension:** This Dimension is inherent to the Landscape Perspective, and to landscape as a constructed concept itself. It also determines the remaining three Dimensions within the Landscape Perspective tool, and therefore is a fundamental part of the interpretation of landscape formation. Agency is mentioned as a European social group or certain classes of people, (D. E. Cosgrove, 1998), as authors of landscape (Samuels, 1979), as various beholding eyes (Meinig, 1979). Cosgrove (1998) differentiates insider and outsider agency—depending on the relationship between people and land—, as well as objectivist and subjectivist ways of seeing the land—depending on the purpose and epistemological standpoint of the observer.
- **Elements, 4th Dimension:** The elements represent the consequences of the way to see the world. Elements are the constructed landscape, more than the visual part of the land (D. E. Cosgrove, 1998); both parts in the double *artrealization* that builds landscape *in-vision* and *in-situ*, on an imagined or conceptual level, and on a physical material level (Roger, 2007), but not necessarily always from an artistic perspective as suggested by Roger (2007). Depending on the elements, the landscape can be characterized as political or inhabited (Jackson, 2010); and thus reflect an ideological way of doing landscape (Baker, 1992).

In short, the Landscape Perspective tool represents a tool for speculating with landscape’s character based on its built forms by formulating several Landscape Perspective Ideas that have shaped a land—as employed in the First Scene—, and a tool to interpret landscape conceptual constructions through its four dimensions—as used in the Second Scene.

**FIGURE 1.** The four dimensional structure of the Landscape Perspective tool.

Namely, the present research proposes an interpretation of the various land layers by implementing the Landscape Perspective tool and method; this is accomplished in two Scenes: the Field Work First Scene and the Archival Second Scene. Within the First Scene, the tool is used to formulate, interpret and understand each of the layers that have shaped discursively and physically the land into landscape. It is followed by the Second Scene where the Landscape Perspective’s four structuring dimensions establish the lines of inquiry that guide the interpretation: land understanding or Idea (1st D), Representation (2nd D), promoter or Agency (3rd D), and the effect of transformation (conceptual and/or material) or Elements (4th D). These are further analyzed and interpreted in each of the formulated Landscape Perspectives using the theoretical presumptions and looking for trends and structures that can serve to meet the purpose of understanding the urban landscape.

**METHODOLOGICAL REVIEW**

A constructionist approach was chosen as the best possible standpoint to meet the research objectives of understanding the character and formation of urban landscapes since it fits with the definition of landscape as social construction, and the notion that knowledge about landscape is ‘actively constructed rather than found or discovered’ (Deming & Swaffield, 2011, p. 9). That has lead the work to adopt a method of analysis that is defined by two aspects: validation of the researcher’s views and constructions of the case study reality (Swaffield, 2006), and the acknowledgement of both objective and subjective considerations of landscape knowledge construction (Deming & Swaffield, 2011; Swaffield, 2006).

The chapter includes a comparison chart amongst various established praxis and research related landscape analysis methods: a process for land perception by G. And P. Picnemel and E. Turri (cited in Busquets, 2009), the process of building a project for landscape management (Busquets & Cortina, 2009), the Landscape Character Assessment technique (Swanwick & Land Use Consultants, 2002), the method used to analyze landscape in a Master course (*Energielandschaft Allgäu*, 2013) and the Regional Plan of Bilbao 2006 (País Vasco & Bizkaia, 2008) The comparison aims to frame with precision the purpose and functionality of the proposed method, its techniques and data gathering process by mirroring it with already existing and used ones.

It is followed by a review on several methods of land interpretation and models that have been of reference to shape the Landscape Perspective tool and the formulation of several Landscape Perspectives to understand the land. These include (1998) definition of landscape as the main foundation of the Landscape Perspective tool and Martin Zube et al.’s (1982) model of landscape...

Finally, examples of field work (Careri, 2002; B. Sieverts, 2006, 2008; Sinclair, 2003; Smithson, 2006) and archival work (Bowring, 2002; Daniels, 1988; Larsen & Swanbrow, 2006; Lewis, 1988; Osborne, 1988; Qviström, 2013; Robertson & Hull, 2001) techniques are explained as references to clarify the techniques and steps that are proposed in the finalized research. These methods and research techniques have been used as references for the process of landscape character understanding that is proposed, as well as for the different steps that take place in that process.

<table>
<thead>
<tr>
<th>PROPOSED METHOD</th>
<th>LAND PERCEPTION PROCESS (G &amp; P PINCHEMEL, AND E TURRI)(1)</th>
<th>PROJECT FOR LANDSCAPE MANAGEMENT (BUSQUETS, 2009)</th>
<th>LANDSCAPE CHARACTER ASSESSMENT (COUNTRY-SIDE AGENCY ETA SCOTTISH NATURAL HERITAGE)</th>
<th>GESTALTETE ENERGIETAL- SCHAFT ALLGÄU (LAREG, TUM)</th>
<th>LPP BILBO METROPOLITAN PLAN 2006 (REGIONAL PLAN OF METROPOLITAN BILBAO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. SCENARIO: DATA COLLECTION LANDA-LANA ES PLORATZALEA</td>
<td>CHOSEN WORLD-VIEW: PERCEPTION AND IDENTIFICATION</td>
<td>SELECTED IMAGE</td>
<td>DATA COLLECTION</td>
<td>DESKTOP ANALYSIS</td>
<td>ANALYSIS OF GENERIC ELEMENTS</td>
</tr>
<tr>
<td>SIX SPECULATIVE AND INTERPRETATIVE LANDSCAPE VIEWS, AND CARTOGRAPHY</td>
<td>REBUILDING: IMAGE BASED ON A certain PERCEPTION</td>
<td>NET IMAGE</td>
<td>READING AND REPRESENTATION</td>
<td>FIELD WORK OF FIELD ANALYSIS</td>
<td>CARTOGRAPHY</td>
</tr>
<tr>
<td>IDEAS, JUDGMENTAL VALUES, PERCEIVED VALUES ACCORDING TO LIFE EXPERIENCE AND VALUES</td>
<td>VALUED IMAGE</td>
<td>VALUING</td>
<td>CLASSIFICATION AND DESCRIPTION</td>
<td>LANDSCAPE STRUCTURATION</td>
<td></td>
</tr>
<tr>
<td>2. SCENARIO: DATA COLLECTION, WORKING IN THE ARCHIVES</td>
<td>ATTITUDES AND BEHAVIOUR</td>
<td>PROJECTED IMAGE</td>
<td>PROJECTING</td>
<td>CHOICE OF CRITERIA TO BE USED TO MAKE VALUE JUDGEMENTS</td>
<td>EXPERIMENTAL ANALYSIS</td>
</tr>
<tr>
<td>INVISIBLE STRUCTURE: TENDENCIES. ALTERNATIVE LANDSCAPE VIEWS</td>
<td>DECISIONS AND ACTIONS (POLITICAL)</td>
<td>PROSPECTIVE IMAGE</td>
<td>PLANNING</td>
<td>JUDGEMENTS AND PROPOSE CRITERIA</td>
<td>NEW REPRESENTATIONS</td>
</tr>
<tr>
<td>AREA DELIMITATION</td>
<td>DOCUMENTATION</td>
<td>RECOMPOSITION BASED ON DOCUMENTS</td>
<td>ASSESSMENT</td>
<td>ASSESSMENT</td>
<td>VALUE OF</td>
</tr>
<tr>
<td>DOCUMENTATION</td>
<td>RECOMPOSITION BASED ON DOCUMENTS</td>
<td>ASSESSMENT</td>
<td>ASSESSMENT</td>
<td>ASSESSMENT</td>
<td>SIGNIFICATIVE ELEMENTS</td>
</tr>
</tbody>
</table>
| TABLE 1. Comparative amongst various landscape analysis methods and proposed method.
POSSIBLE CONTRIBUTION OF THE LANDSCAPE PERSPECTIVE TOOL

The most important characteristic of the LP tool is that it includes the various social and cultural aspects to the transformation of the territory, as well as the role that these play in the construction of ideas about landscape. The tool is designed with the aim of understanding how these landscapes have been formed, as well as a means to understand and identify its potential values from a standpoint that considers their social construction. Many accepted notions and assessments and their fixed truthfulness can be destabilized in the light of such a consideration.

For instance, in the case of the notion of nature equated to landscape, it is possible to see the constructions that define different kinds of nature, and how nature is continuously transformed and defined depending on human needs and economic interest by studying how species of fauna and flora (Clément, 2007; D. E. Cosgrove, 1998), as well as inorganic elements (Gissen, 2009) have been used and transformed to meet various economic purposes. Also, with regards to the idea of landscape as an image/photograph, by connecting the image to its author or promoting agency, purposes other than the obvious ones might also arise such as promoting a certain product, idea or region by using landscape as a symbol (Baker, 1992; Denecke, 1992; Mitchell, 2002). By studying the political and economic grounds as to how a landscape image is used to represent place (Muñoz, 2005), it is possible to discover the limits and deficiencies of the way a landscape’s cultural meaning is used to naturalize an identity associated to a place. Also, to demonstrate how powerful a part of society is in creating proper and tasteful aesthetic imaginaries of landscape and the so-called landscape archetypes (Nogué, 2010). In addition, the Landscape Perspective tool serves to claim the lack of documentation and representation of landscape constructions elaborated by communities and groups of people with less power to communicate their views. Finally, in the case of urban landscapes, the relationship between their marginal character and negative representations caused by cultural, mass media representations and interests can be unveiled using the Landscape Perspective tool.

Indeed, such capacities are not exclusive to the LP tool; there has been much research regarding constructivist views of landscape. For instance, by working on landscape and power (Mitchell, 2002), landscape and ideology, landscape and authorship (Samuels, 1979), landscape and seeing (D. E. Cosgrove, 1998, 2008), landscape and representation (Corner, 1999; D. Cosgrove & Daniels, 1988; D. E. Cosgrove, 2008). Researches dealing with cultural landscapes and their elements (Banham, 2001a; Berque, 2011; Jackson, 2010; Zarza, 2008) have also considered the social and cultural aspect, needless to say. However, these works usually focus on isolated dimensions, that is to say, by analysing just one aspect of landscape, or connecting the main dimension to another one, which remains as a secondary implication to the study. While constructivist theoretical approaches to landscape have helped to establish the dimensions of Idea, Agency, Representation, and Elements included in the proposal for the Landscape Perspective tool, it can be said that this interpretive tool includes the four of them in a single interpretive technique or device for interpretation. These four dimensions are differentiated within the Landscape. (Figure 2)

ANALYSED CASE: MOUNTAINOUS URBAN LANDSCAPES OF BILBAO

The perspective tool and this structure is aimed to enable a systematic interpretation of landscape. The proposition of a tool is justified by the intention to find a way that can serve to apply it in more than one case study, and so that it can also be integrated in a planning or design procedure. Aiming for such integration into the analysis phases included in any projective process, the finished research proposes an application method for the LP tool by carrying out a test in the case of the Mountainous Urban Landscapes of Bilbao. This search for a general method also enables the main purpose of the research, which is the understanding of the landscape character of urban fringe landscapes. However, the research deals with an approximation to a method that still needs some adjustment and fine tuning as it will be mentioned—rather than on a description and definition of an urban landscape type.
FIRST SCENE

Briefly stated, the First Scene has been a creative and, perhaps, inventive procedure to understand the landscape, by forming a plausible interpretation of the cultural land transformation from a constructivist standpoint—reflected on the consideration of a land transformation generated by several ways of seeing and doing—and using an abductive/reflexive strategy—since it has implemented inductive classification and deductive evaluative-formulative methods as well as a proposal of alternative landscape analysis categories—Landscape Perspectives. It is followed by the Second Scene, which completes the first interpretation with documented information; that is, the First Scene’s speculative interpretation acquires additional information on the Agency and their objectives that have shaped and transformed Bilbao’s mountainside.

SECOND SCENE

Starting off from the speculative interpretation of the First Scene, several aspects have been revealed during the Second Scene which serves to characterize the mountainous urban landscape development and construction: the trends within the Dimensions and the correlations amongst the four Dimensions. Using the documented information and interpreting with the Landscape Perspective tool and its four Dimensions, it has been possible to unpack the features of the ideological and conceptual basis that have shaped the mountainous urban fringe landscapes of Bilbao. Each of the Landscape Perspective formulation has been completed with data regarding its four dimensions: Idea, Representation, Agency and Elements. The results have shown that there are connections amongst the different landscape dimensions noting the various implications that each has had in urban landscape construction especially in terms of Agency and decision making. Therefore, the Second Scene represents the understanding of the intangible aspects that have constructed the landscape.
Firstly, the trends within the dimensions structure a typical construction of urban landscapes that is almost invariable amongst the Six Landscape Perspectives. The Idea of the mountain—or place—that is not significant for the development of a purpose, the standard language of Representation, the Outsider and Objectivist Agency and the Double construction—in-visu and in-situ—of landscape are trends that can be otherwise pictured as standard procedure or business as usual in what comes to regional and spatial planning of any territory.

On the other hand, the specific overlapping that takes place amongst Dimensions—Idea and Representation, Agency and Representation—, and amongst specific forms of Dimensions—Objectivist Agency and Standard Representation, in-situ landscape Elements and lack of Representation, etc.—reflect two ideas: a confirmation of the Zube (1982) model of landscape interaction and on the other hand, a variation from one Landscape Perspective to another in terms of the material and immaterial landscape constructed by each. The first idea stems from noticing how the four Dimensions interact—through correlations and overlapping—to form landscape, while the latter is evidenced by the specific forms of dimensions interactions that take place only in several cases of Landscape Perspectives.

Finally, as a last idea that contributes to the understanding of urban landscape formation; there hasn’t been found any stance of will or intention to build this type of landscape, and therefore, the idea of urban landscape as accidents and the product of many independent decision-making re-emerges confirmed by this research and its interpretation of UL through various Landscape Perspectives.

**CONCLUSIONS AND FURTHER RESEARCH LINES**

The literature review and the methodological framework have analysed different approaches to the topic and the analysis and interpretation of landscape therefore establishing the ground rules for
the empirical part of the finalized research. These are reflected and crystallized in the proposal for an interpretation tool called the Landscape Perspective tool and its 4 dimensions. The Landscape Perspective tool interprets landscape in two ways: first speculating with its character by formulating different approaches, and also by structuring an inquiry on its character through interpretive dimensions. To that end a case study has been used where physical geography plays a main role in the definition of its character and elements, Bilbao’s mountainous urban fringe landscape. The two ways in which the case study has been interpreted with the Landscape Perspective tool are to be identified with the two Scenes presented above: the Field Work’s First Scene and the Archival Work’s Second Scene. While the former Scene speculates and formulates a landscape character formed by Six Landscape Perspectives represented in maps, the latter Second Scene further enquires the character of landscape using the 4 Dimensions and theoretical premises.

The results of the Second Scene have revealed an overall trend of landscape formation indicated by the repeated types of dimensions through various documents and Landscape Perspectives, and also variations in the construction of landscape shown by different combinations of dimension types. This means that although there is a typical way of constructing urban landscapes, indifferent to the land, independent to the way the land—in this case the mountain—is understood, involving standard representations of land, objectivist agents, and both tangible and tangible constructions, there are also variations dependent on the Idea of land, and also on combinations of specific Agency, Representation and Element types. In addition, two other types of findings indicate on the one hand a combination of landscape perspective ideas showing that there is some sort of inadvertent collaboration between apparently isolated land understandings that contribute to the construction of urban landscapes, and on the other a set of alternative constructions of mountains that are included within the documents and that have also played a role in the construction of the studied landscape.

ENDNOTES

1. As it has been stated in subsection 2.1.2 Methodological Framework, other well-known regional landscape and urban landscape analysis methods have also been consulted for reference purposes.

REFERENCES


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RETHINKING LANDSCAPE URBANISM IN STUDIO: A TUDELFT EPISODE

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KEYWORDS: Emerging themes in landscape urbanism, Multi-Scale Perspective, Experience of landscape, Temporality of landscape, TUDelft Landscape Architecture

ABSTRACT
Since its emergence in 1990s, landscape urbanism provides temporality- indeterminacy- and self-organization-based solutions varying from drosscape to suburbanization projects. Its theoretical framework syncretizes a position by combining science of ecology with humanity theories; scientific and data based solutions of ecology with subjective understanding that derive from experiencing landscapes; large scale processes of ecology, infrastructure and economy with specific conditions of site; spatial understanding of landscape with temporal and ever-evolving landscape. That is why, the theory of landscape urbanism is eclectic and divergent, the theoretical coherence of which is highly debated.

On the one hand, the eclectic theory of landscape urbanism provides a methodological openness by means of newly emerging themes. This paper aims to discover the methodological openness that emerging themes are providing to contemporary landscape architecture education that has not been comprehensively manifested yet. It investigates influential and innovative methods that have been appropriated in TUDelft Landscape Architecture master track studios.

EMERGING THEMES IN LANDSCAPE URBANISM
Landscape urbanism expands traditional paradigms of landscape architecture by adding some newly emerging themes. It expands the meaning of landscape in three main areas. First, landscape urbanism inserts subjective conditions of sense of place, site specificity and experience of landscape into formulation of specific conditions of site which were defined mostly by environmental conditions such as climate, sun, wind direction etc. Landscape architecture has always been in relation with reading the specificities of site and designing with them. However, landscape urbanism put the emphasis on sensational, emotional, experiential responses that is perceived. Recently, debate on site flourishes with the discussions of how the meaning constructed in understanding landscape (Treib, 1995; Treib and Gillette, 2011; Francis and Hester, 1990; Riley, 1998), how the assessments of the landscape changes through personal lenses (Meinig, 1979) and how landscapes are experienced (Kaplan and Kaplan, 1979; Tuan, 1997).

Second, the scope of landscape architecture has shifted from passive landscape that should be preserved into landscape as the organizing element of city (Corner, 2006; Waldheim, 2002;
Pollak, 2000; Mostafavi and Najle 2003; Koolhaas, 1998). The traditional environmentalism conceives preservation as a technical requirement with narrower scale interventions and landscape as urban-natural sources fixed in an area. By putting landscape as structuring element for design, landscape urbanism ‘coherently bring together an extended spectrum of scales’ (Burns and Kahn, 2005, p. 25) to comprehend multi-variable dynamics of landscape. Here, landscape as an active phenomenon, re-organizes its own scale within its various networks of relations, from ecological to economic, to political to organizational networks.

Third, the understanding of temporality of landscape has expanded. Traditional understanding of temporality of landscape is related to seasonal changes, growing plant material in their lifespan and Ian McHarg’s theory of creative fitting. Since 1960s, with the changing paradigm in open, ecosystem approach, landscape is started to be discussed as ever-evolving, adaptive self-organizing and operative systems as a response to changing environmental conditions (Hill, 2002; Lister, 2007; Czerniak and Hargreaves, 2007; Berrizbeitia, 2007). Since then, by inserting ecological systems as models for design, landscape urbanism produces of adaptive landscapes, dynamic and self-organizing systems and operative landscapes. (Figure 1)

This paper focuses on these three emerging themes: Sensuous qualities and Experience of Landscape, Multi Scalar perspective and Temporality, Change and Process and it explores how pedagogical underpinnings in contemporary landscape architecture education encourage these themes in TUDelft Landscape Architecture.

CONTEMPORARY LANDSCAPE ARCHITECTURE EDUCATION: TUDelft EPISODE

This part investigates methodological openness on sense, scope and temporality of landscape that

<table>
<thead>
<tr>
<th>SPECIFIC CONDITIONS OF SITE</th>
<th>SCOPE LANDSCAPE</th>
<th>TEMPORALITY OF LANDSCAPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental factors such as climate, wind, sun etc.</td>
<td>Preservation Environmental Stewardship</td>
<td>Seasonal change of plants Growing of plants</td>
</tr>
<tr>
<td>-Site specificity</td>
<td>-Landscape as organizing Element of design -infrastructures systems -Flows</td>
<td>-Adaptability of Landscapes -Operativeness/ Process form -Self-organizing processes</td>
</tr>
<tr>
<td>-Sense of Place</td>
<td></td>
<td></td>
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<tr>
<td>-Experience of Landscape</td>
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</tbody>
</table>

FIGURE 1. Newly emerging themes in landscape urbanism

2007; Czerniak and Hargreaves, 2007; Berrizbeitia, 2007). Since then, by inserting ecological systems as models for design, landscape urbanism produces of adaptive landscapes, dynamic and self-organizing systems and operative landscapes. (Figure 1)

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<table>
<thead>
<tr>
<th>Design Studios</th>
<th>Interviewee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quarter 1: Architecture and Landscape</td>
<td>‘Villa Urbana: Design of an Experimental Villa’</td>
</tr>
<tr>
<td>Quarter 2: Urban Landscape</td>
<td>Teatro Urbano: Park Design in Urban Transformations’</td>
</tr>
<tr>
<td>Quarter 3: Dutch Lowlands</td>
<td>New Dutch Waterscape</td>
</tr>
<tr>
<td>Quarter 4: Elective Studios</td>
<td>Heritage Landscapes Landscape Architecture on Site Smart Infrastructure and Mobility</td>
</tr>
<tr>
<td>Graduation Laboratory</td>
<td>Flowscapes</td>
</tr>
</tbody>
</table>

FIGURE 2. Organization of the studios in TUDelft and number of interviewee
has been appropriated in TUDelft Landscape Architecture master track design studios, based on eight interviews with tutors of seven design studios, exploration of quarter guides and final submissions of the students to the studios.\(^4\) (Figure 2)

SITE SPECIFICITY AND EXPERIENCE OF LANDSCAPE

TUDelft Landscape Architecture studios provide a rich palette of diversity in developing methods on place-making and phenomenological understanding of landscape in the design studios. In the *Q 1: Villa Urbana*, students start design by choosing their actual boundary site for design which means site selection is already a design. To find an actual location for the villa, students are directed to discovering the site specific qualities of landscape. The design is used as a basis for investigating the hidden qualities of the landscape (Quarter Guide Q1: Architecture and Landscape', 2014-2015) and discovering sensuous qualities of place which is more depended on how observer conceives, perceives and acts in the landscape (Quarter Guide Q1: Architecture and Landscape', 2014-2015).

*Villa Urbana*, puts special emphasis on experience of landscape as one the programmatic element of the studio. In studio guide, Quarter Guide Q1, landscape is defined as the ‘experimental field of architecture’ (Quarter Guide Q1: Architecture and Landscape', 2014-2015). The students develop their designs by considering experiences of different user groups given as near blind daughter, villager, forester and visitor. The studio also uses the *narrative design* method as a tool to develop the sense of place and site specific experience.\(^5\) It focuses on changing experience through movement. Students develop at least four different paths, narratives, sequences of events, to be experienced on different or overlapping routes and personalities (Quarter Guide Q1: Architecture and Landscape', 2014-2015). (Figure 3)

Studios, *quarter Q3: New Dutch Waterscape and quarter Q4: Heritage Landscapes* put Dutch landscape characteristics of water and the Dutch waterline heritage as the focus of design. In *Q3: New

**FIGURE 3. Experience of landscape through moving along a route. Student work: Malexan, Quarter 1: Villa Urbana, 2014. Studio coordinator: Saskia de Wit**
Dutch Waterscape, the atmosphere is the emphasis of the design. The form, materialisation, and sections are tools to carry of the information of the place, the identity, and the atmosphere. Accordingly, in Q3: New Dutch Waterscape, student work focus on the characteristics of landscape distinct from Q1 Villa Urbana's work that focus on experience. In the Q4: Heritage Landscapes introduces stories, concept and value assessment as frameworks of design. Understanding and interpreting the stories of heritage is referential for design. By means of stories, students discover tangibles and intangibles (story of Dutch waterline) input. The studio also integrates value assessment into design. Students interpret city and object scale variables of values defined by Cultural Heritage Agency of Netherlands through their own personal attachment to place.

In Q4: Landscape Architecture on Site, the experience is not limited with design per se. Students construct a preliminary design for an outside-exhibition. The construction of the design is an experience per se of which ease of construction, materials and detail solutions should be considered. The design is improved in terms of enriching the experiences of the visitors from sensuous experiences to functional requirements i.e.putting the bike, entering the site, having some spots along the site etc. (Figure 4)

MULTI-SCALE PERSPECTIVE IN TUDELFT LANDSCAPE ARCHITECTURE MASTER TRACK
TUDELft Landscape Architecture Track consists of mainly two strategies in moving between scales. The first approach takes its method from planning profession, which defines the scales distinctively and moves from upper scale to lower scale to identify the multiple contexts of urbanism. In Q2: Teatro Urbano, the studio identifies three distinctive scales where landscape operates in different ways: regional, district and component scales which are hierarchically and distinctively defined. In the regional scale, students analyse the urban metabolism through natural-cultural processes within elements of: water, biota, traffic, food, rubbish, air, energy, earth. In district scale, landscape patterns related to functional, spatial, visual structure and form of the city. At the component scale, they provide design-technical resolution of individual urban landscape components. Here, shifting scales implies moving between different meanings of the territory, different contexts and variables. Similarly, Q4: Smart Infrastructure and Mobility Studio, inserts its methods and instru-
ments from urbanism and planning profession. The studio focuses on aspects of metropolitan mobility, water management and urban design in a developing context (reflecting on the concept of ‘multiple use of water’) (Studio Guide, Elective AR 0027: Smart Infrastructure and Mobility, 2014-2015). The students move into scales from macro, meso to micro scales. In both studios the boundaries of the scales are given. Accordingly, the context is dependent upon the actual scale that is already defined. (Figure 5)

The second approach takes landscape as the organizing element for design in which scale and context is landscape-depended. In Q3: New Dutch Waterscape, it is the waterscape, in Q4: Heritage Landscapes, it is the heritage, which provides the framework for moving between scales and the link between the scales. The landscape element “water” or the “heritage” is as guiding themes of the studios and, every inquiry, any design problem or design possibility on these themes bring in their own scale and context in a non-hierarchical way. (Figure 6)

The Graduation Lab: Flowscapes is a one-year long research based studio in which students develop their own research projects from problem definition, description of research questions, development of a method for the design and providing design experiments for specific areas. The studio has a special emphasis on “flow” which refers to movements and processes (Nijhuis and Jauslin, 2014). Understanding flows requires exploring site beyond its official boundaries. The spatial framework is given by the Rhine-Danube corridor, connecting nine countries; students develop their research on a specific area. Moving between scales is related to the problem definition. Multiple scale research is needed to identify the context of the problem which is sometimes local sometimes global. Thus, there is no defined protocol on beginning from large scale to move into small scale in the studio (Nijhuis, 2015). Also there is an interchange between specific and generic.

In the lower scale, design experiments to be tested to develop not only site specific solutions to the specific problem but also providing generic strategies for similar places.

**TEMPORALITY, CHANGE AND PROCESS IN TUDELFT LANDSCAPE ARCHITECTURE MASTER TRACK**

Landscape architecture’s main difference through other design disciplines is its living material. Thus, temporality of landscape has always been one of the essential themes of the discipline. However, since 1990s, by transferring open ecosystem approach to design, landscape urbanism evaluates landscape as an ever-evolving, adaptive and self-organizing and operative phenomenon. It focuses on regularities, rhythms, cycles and sequences in landscape changing with seasonal or daily temporalities on site, called as **processes**. Henceforth, site analysis is based on exploring how cultural and natural processes were interrelated in the past and how the site came into being, furthermore questions like what changed and what remained the same. It is not only discovering seasonal changes, but more about ‘how landscapes work, what they do, how they interact, and what agency or effects they might exercise over time’ what James Corner (1999) calls **landschaft**. This exploration helps anticipating the future of a given site and how landscape as an agent could generate processes on site. Accordingly, landscape urbanism practices focus on ‘adapting to changing conditions rather than forms that conform an aesthetic whole’ (Berrizbeitia, 2007, 178). The temporality of landscape is also incorporated in the implementation phase, particularly in phasing of design which includes developing scenarios and steps to reach the final situation of design.

In TUDelft Landscape Architecture master track temporality of landscape is mostly evaluated within seasonal changes, changing water levels, flood ranges etc. This is because the Netherlands
has an unique conditions for situating below sea level. However, less number of students prefer to develop design strategies working in harmony with these processes. (Figure 7)

A strategy of temporality that is involved in studios is phasing of design in developing steps to reach the final design. Q1: Villa Urbana embraces landscape ‘in terms of time and space’ (Quarter Guide Q1: Architecture and Landscape, 2014-2015). To make the time aspect more explicit, the design assignment includes developing scenario of how design will develop in time intervals of 2018-2028-2058. The students develop their design by incorporating time aspect, investigating ‘how to influence the process by design and how to give architectural expression to the natural processes’ (Quarter Guide Q1: Architecture and Landscape, 2014-2015). (Figure 8)

Graduation Lab: Flowscapes studio focuses on the interaction taking place by flows (movements and processes) and spatial entities (natural and human systems) (Nijhuis and Jauslin, 2014). It introduces process driven approach, defined in the studio guide as: ‘landscape gains an “operative force” in territorial transformation processes’ (Nijhuis and Jauslin, 2014, 12). Here, landscape is defined as an agent to trigger change on Danube-River corridor. This approach is not obligatory; but left to students’ preference. Moreover, the studio provides a strategic design approach, in which students directed towards “not to design everything but to design conditions” (Nijhuis, 2015). As a research based project, students develop a long-term strategy towards planning and design.

CONCLUSION

Landscape urbanism provides some newly emerging themes such as experience of landscape, multi-scale perspective to landscape and temporality of landscape. These generic themes offer methodological openness and diversity of practical methods and techniques in landscape architecture education.
Landscape architecture education in TUDelft provides a large palette of tools for improving place making by discovering sensuous and experiential qualities of landscape. There are different roles attributed to design studios in TUDelft such as: choosing consciously a site; story building; atmosphere; movement and experience; value assessment; constructing, adapting and visiting the design. Undefining the boundaries of a site improves the relational understanding of a site in studio and makes it necessary to individually discover the unique qualities of a specific area. Stories, narratives, values and atmospheres help students to discover the specific character of place and moving into materiality, landscape sections and details. Rather than focusing on programme and social spots, designing experiences along the path improves the open space design from place-making perspective. It allows a landscape program that is flexible and more emancipatory. Constructing and visiting the design enables students evaluating design from different perspectives, discovering each’s limitations and possibilities.

In developing multi-scale perspective to design, Q3 New Dutch Waterscape, the Q4: ‘Heritage Landscapes’ and Graduation Lab: Flowscapes studios put landscape as the structuring element of design. This understanding brings landscape-depended moving between scales in a non-hierarchical way. The landscape element brings various scales with respect to its own networks and contexts. In addition to using the methods and techniques from the planning discipline such as hierarchical organization of scales and context, categorization of landscapes into layers etc. landscape architecture in TUDelft develops its own methods and techniques by combining large-scale strategies of regional design with site-specific design perspectives.

In TUDelft Landscape architecture studios, temporality of landscape is mostly evaluated within changing water levels with respect to seasonal changes. There is less emphasis on landscape urbanism’s strategies of incorporating self-organizing systems into design, performative role of landscape...
and adaptive processes. Rather, development of design in phases is a method preferred by Q1 and Graduation Lab. This is why landscape architecture is still developing its methods and tools to discover flows and dynamics in addition to established techniques for spatial practices. Landscape architecture requires additional instruments to explore processes and flows in the landscape. As Sanford Kwinter (1992, 64) claims ‘we need [...] representing multiple play of forces across all the dimensions of space at a single specific instant in time’. Landscape architecture should further develop its own instruments on understanding dynamics, connections, links and relationships; relational networks of artefacts, organizations and processes and in-between spaces. Because the essence of landscape urbanism lies in relationships and dynamics between parts.

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THE GARDEN AND THE LAYERED LANDSCAPES: LANDSCAPE URBANISM THROUGH THE LENS OF GARDEN DESIGN

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KEYWORDS: landscape urbanism, garden, spatial design, St. Catherine’s College Quadrangle.

INTRODUCTION
In the era of globalization, also landscape architects and urban designers have learnt to think big—in large scales and far-reaching visions. Landscape is called upon as the model and the medium of urbanism, feeding into a grand narrative of saving the day when architecture as the ordering principle of the city has become obsolete or inadequate. The horizontality, large scale organisational techniques, and landscape processes associated with landscape are called upon to provide a new understanding of urbanism, able to solve the problems where the classical architectural repertoire falls short. (Waldheim 2016, p. 3; Corner 2006, p. 23) Understanding the fluid or changing nature of any environment and the processes that effect change over time, landscape urbanism is concerned with a working surface over time—a type of urbanism that anticipates change, openendedness and negotiation. This suggests shifting attention from the object qualities of spaces to the systems that condition the distribution and density of urban form. In this vision however, landscape is indeed the carrier of urban developments but has no independent formal status. (Steenbergen and Reh 2011, pp. 428-430)

On the other hand, we can observe tendencies to think small again: design interventions on the neighbourhood level, transformations of unused spaces through low-cost, bottom-up actions, awareness rising and community building projects that shape space temporarily. Unfortunately, the tendency to involve users and actors in the design, is associated with a crumbling attention to spatial design and the associated notions of place, space, and form.

Space does not emerge naturally when social and landscape processes and a sustainable programme are addressed, so aren’t we thus letting go of the specific spatial and experiential qualities of the landscape and of the architectonic culture in which these landscape qualities can manifest and develop? Of the associated notions of place, space, and form that a landscape architectural lens, rather than a landscape lens, could provide?

The garden has always been a place where urbanism, architecture and landscape are seamlessly intertwined. It is also a small and defined object with a formal, spatial design, which does not appear to deserve a place in the definition of landscape urbanism. If we were to give it a place, what could that be, and what can landscape urbanism learn from the design of gardens?
METHOD

Rather than viewing landscape urbanism as a new member in the growing and hybridizing family of design disciplines, it might be helpful to realize that in essence urbanism already is nothing more than a new layer of the already layered landscape; urbanism based on landscape principles is from all times. (Steenbergen 2008, pp. 114-115; Van der Velde and De Wit 2010) In the following section I will unravel these different landscape layers, with the layer of the urban developments (either designed or naturally evolved) as one of them. Gardens are reflections of these different layers of landscape, regardless the urbanity or non-urbanity of their context, and as such have the ability to make connections and catalyse new developments. (Hunt 2000; De Wit 2014)

A striking example is the quadrangle of St. Catherine’s College (1960) in Oxford by Arne Jacobsen, transferring a traditional Oxford courtyard type to the open landscape of the river meadows. The garden connects the different functions—changing over time—within the college, as well as in the city and the fields. And it reflects the different layers—natural, cultural and urban—that characterize the development of the Oxford urban landscape.

LAYERED LANDSCAPE

The change from a city in the landscape to the city as a landscape is generally considered a contemporary development. However, in its essence urbanism already is nothing more than a new layer of the already layered landscape.

The landscape can be considered a dynamic system, continuously transforming under the influence of societal needs and demands. These transformations create a stratification of different formal systems: the natural, cultural, urban and architectural landscape. The physical appearance of a given location is never the result of only the last transformation, but shows traces of the ones before; it is an accumulation of systems or treatments that have piled up and acted upon one another over time.

This stratification steps off from the natural landscape. We can imagine its form as being built up from a number of “basic forms” whose physical appearance is defined by the relative strengths of land, water and wind. This natural landscape is also as the raw material for the process of cultivation, which created the second layer: the cultural landscape. The configuration of different forms of reclamation is the result of the interaction between the existing natural form and the efficiency of geometrical patterns resulting from the technical logic of cultivation, irrigation and drainage. (De Wit 2003, p. 112) The natural and the cultural landscape form a close-knitted unity, constituting what is generally considered as “the landscape”. Here the qualities of the landscape, the natural processes, the longue durée of evolution and natural growth, silence, emptiness and the horizon are apparent.

In every garden, however conscious or explicit, aspects of both the natural and the cultural landscape are expressed. This is aptly represented in the diagrammatic drawing that was used as the frontispiece to Abbé Pierre le Lorrain de Vallemont’s widely published book Curiosités de la Nature et de l’Art (Curiosities of Art and Nature in Husbandry and Gardening) (1705). Here agricultural fields succeed the garden, and the view is terminated with wilderness: a lumpish hillside from the bottom of which gushes a natural spring. In the other direction—back towards the viewer—the sequence is similar: first the ordered garden, then a grove of regularly planted trees, then wasteland. (Hunt 200, p. 33) (Figure 1)

In these interpretations the natural and the cultural landscape are described as the two layers constituting the landscape that was reflected in the garden. However, the art of gardens as it was understood has a broad scope, constituting art as well as labour and technique. Art, labour and technique can be argued to be expressed in the urban landscape—which for its part arose out of a civil engineering process enacted on both natural and cultural landscapes, and is composed of
cooperating urban elements, connected by a transport network. Thus landscape comprises the urban landscape as well, forming a third layer. Urban programmes for dwelling, work, leisure and transportation lay down rules for the physical environment, as a reflection of the internal logic of flows of vehicles, money and information, the technical and durable network of underground infrastructure, the relation between public and private and the ruling views of power, justice and culture. As Arnold Berleant (1997) has observed, the built environment is not necessarily opposed to countryside or wilderness. The city is a particular environment, made from materials obtained or derived from the natural world and with the same perceptual elements as other environments. An urban environment is an integral part of the geography of its region, from which it usually has no sharp boundaries and with which it has a reciprocal relationship (p. 33).

Already in the Renaissance, when the theory of the garden representing the two natures was developed, the interplay between architecture and landscape was included in the city, where the repertoire of the garden was converted into instruments for shaping collective urban spatial forms. The Orti Farnesiani in Rome (1556) was transformed in several stages from vegetable gardens into a complex ensemble integrating historical buildings and ruins of the old Rome. (Figure 2) It became an urban garden with a public spatial system, which played an intricate architectonic game with the topography.

Even in the traditional, centralized city, surrounded by open landscape, landscape and city are interacting entities. The contemporary landscape can be considered an overall hybrid of all shades of urbanization, which is not so much a new concept, but a change of emphasis, in which the boundaries have blurred and thickened until they began to take more space than the original counterparts.

**ST CATHERINE’S COLLEGE QUADRANGLE**

An example of a design that not only reflects the different landscape layers, but plays a role in...
activating the connections between the different spatial forms that constitute the metropolitan landscape, are the gardens of the St. Catherine’s College in Oxford. (Figure 3) The college is built on a river island just outside Oxford city centre, in the floodplains of the River Cherwell. (Figure 4) With his design Arne Jacobsen transposed the urban typology of the college to the open landscape, opening up the spatial composition without corrupting the basic central organisation of the college type.

The Modernist idiom of objects in a spatial continuum—determining the building volumes—is turned around by the use of planting, which creates enclosed spaces. (Fig. 5 and 6) Aided by these spatial determinants the central quadrangle mediates between the dense urban fabric and the wide, but delineated landscape space of the river meadows. It does so by combining spatial characteristics...
FIGURE 5. The Modernist idiom of objects in a spatial continuum—determining the building volumes—is turned around by the use of planting, which creates enclosed spaces. (Drawing by author, 2013).

FIGURE 6. The planting defines the spaces. (Photograph by Sebastiaan Kaal, 2011).

FIGURE 7. The buildings follow the Modernist idiom of objects in unbounded space. (Photograph by Sebastiaan Kaan, 2011).
of the open river landscape and those of the building type of the college, connecting to the city in
typology, connecting to the floodplain in position and composition. The quadrangle is the pivot
point, a fixed moment of standstill in between the spatial sequence, linking the college to the
city centre, and the outwards oriented organisation of space, relating the college to the meadow.
The basic idea of the college as a miniature and to a certain extent controllable society has always
been reflected in its form, as an introverted unity, around a strongly defined centre, but affected
by the influences of its urban surroundings. St. Catherine’s appears to be returning to the ideal
form, out in the fields without urban interference. (Fig. 7) The ideal scheme of the monastery—a
bounded settlement with its orthogonal configuration of building volumes around a centre —
merges with the modern ideal of the city—with separate building volumes free in space. Unaltered
by its surroundings it is placed as a “seal” in the curve of the river Cherwell. (Fig. 8) Yet this generic
seal gives room to local qualities, never in the foreground, but present throughout: its references

FIGURE 8. The college, built on a plateau following the principal directions, is like a generic ‘seal’ in the land-
scape. (Drawing by author, 2013).
to Oxford urban forms, its programmatic loyalty to the typical college, its spatial sequences, and its pervading auditory and olfactory stimuli. (Figure 9) The generic seal colonises the landscape as open space within the metropolitan landscape; the local qualities it holds make the generic open landscape the specific open landscape of the Cherwell river meadows.

Although St. Catherine’s is situated in the fields, it is the connection to the urban network that is self-evident; the connection to the rural network is informal and almost invisible. While the college is directly bordering the Cherwell, its boathouse, shared with other colleges, sits at the River Thames. Several other college functions—playing fields, chapel and some college flats—are also outside the college, scattered through the city. (Figure 10) This creates a network of college functions specifically used by St. Catherine’s residents, overlapping the urban network where the different populations meet. To reach the fields one would need to know where to look. A barely visible footpath that branches off from the entrance road gives access to the fields. It connects to the network of public footpaths, bicycle paths and bridleways that criss-crosses along the Cherwell, an informal and hardly visible, but densely knit connection between the public and private parks, and sports fields. However, visually the fields participate in the urban routing, as an inconspicuous endpoint of the urban routing. The college is like a filter between city and fields. These networks are connected by the quadrangle, which is like the central hallway, the traffic hub of the college. It is a component of the urban programme, and plays a vital role in the obligations and regulations of active daily life. (Figure 11)

**DISCUSSION**

As a modern design the St. Catherine’s quadrangle seems to stand for everything that landscape urbanism does not: trying to contain the dynamic multiplicity of urban processes within a fixed spatial frame. But this fixed spatial frame is programatically so flexible that is easily connects the different functions—changing over time—within the college, as well as in the city and the fields. It
FIGURE 10. The open river meadows hold urban programmes, like sport fields and nature reserves, and college functions are scattered through the city, creating a network of college functions, overlapping the urban network. (Drawing by author, 2013).
also reflects the different layers—natural, cultural and urban—that characterize the development of the Oxford urban landscape.

Within a traditional urban-landscape dichotomy there would have been two choices: incorporating the location into the urban fabric or preserving the site as open landscape. Instead, the design equally reflects the urban and the landscape conditions, giving room to local qualities, and highlighting the possibilities of the open landscape as integral part of the urban landscape. On the larger scale the galaxy of quadrangles that defines Oxford serves as model for urbanism, not so much determining the city, but as a layer projected on city centre, outskirts and river meadows, an open-ended pattern stripping away the duality of inside and outside, of city and countryside. (Figure 12) St. Catherine’s College Quadrangle shows that such a strategy does not belong exclusively to the urban realm. It uses the tools and images of the landscape to relate to a range of specific conditions.

**WHY GARDENS MATTER**

To return to where we started: what can the landscape architectural notion of the garden contribute to the discourse of landscape urbanism? The example hints at three different viewpoints.

1. Thinking about the city through the garden. Within the field of landscape urbanism, which is studying the possible relations of landscape and urban developments, the garden could be a lens to understand these (possible) relations, as the discussed design shows: in terms of space and scale, conceptions of nature and the experience of landscape.
Landscape does not have one scale, but is continuous, relational and fluid, connecting all scales. Where landscape urbanism tends to focus on both large scale organisational techniques and horizontal, ecological and infrastructural connections, the garden as a rich and complex three-dimensional space (relying on both horizontal and vertical structuring) exposes the smallest landscape scale and its relations to the surrounding landscape spaces.

Also, where nature traditionally is represented by a pastoral scene opposed to the city, through urban gardens nature can be understood as part of city. Gardens expose nature as an integral part of the urban landscape. This notion has two sides. Firstly, the perceived duality between man and nature is dissolving. Nature is not only wilderness, but also part of everyday life and of the urban landscape. Secondly, nature no longer exists without human influences, is as much artificial as natural. Worldwide, there are more trees in parks, farms and other human environments than in the jungle. A single project for the extraction of tar sands requires as much excavation as all the rivers draining the world of sediment. (Sijmons 2014, p. 13) The garden has always been an artificial—artistic—reflection of nature, now it has become an artificial reflection of nature, which in itself is as much artificial as natural, a version of nature that Malene Hauxner (2010) dubbed “super-natural”.

The nearness of the garden space addresses more senses than just the visual one: tactile experience can only be found when the distance between the observer and the object is close, and the relative speed between them is rather slow. Therefore, gardens can give insight in the perception of the environment. The qualities of the landscape only become meaningful if they can be experienced, and gardens provide the conditions for multi-sensory experience, the sensory experience of nature, close to the skin, palpable.
2. The garden as an open green space. Citing landscape architect Jens Jensen, James Corner (2006) wrote that cities built for a wholesome life [include] the living green as an important part of their complex. This green complex comes in the form of parks and green open spaces (p. 24). However, we should not repeat the mistake of the Modernists to think that to define an open space as “green” will suffice to make it valuable in the reception and valuing by urban communities. An architectonic interpretation of this “green space” can mediate between man and nature. The position and design of gardens in urban landscape can be precise without being forceful.

As opposed to the intertwining of parks and green structures and a hierarchical and ordered urban composition, gardens can be aside of the urban tissue, and the expression of landscape is taking place within and in between those urban fragments, hidden and in the margin, indirect. Oxford is organised not as a coherent harmonious plan, but clotted around a myriad of quadrangles acting as cores of urbanisation, spread indiscriminately over city centre and open landscape. It is a flexible, open-ended system with an internal logic, dependant on time, coincidence and circumstance.

3. The garden as a laboratory. Gardens can show us how to take the landscape as the starting point for urban developments. They trigger the imagination. In many ways the failing of twentieth century planning can be attributed to the absolute impoverishment of the imagination to extend new relationships and sets of possibilities. I am aware that the contemporary landscape is characterized more by instable and dynamic processes than by the compositional logic that determines the gardens of St. Catherine’s College. System theory models seem to be better applicable than rational plans and spatial designs. However, if we would apply these models and allow the metropolitan landscape to arise as a logical consequence of integrating sustainable systems and processes, the spatial quality of our living environment would get lost in the process. The core business of a landscape architect will always be the creation of spatial compositions, however large the shifts in context and problematic, and what better laboratory and experiment is there then the garden? A laboratory other design professions don’t have. We are lucky to have this, so let’s start making better use of it.

ENDNOTES

1. To describe this, geologist and Nobel Prize winner Paul Crutzen has introduced the term Anthropocene, the “age of man”: the current era, after the Holocene, which humanity intervenes as a force of nature on earth.

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HOW IS STORMWATER MANAGEMENT REFLECTED IN PLANNING INTENTIONS, REGULATIONS AND CURRENT PRACTICE?
LØRENSKOG - A CASE STUDY IN THE SUBURBAN OSLO

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KEY WORDS: urban planning, stormwater management, flooding.

ABSTRACT
The study looks at how stormwater management is reflected within today’s municipal planning: Is there awareness and appreciation of the possible ecosystem services of water at the moment of deciding future land use?

The site-specific case study presented in this paper – Lørenskog, an adjacent municipality to Oslo – has been suffering from flooding and is at present one of Norway’s fastest growing municipalities. The recreational protected area Marka to the north and to the south meets the expansion of housing, logistics and the industrial areas that are located along the motorway E6 connecting to the Gardermoen Airport. Significant features include the urban expansion that replaces woodland along the river and worsens an already documented existing flood risk along Ellingsrudelva.

Here, there is a need for reading the territory from the urban perspective to the landscape and back again, in order to find solutions that are beneficial for both the environment and for the urban development.

INTRODUCTION
The research question posed in this paper is: What relation is there between planning intentions, regulations and current practices when it comes to ecosystem services and, particularly, stormwater management? In order to answer this question, I have studied current practices in the municipality of Lørenskog, and in this paper I include brief descriptions of three actual transformation cases within the municipality.

BACKGROUND
The swiftness with which natural resources are consumed implies that there is a need for awareness and for change. This study focuses on water in an area where important decisions on land uses are at play. Lørenskog updated its municipal plan in 2015, and it exposes the actual state of how stormwater management is reflected in the municipal planning practice today. It provides insight into what the intentions are and if, indeed, they are being put into practice. (Figure 1)

WORKING METHODS
The research is done through a case study, Lørenskog, which permits an in-depth understanding of a contemporary, context-related question (e.g. Bromley, 1986; Yin, 2013). The area of investiga-
FIGURE 1. Localization of the case study area Lørenskog. The natural reserve Marka is defined by the red line. Areas marked in black correspond to the flooding zones. (Plan by Elisabeth Sjödahl. source: http://www.geonorge.no. Accessed Feb. 2016)
tion is chosen for its documented flood risk exposure and urban pressure. The municipality has several ongoing projects in which it is possible to see the application of the intentions regarding water management.

Observations within the technical department of the municipality, carried out as part of my research, shows the concerns within practice (D. Fallmann, 2008). The engineers of this department are co-located with the technical maintenance staff, this gives them direct information on the problematic areas with respect to maintenance and flooding. However, there is an administrative separation between this unit and the planning department, which is situated closer to the politicians. Communication between these units happens through written recommendations and formal meetings. One of the challenges is that the municipality focuses on building as response to the pressure from urban developers’, while there is a scarcity of time for evaluating the future projects with regards to urban ecosystem services.

**STORMWATER MANAGEMENT IN PLANNING PRACTICE TODAY: LØRENSKOG**

Lørenskog, as well as in the neighboring municipality of Oslo, has a clear delimitation of the recreational protected area called Marka. It was initially defined by the height to which water could be pumped when it was established in 1934, and it largely followed the +220m contour line. The reserve is now regulated by law, (Lov 6. juni 2009 nr. 35). The major fresh water supply source for Oslo is today situated within this natural reserve, and it is thus an important ecosystem service. Lørenskog imports its drinking water from the river Glomma to the East.

One of the challenges for the municipality is the rise in precipitation intensity and the runoff water that this produces. This is in some parts due to an increase in built-up areas with impermeable surfaces, which has enhanced runoff, something that was demonstrated in the ’60s when US research showed that urbanization can increase the annual flooding by up to six times (L. Leopold, 1968). Another problem in Lørenskog is that the sewage system is aging, and pressure on it steadily increases because of urban expansion. (Figure 2)

‘Traditional storm drainage practice protects local streets, basements, and parking lots from flooding, while contributing to major flood damage downstream’ (A.W. Spirn, 1984, p. 131).

![Illustration](image-url)
Nationally, there has been a change in how water is dealt with when it comes to urban development. During most of the 20th century it was seen as positive to add rainwater in order to flush the sewage pipes (Johansen, 2001). Nowadays, with an increase in population and therefore a rise in the use of water, this has become a problem, and the pipe dimensions no longer support the rising pressure which occurs during heavy rains. Such events lead to an obstruction in the sewage network, and waste-water is drawn back into the system and into cellars in some parts of Lørenskog. This is a health problem and it is one of the threats of the ecosystem of rivers and lakes in Norway (NOU, 2013:10 p.13).

In order to counteract the storm water problem, a plan for reduction of runoff water from the built-up environment in the municipality is being developed. This can partly be achieved by ensuring that all runoff can be managed within the individual plots of all new buildings. Runoff water is not permitted into the sewage water system, and for newly planned areas there should be a plan of installations that store, infiltrate and clean the water from roofs and other impermeable surfaces. Owners of each plot are responsible for rain and snow management, and the municipality is in charge of public land and major floodways. In order to achieve this, new regulation plans are required to reserve areas for water management, including storage, infiltration and cleaning. In order to fulfill the planning intentions, different laws, regulations, indirect taxes and subsidies are important. Here follows a short overview of the most important planning parameters with respect to storm water management in Lørenskog:

**National laws.** There is no definition of storm water in Norwegian law and no overall legislation on it. Currently, the theme is spread over various laws and codes which mostly regulate the effect that stormwater has on activities and economic sectors the effect that activities and economic sectors suffer from storm water (NOU, 2015). The Water Resource Act aims to maintain the hydrological cycle balance and prevent flooding and inundation. It is prohibited to prevent the water from running into its natural watercourse. Interventions in watercourses that can reduce its capacity, including blocking or channeling, which can have negative consequences in case of heavy precipitation, is prohibited. Any intervention that can lead to a considerable damage or inconvenience to common interests is not permitted. A change in the waterway is therefore dependent on authorization from the watercourse authorities.

**Municipal regulations.** The Lørenskog Municipal Plan (LMP) has recently been updated for the period of 2015–2026. It stipulates that storm water should be handled locally within each property or planning zone. It should be handled, as far as possible, at the source in order to maintain the water balance. The natural floodways should be maintained, and the storm water is to be planned in ways that enable it to be part of the usable outdoor area, securing the biological diversity. Impermeable areas should be minimized (LMP 2015-2026 - Part 3 p. 15). The goals are in relation to water, to make risk analyses as a base for planning and reduce the probability and effects of undesirable events. The actions to be undertaken are:

- To pay attention to climate adaptation in municipal planning and not open up for expansion in flood risk areas.
- To prevent the effects of floods and landslides through local management of storm water and secure blue green areas.
- To have sufficient preparedness to meet probable risk scenarios.

(LMP 2015-2026 - Part 1 p. 13)

**CASE STUDY AREAS**

Here follows a short description of each case study area in order to see how the initial intentions in the municipal plan are implemented. The case study areas of Visperud and Fjellhamar are sites for expansion proposed within this municipal plan of 2015–2026 and the site of Vinterparken is proposed by private initiative.
At present, the technical department will analyze and define the floodways of Lørenskog during autumn 2016, and start work on modeling the terrain in order to establish and form the waterways of the municipality.

VISPERUD
Visperud is defined by The Norwegian Water Resources and Energy Directorate as an area of inundation. As late as in September 2015 the area suffered from flooding. (Figure 4, 5)

Recommendations in the municipal plan: The argument for further development of this area is based around transport facilities and the plan proposes more industry and large-scale commer-
cial activity. The river is mentioned as a quality that should be made accessible and function as a link between the urban structure and the natural reserve to the south. Important natural and environmental aspects should be safeguarded. Traffic is considered as the main risk factor in the municipal plan. (LMP 2015-2026 - Part 3 |p.25)

Comments: It is remarkable that nothing is mentioned about flooding in the LMP even though the first part of it mentions risk estimation and minimization, including “not to open up for expansion in flood risk areas”.

VINTERPARKEN
This project of 35,000m2 is an indoor ski center. Its footprint steps over the border of the national reserve Marka with approximately 4% of its extension. This exception is approved by the municipality and the regional authority (fylket). The project includes the closing of an existing creek, while passing though the project area. This waterway functions as drainage for the watershed of Marka and for the future development of the nearby housing area of Ødegård, where approximately 1,200 new housing units are planned. The indoor ski center in itself corresponds to a great roof surface, which will lead to even more runoff water. Even though the intention of the municipality is to open up the creeks, and despite the fact that the Technical Department of the municipality has remarked that the project is not satisfactory in respect to its management of
the runoff water, the project has at present not been modified to incorporate the aspect of storm water. (Figure 6)

Recommendations in the municipal plan: The paths that connect Haneborgåsen and Gjelleråsen and those with Østmarka along Ellingsrud river and the Lørenskog paths must be secured. North of the railroad, a connection should follow Djupdalsbekken. The Ellingsrud river adds quality within the area and the riverbed shall be made publicly available and elaborated as a park or as a part of a path system. Important natural and environmental qualities must be safeguarded. (LMP 2015-2026 - Part 3 | p.25)

Comments: The municipalities have a responsibility, by law, to provide adequate floodways. Allowing the new project of Vinterparken to channel the water through the site aggravates the inundation situation further down the watershed. The low point, 500 meters to the south, where the water runs into Ellingsrudelva, is a point that has already suffered from flooding as late as in 2015. Here the infrastructural network was blocked by flood water as the road is found in a lower level then the surrounding terrain in order to cross the train tracks.

FJELLHAMAR
Fjellhamar is in the eastern part of Lørenskog, situated along the train line 15 minutes from the Oslo city center. As depicted in the latest regional plan, the areas near public transport nodes are
considered potential development areas within the larger Oslo region. A zoning plan was initiated by the municipality in 2014. This plan demands an analysis of flood risk factors in the area. At the moment (November 2016), the municipality is waiting for each developer to make their proposals for their sites. At present, there is no plan for floodways or storm water management for the area by the municipality. (Figure 7)

Recommendations in the municipal plan: The area of Fjellhamar has been proposed as a local center with housing and school facilities next to the train station. The municipality is responsible for the overall plan and the developers should promote their plans within that framework. The river Fjellhamar should be seen as an area of importance and quality. The river bank should be made accessible as a park. Attention should be paid to important natural and environmental values. Concerning traffic, joint solutions for several properties for the delivery of goods, disposal of waste and rules for traffic security should be promoted. (LMP 2015-2026 – part 3 p.25)

Comments: There are various potential water-related ecosystem services that can be elaborated in the future development of Fjellhamar. These include provisioning services: collection of clean rainwater for irrigation or other uses, and the provision of drinking water. Regulation and maintenance services include: Reduction of storm water during heavy rains; cleaning of water from roads; regulation of the micro climate; strengthening biodiversity by creating a variety of habitats,
and reducing the pressure on the local sewage system which would result in less pressure and cost for the water cleaning infrastructure etc. In order to obtain these ecosystem services, they should be integrated early in the planning process.

CONCLUSION

The three case studies show that the question of storm water management is often ignored within planning, even in defined flooding areas.

The investigation of sustainable land-use planning in Norway carried out by the National Audit Office (NAU, 2006) indicates that the planning of future land use frequently does not follow national sustainability targets. The national guidelines underline that interventions within the protected rivers and waterways should be avoided, but the survey by NAU shows that there has been an increased construction along rivers in Norway from 1985 to 2006. In fact, this increase has happened to the same extent both in protected as well as non-protected areas. This means that there are fundamental changes in respect to given dispensations that need to be revised. Various minor changes can seem insignificant, but the sum of the whole can give completely different readings and effects in terms of flooding. When the dispensation becomes a rule, it puts the urban planning out of order. The present case study shows that this tendency is still a currently occurring event, even though Norway was one of the first countries to sign the European Landscape Convention (EUC) on the 23rd October 2001, and later put it into force in 2004. One of the concerns of the Convention is “to achieve sustainable development based on a balanced and harmonious relationship between social needs, economic activity and the environment” (EUC 2000). What responsibility does the entity and the individuals that give the dispensation have? And what responsibility does the Ministry of Climate and Environment have to follow up their commitments?

The municipality is today responsible for the floodways, which demands that they must take a leading role in obtaining an environmentally based planning model. Næss, L.O., et.al indicates that: “when strong local political and economic interests coincide with national level willingness to pay and provide support, measures are often carried out rapidly at the expense of weaker environmental interests.” (Næss, L.O., et.al, 2005 p.125). Today, plans are to a great extent initiated by the private sector (approximately 70% of the regulation plans that are approved are elaborated by the private sector (NAU 2006–2007)). This means that the larger scale elements that structure the site, such as the landscape’s topography and watercourses, might not always be taken into account. The territorial structures of the landscape have to be put forward, first and foremost, by the region and the municipalities, if the latter is to manage and secure the greater floodways. Planning in Norway has to re-establish an overall view, in order for the planning authorities to be capable of working with more meaningful stormwater management that is not merely derived from the perspective of a single site, but more broadly extends to a larger territory.

FIGURE 8. Fjellhamar, potential ecosystem services. Illustration by Elisabeth Sjödahl 2016.
ENDNOTES

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URBAN ECOLOGIES AND KEY PROJECTS:
INTERCONNECTED APPROACHES TO UNLOCK FRAGILE
LOCAL-REGIONAL LANDSCAPES

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FRAGILE LOCAL-REGIONAL LANDSCAPES
Urbanisation processes involve progressions of both concentration and extension and affect the transformation of all categories of landscapes by changing the distribution of resources, competences and decision mandates (Brenner, 2013). Emerging changes in networks, decision-making and growth premises cause vulnerable situations, both in areas of economic growth and in so-called declining environments, and will be discussed here as fragile urban landscapes: local-regional spatial situations and contexts suffering from inability for adaptation and transformation, due to for instance rigid planning organisations, or that the physical landscape cannot pursue needed changes to adapt to new conditions and objectives (Björling, 2016). In Swedish contexts, fragile conditions may appear in larger cities and for instance limit transformative capacity due to conflicts of interest between actors or land use claims. In small towns, stagnating economy, decreasing population or other limitations of resources can prevent actual changes. This study examines approaches that can provide planning practice with support to develop future directions for fragile situations and formulate alternative goals or objectives.

The research project has developed through an architectural, design-driven approach and extensive collaboration with local-regional planning practice in the Skaraborg region in Sweden. Participation with planning practice in smaller municipalities has made obvious that urban planning practice needs new concepts to describe and rethink current socio-spatial processes of urbanisation, and tools that support re-negotiation of the urban landscape in its full spectrum and from a multitude of centralities to implement relevant and resource-efficient change.

Our aim here is to clarify problem settings related to fragile urban landscapes and demonstrate how the concepts of urban ecologies as complex productive configurations and, through one small example, how key projects as specific strategic interventions have been used in the local-regional planning situations at stake to expand the local space of action and to establish conditions for transformations of physical space. This implies partly new mapping processes to identify and combine local resources, bridge gaps between planning and realisation of change, and to formulate development scenarios that involve well-grounded, local potentials and display alternative objectives.

Critical Swedish and international research show that planning and development has a dominating
problem focus set on larger city problems and particularly historic city centres (Massey, 2007; Tunström, 2009; Robinson, 2013; Fredriksson, 2014). The needs for more specific knowledge about sustainable development and integration of smaller municipalities to a post-industrial economy and sustainable development are therefore often neglected. Structural changes cause severe challenges when industry moves to new locations, adjusted to a global market of production and consumption and expansions of local-regional labour markets with direct focus to larger communities as hubs for regional economic growth. There is also a tendency that the economic growth paradigm regards redevelopment processes of smaller municipalities as part of the built-in creative destruction of advanced capitalism, thereby leaving the smaller units in a downgraded socio-economic spiral both on national and regional level. All together these changes form a discursive and material gap between experienced needs to change in order to match with, on the one hand, images of sustainability and success, often asserted as synonymous to the dense and multifunctional city (Tunström, 2009) and, on the other hand, the real preconditions to change the existing urban landscape. Here, lock-ins for spatial transformation as part of fragile urban landscapes indicate central problems in the ambitions to set requirements for sustainable development with resilient capacity to handle both immediate and longterm changes.

Fragile urban landscapes derive from site specific conditions but can be generalized as combinations of scarcity of resources, competences and decision mandates and rigidity in current organization. These characteristics can be clarified with the adaptive cycles of a systems, as described by ecologist C.S. Holling (2001), concerning how sustainable change develops in cycles where phases of exploitation and conservation alternate with re-organisation, but that the continuity may also get stuck in two types of exclusions: On the one hand a state of shortage where lack of resources prevents a process to recapture its phase of construction. On the other hand there may be a state of rigidity where the present organization does not open for release and re-organisation. (Figure 1) At the same time, Holling’s account for adjustment and “healthy” adaptive cycles must be dealt with carefully when transferred to democratic governmental rights and welfare society’s values of for example equality, gender balance and solidarity. Important questions then arise concerning who has the priviledge of interpretation and whose adjustment capacity and redevelopment processes will be prioritized (Purcell, 2002).
Of central concern, then, will be that planning processes can visualize how the urban landscapes are articulated and described and how they are concretely assembled, giving different geographical areas preconditions and limitations. The productive capacity of the urban landscape will thereby be a question of how it is arranged and what processes keep it together (Guattari 1989; DeLanda 2006). The urban landscape, as shown by Banham’s (2001) seminal work on Los Angeles, can be made visible as over-layered ecologies that establish conditions for society and individuals, and dictate spatial changes and localisations of various functions and programs.

**URBAN ECOCLOGIES AND KEY PROJECTS**

Influenced by Banham (2001) as well as works by Guattari (1989), urban ecologies have been used in our work to expose specific configurations of various components in the urban landscape with the intent to clarify and reveal its productive capacities. In mapping processes, components and relations can be tested in various configurations, and thereby shed light on different possibilities and constraints for transformation. (Figure 2) In this way urban ecologies can be a tool for sorting out capacities as well as limitations of the urban landscape for making changes. At the same time urban ecologies alter the modes in which the urban landscape is valued and what resources emerge, generating a two-way interplay between how the urban landscape and urban ecologies are produced and produce society’s and individuals’ abilities.

The concept of ecologies is used to emphasize that planning strategies need to consider humans as part of the ecosystems and to operate activities in our environments of both biological and cultural resources (Reed and Lister, 2014). Ecologies also address the need for an understanding of order, control and limitations emerging from dynamic relationships instead of static conditions, and in the navigations and renegotiations that appear in these situations. This reconnects
to recognizing that knowledge about what generates fragile urban landscapes becomes a challenge for urban planning in several ways, for instance because adaptive capacity is connected to stability thresholds measures where also small changes can cause radical systemic changes and an adaptable system conceals what is adapted by including it. Obvious signals of the system’s overall need for adjustment is thereby limited and this calls for approaches that can shift scales and perspectives (Holling and Goldberg, 2014).

To formulate and model alternatives to reveal potentials and spatial lock-ins concealed by current situation urban ecologies have been linked to what is here discussed as key projects, i.e. specific strategic interventions with the agency to enhance combined resources. Together these tools have proved to be useful to (i) clarify urban processes, (ii) identify assemblages of relevant contingencies and meaning for specific situations, (iii) reveal local-regional potentials and identify interventions that (iv) combine, re-combine and enhance available local-regional resources (Björling, 2016). Crucial here is to understand key projects from their projective and proformative capacity, that is, their ability to catalyze the change related to intentions in the modelled architectonic project (Cuff and Scherman, 2011). The project must therefore be regarded with outset in a continuously ongoing societal redevelopment process where interventions can be realized in limited time scope but where their effect may have far wider consequences in both time and space. The concept key is used to signify the capacity to open preconditions, start processes but also to lock transformations and ensure implementation. It also indicates the need to perform site specific projects for the unique preconditions of each situation, as general strategies lack the precision needed for the diversity of spatial situations.

SKARABORG, GRÄSTORP AND MARIESTAD

The empirical work is based on extensive collaboration with local-regional planning practice in the Skaraborg sub-region in Sweden. This regional area, which constitutes the overall geographical context for the study, is located between the two largest lakes in Sweden and consists of 15 municipalities with altogether 250 000 inhabitants. Since 1998 Skaraborg is part of West Sweden region, Västra Götalandsregionen. Due to demographic challenges like ageing population, low education and stagnation of economic growth Skaraborg is in a fragile condition to for example sustain welfare-systems, provide access to new infrastructure and affect directions for future change.

Mapping processes have been conducted continually in the work. Dialogue meetings with all municipalities have been essential to make visible regional differences and reach specific knowledge on resources, relations and barriers. The key projects have in this process been used as adapters between scales and to model alternatives depending on identified problems. By formulating alternatives, resources that are unrecognized in the present context can be disclosed. A central question in continuous dialogues with regional actors and the municipalities has been to clarify the ‘concealed’ preconditions: If the indicated resources exist, why are they not realized? This shift in perspective has often clarified what kind of spatial lock-ins are occurring and thereafter opened to specify what key projects need to be implemented.

The work has also revealed that aims and objectives for the regional development are directed by the larger cities’ challenges and by economic growth as general objectives for planning and governance. Political visions are clearly not grounded in real planning conditions but are shaped as wishing lists for future economic and demographic growth. Planning is therefore based on the dominating economic growth logics which forms Skaraborg as a fragile urban landscape. Instead of formulating alternative development strategies based on accessible resources, the gap is reproduced between future visions and present situation, with the consequences that available resources are suboptimized. At the same time Skaraborg is characterized by extensive exchange between municipalities concerning work, education and recreational activities, also including in-between rural areas. And so, alternative centralities and peripheries can be clarified if city-oriented mapping is challenged by other themes such as biological diversity, tourism or food production as well as
TECKENFÖRKLÄRING

Kartläggningen är resultatet av ovan redovisade kartor samt kartläggning av den rumsliga upplevelsen vid resor till och från Skaraborgs olika delar. Kartan är i det avseendet kvalitativt bedömd och öppen för förhandling om kategoriernas definition, avgränsning och namnförslag.

Tätort A, Handel, Högre Utbildning, Resecentrum/tåg
Tätort B, Handel, Grundskola
Tätort C, Dagligvaruhandel, Service, Bygdegård
Tätortsnära Landsbygd, Kultur- Naturnära
Besöksmålsnära Landsbygd
Glesbygd
Högproducerande lantbruk
Viktiga länkar (dialogmöten) viktade till nivå på arbetspendling
Viktiga sammanhang på landsbygden
Barriärer (föreställda, dialogmöten)

if the mapping is differentiated with startingpoint in the various geographical locations of the 15 municipalities. When these different refocused mappings are superimposed, much more diversified images appear of several thematic contexts and barriers. Altogether, geographical (thematic) and historical mappings have presented the regional map as overlaid ecologies that render the various Skaraborg parts different conditions to develop and contribute to the shared development.

(Figure 3) The map showing Skaraborg as a network region thus confronts perspectives on center and periphery and provides the different municipalities with opportunities to locally combine resources and potential from a range of ecologies. One example here is how the location and articulated potential of the small municipality of Grästorp changes depending on if it is regarded as a regional periphery or a link to adjacent Trestad labour market. By changing perspective in the description of Grästorp’s local and regional contexts, it is also made visible as a connection between the network of towns and major relationships for actors within tourism and food production. In this way, the local space of action in the development process has become expanded by visualizing Grästorp as a hybrid between town and countryside, and thereby envisaging a broader spectrum of local resources with outset in local food production and informal local associations. Combinations of these resources have later been tested by more indepth local mappings, and by formulating a number of local key projects interconnecting resources from different urban ecologies. Dynamic interplays between urban ecologies and key projects have supported the renegotiation of the location of Grästorp and served to coordinate local and regional initiatives.
Another example from participation in planning practice is the collaboration with the town of Mariestad that started in 2009. Mariestad has around 24000 inhabitants and was earlier the seat of county government and administrative centre for Skaraborg county. The new regional unification, implemented in 1998, changed Mariestad from being an administrative centre to periphery, also with geographical and topological consequences. At the same time new connectivity patterns, for example external trade establishments and closing of the commercial harbor, changed mobility patterns within, to and from the town of Mariestad which, in turn, has increased the urge to establish new links and collaborations in local and regional scale. One of the identified key projects is the realisation of The Tidan Walkway (Tidanpromenaden). The project aims to establish both a new connection and an accessible public space along the small river Tidan. In this way Tidanpromenaden constitutes a context that can prepare a more longterm redevelopment of earlier industrial areas along the river, to new use in a larger process of the industry's global structural transformation.

The realisation of the project has been a mode to test how local resources, in terms of how operative capacity of the municipal organization, knowledge in traditional carpentry and local building materials could be combined. (Figure 4) In this way the project, even if being a considerably small intervention, has had central significance to question present values of local nature resources and competences, establish a platform for negotiation about conflicts of changed land-use and addressing alternative ways of physical implementation.

CONCLUDING DISCUSSION: FORMULATED COMPOSITIONS
With experience from practice, fragile conditions can be transformed into possibilities to establish new alternative directions for development and to build consensus around a new shared strategy. The work in Skaraborg can in this perspective be understood as a process that has formulated a regional agenda for future development and established the region as a centrality of its own, with vast connectivity. The process of defining Skaraborg as a network-city with internal and external relations in all directions challenges the current understanding of Skaraborg as periphery to the dominant political and economic centers in West Sweden region. Instead, a network with multiple types of landscapes and dense links, internally and to surrounding regions, is envisioned.

In Mariestad, Tidanpromenaden is understood as an attempt to materialize a new way of articulating and combining local resources and logics from different urban ecologies, for instance the biological diversity of the river, skills taught at the university, knowledge about timber craftsmanship, and the implementation capacity of the municipality. The most concrete example in the project is how the point of departure in local oak-trees for the construction of Tidanpromenaden has...
stressed the need to rethink the relationships between the spatial, biological and cultural qualities of the trees and timber as building material. The project thereby expanded its key capacity both because it elaborates the relationship between local resources and local development and because it is the first example where the municipality and the craftsmanship centre collaborated through the whole design process.

Returning to Holling’s (2001) adaptive cycle, four alternatives have been identified that in combination can handle spatial lock-ins. First, resources, competences and mandates for decision-making can be added to a specific situation in order to bring it back into the adaptive cycle. A similar return to the adaptive cycle could be managed by breaking or reformulating rigidity. However, these two alternatives run the risk of leading back into the same fragile situation unless structural changes are also implemented. Instead, the third and fourth openings formulate a new composition that subsume the fragile condition in an alternative adaptive cycle. This can also be done by renegotiation of current organisations and current structures into a new coherence. We see here the potential to challenge a pre-dominant understanding of the urban landscape as adaptive self-organizing systems with an approach where the direction of these future alternatives of adaptation and self-organisation open as political negotiations and political questions about: Who is gaining and who is losing?

In order to secure a long-term, more balanced development there is need for a successive transformation that instead of choosing between society and nature, urban and rural, centre and periphery can develop hybrids. In this process urban ecologies as new layered configurated projections, together with urban key projects that materialize these projections, can be used as conceptual tools to think beyond current situations and guide renegotiations that successively and continuously change society, and can open fragile urban landscapes.

REFERENCES


EXPLORING DESIGN POTENTIALS IN POROUS URBAN SPACE:
SPLIT VISION URBANISM HK THROUGH MONTAGE

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KEYWORDS: Hong Kong, montage, collage, porous urban space, typology

ABSTRACT
Split Vision Urbanism HK is a design research project located at the intersection of urban governance, architectural design, and media arts. It seeks to critically address the relationship between formal and informal structures in order to uncover the hidden potentials of porous urban space, extracting new territories for design practices to engage the generative aspects of high density. Drawing on landscape urbanism’s critique on conventional urban planning, the project builds upon the tradition of exploring the potentials of places and spaces in urban culture through movement. The objective of Split Vision Urbanism HK is to detect, analyze, and evaluate the typological qualities of porous urban space, constructing a scenario framework for design intervention in high density. The project defines porous urban space as a spatial typology which tends to proliferate on an informal basis in high density, producing an interiorized environment of rhizomatic multiplicities that conflate the disciplinary differences between architecture and urbanism. Drawing on the hypothesis that porous urban space holds unexplored potentials for generative design practices, the project takes a series of city blocks located in Hong Kong’s Mong Kok district as subject matter of analysis to postulate a critique on the urban renewal processes that currently transforms Mong Kok from a porous and complex construct towards a deterministic constellation of figures and grounds. As urban renewal is orchestrated through the agencies that govern public space, low frequency recording of the discrepancies between the informal and the formal reveal differentiations between the outside and the inside of a city block. This split vision urbanism unfolds a territory for experimentation, where inconsistencies between formalized routines and site-specific potentials can be detected through audio-visual recording, and processed through literature reviews and design experiments. Examining the intersection between collage and montage for data collection and visualization, the project explores combinations of quantitative and qualitative data to extrapolate the complexities of porous urban space.

BACKGROUND
Split Vision Urbanism HK is a design research project that seeks to explore the typological qualities of porous urban space through experimental combinations of quantitative and qualitative data. The project is headed by Per-Johan Dahl, architect and researcher, with Caroline Dahl, urbanist and researcher; Peter Palvén, media artist and engineer; Hannah Marschall, landscape architect; and Kit Wai Chan Geoff, M.Arch. student at CITA at KADK.
Working from this interdisciplinary research platform, Split Vision Urbanism HK refers to porous urban space as a spatial typology, one that tends to proliferate at the intersection between formal and informal structures in high density. The project takes a series of city blocks in Hong Kong’s Mong Kok area as subject matter of analysis. Drawing on the research of the Greek scholar Stavros Stavrides on porous urban space, the project frames the alleyway as an agent of urban porosity in Mong Kok.\(^1\)

Stavrides’s scholarship on porous urban space has proven useful when analyzing Mong Kok’s alleyways. Building on Walter Benjamin’s interest in public behavior and spatial experience, Stavrides compares urban porosity with the mediating qualities of threshold space. Recognizing the ephemeral qualities of such space, he utilizes Michel Foucault’s heterotopia to confine urban porosity as other-places within ‘their surrounding spaces of normality […] being simultaneously connected to and separated from the places from which they differ.’\(^2\) By extrapolating Mong Kok’s alleyways through Stavrides’s scholarship, Split Vision Urbanism HK defines porosity as a public interiorized urban environment of rhizomatic multiplicities; one that conflates the disciplinary differences between architecture and urbanism.

While Split Vision Urbanism HK is primarily interested in exploring the typological qualities of porous urban space, it additionally postulates a critique on the urban renewal processes that currently transforms Mong Kok from a porous and complex construct towards a deterministic constellation of figures and grounds. By reconceptualizing Mong Kok’s alleyways, from a dilapidated place to a generative space, the project strives to reveal some hidden potentials in the porous urban space typology, which may have impact on how such space is perceived in contemporary discourse and debate. (Figure 1.)

**DISCOURSE REFERENCES TO LANDSCAPE URBANISM**

Recognizing the theme of the conference, Split Vision Urbanism HK did not emerge as a specific inquiry into landscape urbanist theory and practice. The project is instead contextualized in a general interest in urban conditions and characteristics, as well as in a commitment to utilize design disciplines when investigating means of intervention within those conditions.
The project argues, however, that the research constellation adheres to the discursive context of landscape urbanism, as formulated by Charles Waldheim. In his latest book, *Landscapes of Urbanism*, Waldheim clarifies that landscape urbanism is a discourse that evolved at the close of the twentieth century ‘to occupy a void created by urban planning’s shift toward a social-science model and away from physical design […], as urban design committed to neotraditional models of town planning.’ Recognizing landscape urbanism as a discourse within the urban design discipline that challenges neotraditional tendencies and directions, it may be fair to argue that *Split Vision Urbanism HK* adheres to the discursive context of landscape urbanism.

The project’s interest in the design disciplines draws on a conviction that progressive architectural culture is more relevant for research into complex urban conditions, than modernist planning tradition. Thus *Split Vision Urbanism HK* adheres to landscape urbanism’s critique on the efficiency of planning in contemporary urban development, which has been articulated as a core position by landscape urbanist scholars such as Mohen Mostafavi, Charles Waldheim, and James Corner. Corner, for example, is explicit when he clarifies that landscape urbanism ‘can be seen as a response to the failure of traditional urban design and planning to operate effectively in the contemporary city.’ Landscape urbanism is certainly not the first context in which such a critique has been postulated. The inability of modernist planning to respond to complex urban conditions has been widely articulated in design disciplines, at least since Voorhees, Walker, Smith & Smith published their report in 1958. But it may be fair to argue that the landscape urbanism discourse is, today, one of the most vocal protagonists in such critique.

Due to the project’s enquiries into Hong Kong urban space, *Split Vision Urbanism HK* adheres to a critique of the landscape urbanism discourse. The “landscape” in landscape urbanist theory commonly invokes the horizontal field as a model for use when thinking through, or acting upon, the contemporary urban condition. From Stan Allen’s ‘Thick 2-D’ to Mohen Mostafavi’s ‘surface [of] new and unexpected events,’ and Charles Waldheim’s sprawling shape of brownfields and infrastructures, landscape urbanism has propelled a discourse where the city is frequently perceived as a horizontal organization of complexities, or as Waldheim says, a ‘horizontal field of urban operations.’ Such horizontality has commonly been problematized with reference to the American city.

But Hong Kong demonstrates a completely different mode of urbanity. Hong Kong is a vertical agglomeration of disparate occurrences, which bear few organizational similarities to the American city. The social and cultural relationship to the ground, for example, differs radically in Hong Kong, which prompts new ways of navigating the city. And the commercial and administrative structures of Hong Kong have fully embraced the instant flux of neoliberal economies as a primary mode of materializing urban form, which has prompted a development procedure that abolishes most conventional relationships between state and industry. Hence, *Split Vision Urbanism HK* adheres to the critique on the dominance of Anglo-American references in landscape urbanism discourse, which has been articulated by, for example, Lisa Diedrich. The project is therefore interested in investigating the landscape urbanist discourse’s aptitude of rendering efficient scholarship beyond horizontal urbanity, to include also the vertical.

**RESEARCH CONTEXT**

When looking for radical verticality, Hong Kong’s Mong Kok area seems like the perfect match. Mong Kok is an area in the Yau Tsim Mong District of Kowloon, Hong Kong. With a population density that is more than five times that of Manhattan, the area is often listed as one of the most intense urban areas in the world. A fishing village during the nineteenth century, Mong Kok developed rapidly from the 1910s, when a new ferry pier created regular route between Hong Kong Island and Mong Kok. The influx of people and businesses escalated during the first half of the twentieth century. Reclamation and development projects from the 1920s to the ‘50s reshaped the coastline and added new land to host the booming population. Mong Kok’s gridiron, which
expands through the south bounding Ya Ma Tei and into the older parts of Tsim Tsa Tsui, where it morphs into an organic street network, testifies to the rather recent development of Mong Kok.

Mong Kok is characterized by a mixture of old and new multi-story buildings, with shops and restaurants at street level, and commercial or residential uses above. The size and expression of Mong Kok’s buildings stand in stark contrast to the homogenous grid, which serves as the organizing principle for the blocks. Heights and plot ratios vary. Some buildings occupy half a block, while others are less than five meters wide. As building details and signage have been implemented ad-hoc – often illegally – the tectonics of Mong Kok correlate with the extreme population density to create a hyper-intense visual and sensorial experience.

Mong Kok is administrated through Hong Kong’s statutory planning system, which controls planning objectives and verifies safety measures. The alleyways in Mong Kok derive from this regulatory system, where they have been inserted to provide a second means of egress from tall buildings. Slicing the rectangular blocks in longitudinal directions, they establish a regulated space which tends to be occupied informally. The alleyways provide alternative means of storage and commerce, while facilitating cross-ventilation and backlight for the small storefronts. They conflate dubious uses, such as prostitution and drug dealing, with community activities, such as lottery and trash recycling, to usher a programmatic intricacy beyond any zoning control. These merely informal appropriations of Mong Kok’s alleyways give rise to a space that challenges the conventional dichotomy of public and private, while catalyzing a complex configuration of continuity, performance, and excess.
The intricate – sort of cleftish – space of Mong Kok’s alleyways stands in stark contrast to the surrounding public space, which has been organized by the grid. When the alley space pierces through the surrounding building mass to reach the regulated city, it conflates specificities in tectonics, culture, and detail to produce a series of threshold spaces that, referring to Stavrides’s scholarship, both connects and separates. And it is exactly this intersection between formal regulation and informal action that has generated Mong Kok’s porous urban space. The research approach has therefore been to record the discrepancies between the formal and the informal, revealing differentiations between the outside and inside of the Mong Kok urban block. This split vision urbanism unfolds a territory for experimentation, where inconsistencies between formalized routines and site-specific potentials can be detected through audio-visual recording, and processed through literary references and design experiments.

MONTAGE
As previously mentioned, Split Vision Urbanism HK is interested in piloting a research process through experimental combinations of quantitative and qualitative data. The project is interested in data collection beyond empiricism, and believes that new approaches on data collection, dissemination, and assessment are essential for supporting visionary prospects. To activate such research, the project draws on Michel de Certeau’s call for ‘traverse tactics’ in direct observations of urban conditions.

While most enquiries into urban space typology are pursued through visual and textual data, Split Vision Urbanism HK introduces a layer of sensorial variation through audial data. Using sound, the project seeks to expand the experiential qualities of the research topic, while still articulating its interdisciplinary character. Data is thus collected through combinations of audio recording and photography. The photographic approach adheres to the disciplinary heritage of single-point perspective. When processed through photo collage technique, the perspective space is transformed into a rhizomatic realism that conflates the dichotomies of sky/ground, private/public, vertical/horizontal, and outside/inside. (Figure 2.)
For the representation of Mong Kok’s porous urban space, Split Vision Urbanism HK utilizes animation software as a platform for data evaluation and representation. (Figure 3.) The decision to instigate representation through animation software correlates with the general philosophy of the project, which is to explore the potentials of places and spaces in urban culture through movement. The theoretical framework for representation was formulated with reference to the montage technique. Utilizing animation software to examine the intersection between photo collage and montage, the project explores what Charles Waldheim refers to as ‘time-based media capable of reconciling the historic demands of landscape representation with contemporary visual culture and digital media.’

The montage is a technique that oscillates between visuality and materiality in representation. Montage was introduced to architecture, cinema, and the visual arts during the early twentieth century. While montage in architecture and cinema is contextualized in August Choisy’s examination of the Acropolis, montage in the visual arts derives from the Berlin Dadaist’s experiments of introducing photography into their works. British art historian Dawn Ades tells us that ‘Dada montage was invented […] within the context of, although in opposition to, collage [and that the] name was chosen, clearly, to distance the two activities.’ In her scholarship, Ades refers to two essays from the French poet Louis Aragon where he discusses the differences between collage and montage. In the essays, Aragon state that collages ‘have the value of a test, an instrument of control of the reality of itself of the picture [while the montage is] prophetic of the direction it is to take [thus] the thing expressed [in montage] is more important than the manner of expressing it.’

The capacity of montage to infiltrate the mere pictorial representation of reality with its meaning was achieved, as Rosalina Krauss states, ‘through juxtaposition: of image with image, or image with drawing, or image with text.’ Functioning as a field of operation, montage can be discussed as a technique for spatial inquiries where multiple representation tools coalesce to render what Walter Benjamin discusses as ‘antinomies of the allegorical […] where any person, any object, any relationship can mean anything else.’ Drawing on Benjamin, Split Vision Urbanism HK interprets the montage as a technique that vacillates between a holistic protocol and a fragmented assemblage of differentiations. As such it becomes useful when consolidating research methods and variables whose disparate techniques and scholastic cultures seek to render them incompatible. Rodolphe el-Khoury says that ‘montage denotes a kind of bricolage, a reorganization of existing material and codes.’ And it is exactly through the virtue of surpassing the limitations of dichotomy that the montage technique can be revitalized and activated in contemporary research context. At Split Vision Urbanism HK, such capacity instigates a research environment where pictorial, audial, and textual data are collected and assembled in multifaceted ways.

CONCLUSIONS
Split Vision Urbanism HK is an on-going design research project, thus the exhibition at the Beyond Ism conference at Alnarp does not present an end result, but rather the first evaluation of research findings. The project did not emanate from a certain set of research questions, which encompasses a mere conventional way of framing empirical enquiries. The project is rather contextualized in a general fascination about a specific spatial condition, and curiosity about disciplinary affiliations and hidden potentials. The first approach of Split Vision Urbanism HK has therefore been to orchestrate a research process that facilitates the collection and processing of both quantitative and qualitative data. We do agree that quantitative and empirical data is imperative for research on urban space phenomena, but we also argue that qualitative and speculative data is crucial for any researcher interested in extrapolating prospects for future design potentials.

While Mong Kok frames the area of inquiry, the porous urban space discourse is not limited to Asian cities. Walter Benjamin explored urban porosity in Naples, and Stavros Satavrides in Athens. Thus scholarship has been developed in European context, which suggests universal configurations. Data collection in porous urban space, however, requires innovation in method.
The conventional tools of diagram and drawing are tricky to use because the detail tends to be of equal importance as the total, and the relationships that ever since Nolli have guided urban analysis through two dimensional representations are not necessarily applicable in porous urban space. The collection of empirical data is equally problematic, because the informal, often illegal, activities that often thrive in porous urban space resists representation through conventional data. Split Vision Urbanism HK explores the montage as a data collection technique feasible to combine quantitative and qualitative inquiries in porous urban space. Despite operating beyond the conventions of drawing, montage additionally interconnects the second and the fourth dimensions in space analysis, which assist the project's objective to combine the detail and the total when exploring the potentials of places and spaces in urban culture through movement. To improve data on the cultural specificities and design potentials in porous urban space, the montage impetus may incorporate on-site construction that renders social interaction through design. Such expanded method would be beneficial for academic researchers as well as for design professionals, city administration, and the community.

ENDNOTES
9. The population density in Manhattan is 66,940 people per square mile (25,846/km²), see U.S. Census Bureau. The population density in Mong Kok is 130,000/km², see Rory Boland, “Welcome to Mongkok - Officially the Busiest Place on the Planet,” About Travel, http://gohongkong.about.com/od/whattoseehk/ss/MongkokLadiesMa.htm#showall.
12. For montage in architecture and cinema, see for example, Yve-Alain Bois and Michael Glenny, “Sergei M. Eisenstein: Montage and Architecture,” Assemblage, no. 10 (December, 1989). For montage in the visual arts, see, for example,


14. Ibid.


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URBAN SCAFFOLDING: A TOPOLOGICAL DESIGN TOOL

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KEYWORDS: topological design; urban scaffolding; multi-scalar design; design framework; design tool.

ABSTRACT
Landscape architecture, landscape urbanism, and urbanism provide a number of tools, methods, and techniques for the design of the built and unbuilt urban landscape. The interplay of these techniques is left up to the designers, and the resulting range of projects associated with the terms is broad and inconsistent. This paper proposes Urban Scaffolding as a way to reconfigure existing practices into a flexible, scalable, repeatable, and compact design mechanism that simultaneously discovers and intervenes in a territory. The method was developed through design projects that focused on reconnecting the urban and natural landscape by means of topological strategies. Two of these projects will be used as examples in this paper.

In this paper Urban Scaffolding is introduced both in terms of what it is, and what it can do. As a conceptual tool, it abstracts key relationships between a landscape’s scales, and prepares the ground for subsequent interventions. As a method, it uses the structural potentials of the existing landscape (i.e. water lines, ecological corridors) and urban fabric (i.e. road network, desired paths) to guide the development of territory by coupling social-ecological systems into a framework for development. As a topological device, the scaffolding consists of three components representing three types of connections—enforcers, gatherers, and explorers—capable of adapting to the particularities of each site. With this configuration, the scaffolding seeks to establish inter-scalar relations that facilitate access to local and remote resources, thus guiding rather than prescribing urban development. The method uses three non-metric scales: (1) the territorial scale (scale of context), defined by the watershed and the major urban activities connected to it; (2) the scale of the scaffolding (scale of focus), which identifies the strategic structure; and (3) the project scale (scale of detail).

Urban scaffolding puts forward a number of principles that prepare the ground for subsequent interventions that make use of existing landscape potentials. These principles guide the operations of the three components, actuate their coming together with the existing structural potentials of a landscape, and thus determine what the scaffolding can do:
1. Provide access to geomorphology and natural features;
2. Encourage heterogeneity and coexistence;
3. Unfold, encourage, and build upon existing processes and structures;
The paper is structured in two main sections. In the first section, two design projects, both competition entries, illustrate the use of the method: ‘342.914 km of scaffolding’, a strategy for the reintegration of Bucharest’s River Colentina; and ‘Three faces of Vernon’, a project in which the scaffolding is built on an inter-scalar topology. In both projects, water is the structure that is being connected to the surrounding urban fabric. The second section introduces the method, the tool and its components, with reference to the two projects described previously. In the conclusion, we present a reflection on urban scaffolding as a method for design its potential for in other spatial configurations.

**Introduction to Urban Scaffolding**

Accepting that the city is constantly changing and that its development cannot be precisely determined is a prerequisite for the well functioning of spatial interventions in the urban environment. The current paper departs from this observation and acknowledges the fact that the spatial configuration of the city is the sedimentation of a complex system of social and ecological relationships that presents a great challenge for the planning and design of the urban landscape.

In response to these challenges, Urban Scaffolding is a topological device that identifies and abstracts key relations and structural components as an interface between the urban and natural landscapes, preparing the ground for subsequent design interventions. Such a framework simultaneously discovers and intervenes in a territory while remaining responsive to its specificities.

In the two main sections of the paper, Urban Scaffolding is introduced both in terms of what it can do (as a design tool), and what it is (as a method). The first section presents two design projects carried out by the authors, during which urban scaffolding has been developed. The second section proposes urban scaffolding as a topological design tool by describing its generic characteristics and key components, the scalar framework in which it operates, and its adaptability. The paper ends with a discussion of the advantages and challenges of urban scaffolding as a method, outlining a set of recommendations for its future development.

**Two Projects**

In this section, two design projects—both international competition entries—illustrate the development and use of Urban Scaffolding. Even though located in very different contexts—Bucharest (Romania), and Vernon (France)—, both projects try to respond to the same fundamental challenges of social-ecological integration and adaptable design in the urban landscape while remaining responsive to an evolving and changing context. In addition, the river as a primary natural infrastructure is present in both projects—Colentina in Bucharest and Seine in Vernon.

**Project 1 - 342,914km of Scaffolding**

‘342,914km of scaffolding’ is a competition entry for the strategic reintegration of Colentina River’s pearl of lakes crossing the North of Bucharest (Figure 1).
Colentina river was transformed into a series of lakes in a large scale sanitizing operation carried out in the 1930s, intended to be used for recreation and sports. Today, it is a complex structure that consists of a topography shaped by the river and a complex web of planned and spontaneous urbanization interspersed with green spaces. These green spaces range from formal parks attracting visitors from throughout the city, to temporary spontaneous nature areas facilitated by abandoned properties. At the larger territorial scale, the lakes are a heterogeneous band spanning the length of the city with the hidden potential to form an ecological backbone for structuring the future growth of Bucharest.

As a site for intervention, the Colentina chain of lakes presents a double problematic: on one hand, its specificity, and value lies with the heterogeneity facilitated by its peripheral status, while on the other, these very same qualities disconnect it from the rest of the urban fabric. For instance, rather than trying to stop sprawl and uncontrolled urbanization processes, the strategy works with their dynamics, adapts to them, and slows them down in a three-phased process.

The proposed strategic module is composed by three elements, which target the lakes in a flexible but precise way (Figure 2): an inner ring that places the module at the lakeshore, an outer ring that links important elements from the surrounding urban fabric, and a series of radial links connecting the inner and outer ring. Together, these three components establish a deep connection between the lakes and the city, uncovering the existing potentials of the site, and re-organizing them into a set of prescriptions and simulations.

The module applied on each lake acts as a scaffold that identifies existing functions, elements, infrastructures in the urban fabric of the periphery, while physically linking the lakes together with a continuous, publicly accessible slow mobility network. In the case of Colentina, the flexibility of the module allows it to respond at three scales: (1) the scale of the lake, (2) the scale of the Colentina chain of lakes, and (3) the scale of the entire metropolitan landscape. The repetition of
the module across the city results in a scaffolding adapted to the heterogeneities of the periphery and can responsively mitigate any further interventions in a location-specific way. Once the scaffolding is set in place, the design interventions can be implemented as a series of prescriptions and simulations based on the uses, elements, possibilities and potentials uncovered in the initial application of the designed module. The method allows for these interventions to be generated and implemented by a variety of actors while maintaining overall cohesion.

The prescriptions for the Colentina lakes involve the structuring of residential growth, the reactivation of unused and former industrial spaces through temporary programmes, the cleaning of the lake water through a set of environmental protection policies, the implementation of reed-based filtering mechanisms, and the reinstatement of the lakes in the leisure and ecological networks of the city. The periphery, as envisioned above, is a garden of the city, in which forests, orchards and fields coexist with residences, leisure and public spaces (Figure 3).

PROJECT 2 – THREE FACES OF VERNON

Vernon is a thoroughfare, a town where one passes when travelling along the Seine or towards Giverny. At the same time, confined by the prospect of the valley, the perpendicular orientation of the city across topography is less territorial. Contrary to the frequent misconception that sees in-betweenness, confinement by topography, or rigidity of historical fabric as weaknesses, a new vision for Vernon needs to articulate these three qualities as the three ‘faces’ of the city’s identity. ‘Three faces of Vernon’ is a project that builds on three main qualities of the city of Vernon: in-betweenness (the valley as a morphological structuring element at regional scale), perpendicularity (a new transversal topology at the valley’s scale), and permeability (a sponge-like socio-spatial network at the scale of the urban fabric). Here the scaffolding uses these three hidden qualities as a basis to develop its three relational components.

‘In-between Vernon’ (Figure 4) is a social and spatial strategy that articulates scales, from the territory defined by the Seine down to the scale of local public space and services of the inner town. Vernon has a configuration of parallel spatial units developed along major infrastructural lines on the SE-NW direction: the Seine, the rail line, the major road line, the two ridges of the valley, the forests marking the plateaus, and the highway lines beyond the forests. “In-between Vernon” understands the type and speed of these parallel structures crossing the town and it creates possibilities for transforming the city into a destination.

‘Perpendicular Vernon’ (Figure 5 and 6) is a new topology meant to rebind the two banks of Seine from the railway station area, through the morphology of the urban fabric, and to its topography and natural surroundings. In conjunction with “in-between Vernon”, it slows down the flows crossing the town and places it on the map as a destination. The more strong the perpendiculars are, the more likely Vernon will become a place to visit. The designed links are mainly based on existing connections that may be supported in later phases of implementation by new links.

‘Permeable Vernon’ is a framework of spatial interventions in sites of opportunity in the city center. The sites can be divided in three large clusters, according to their role in the proposed topology: riverside areas; areas of and around the train station; and sites of the inner city meant to enforce the proposed transversal relations between the Seine and the train station. The train station and the shores of the Seine are priority structures, whereas the inner-town sites vary in priorities, depending on their position on the proposed topology.

In this project, the scaffolding takes a more orthogonal configuration, moulding itself to the contours of the valley, while the main focus is on enabling and scaffolding relations between scales (Figure 7). The outermost components take on the role of explorers, and seek out the relation between the transversal topology and the valley's topography in order to connect to the larger territorial scale. The innermost component closely follows the river and acts as enforcer of public
features and amenities. Last, the transversal links, acting as gatherers, uncover the potential of a middle scale and connect the other two components, discovering and activating the different faces or potential perspectives of the same territory.

In the case of Vernon, the scaffolding manifests as a spatial structure, which couples speeds. It is anchored to the high speed rail and vehicular link to nearby towns, while the riverside gains a new slow mobility routing that provides both amenities and access to the river. Within this middle scale of the valley, the transversal links not only connect the other two scales but are selected to enforce and increase the porosity of the urban fabric too. The city’s streets then become a porous series of spaces that emerges within the scaffolding’s confines. Within this, key areas are discovered and highlighted for their role as key connectors, providing strategic sites for subsequent interventions such as spatial improvements, (re)insertion of programmes, etc.

TOWARDS A THEORY OF URBAN SCAFFOLDING

In response to the complexity of urban dynamics, there has been a growing concern for more flexible design approaches, such as frameworks, adaptive planning, scenarios, or even rule-based or parametric urban design. The Strategy of Two Networks of Tjallingii (2005, 2015), the works of Bernardo Secchi and Paola Vigano (e.g. Vigano, 2016), and Branzi’s models for ‘weak urbanisation’ (Branzi in Mostafavi, 2013) are a few examples of such approaches. Urban scaffolding...
shares with these approaches that it is an abstract, relationship making-mechanism that structures growth rather than prescribed form. What urban scaffolding brings to the existing repertoire is a method, as described in the two projects above, which explores and builds strategies upon the existing field of processes and structures by means of a flexible and highly adaptable topological scaffolding.

While developing these strategies, we’ve noticed the emergence of a method and a number of potential results that we feel this method can achieve. First, it provides access to geomorphology, which means that the river and its valley are accessible to both the neighbour and the city dweller and that the city is part of and can benefit from larger landscape structures. Second, this method encourages further heterogeneity and coexistence. The making of a relational scaffold for future development allows for the existing context to preserve its specificities and further evolve its processes.

This ongoing method (1) works with existing structures; (2) acts as a topological tool; and (3) it establishes relations between scales. In general, the urban scaffolding mediates between contrasting or contradictory patterns of growth, making it a flexible framework guiding the integrated development of the urban and natural landscape.

(1) THE USE OF EXISTING STRUCTURES
Scaffolding, as interpreted in this paper, is not a closed mechanism. Rather, it is an open system in which the components and the links are predefined, while the ways of combining is endless. At the same time, a scaffold requires something to attach to. It is a support structure that is never independent of that which it supports, but always close to a complex organism, providing strategic, enabling links. Through these links, the organism’s functions are supported and streamlined, opening up new possibilities.
For Urban Scaffolding, this complex organism is the sum of key processes and structures identified in the urban landscape. In order to provide a site specific and adaptive response to an existing context, Urban Scaffolding first discovers the territory by identifying existing programmes, uses, functions and potentials. By using existing structures, a field of possibilities is uncovered, revealing the base structures upon which the scaffold can be constructed. In this field of possibilities, strategic selection is key in preparing the ground for future design interventions. Careful study of morphology uncovers patterns that contain a wide breadth of information on the emergence of the site. These patterns are natural (for example, geomorphology), man-made (urban morphology), or often both (for example, desired paths), and occur as the sedimentation of processes at multiple scales.

Through the scaffolding module, the designer is then able to intervene in this field of possibilities by choosing which existing processes and structures to reinforce and by revealing new relations between the elements identified in the field. Through its relational qualities, the scaffolding is able to uncover these relations without pre-assumptions on their form or format. Furthermore, the relational aspect of urban scaffolding allows a strategic design to embrace emergent and self-organized processes, while still providing an overall cohesion.

(2) TOPOLOGICAL CHARACTERISTICS

Urban Scaffolding proposes a topological device that has three components with three distinct functions: (1) enforcers; (2) gatherers; and (3) explorers. These components work together to uncover the field of possibilities in an existing context and to identify potentials based on certain criteria determined by each components’ function (Figure. 1). Through this process, the scaffolding sets in place these potentials with a set of relations that guide and encourage their future growth and unfolding.

The topological character of urban scaffolding allows for various spatial configurations of the same system of relations, site-specific flexibility, adaptability to ever-changing conditions, and the capacity to approach a site at multiple scales at once. As shown in Table 1, the two projects use the three components in different ways, while maintaining the same topological characteristics inherited from the scaffolding.

<table>
<thead>
<tr>
<th>The topological components of Urban Scaffolding</th>
<th>Project 1: 342,914km of scaffolding</th>
<th>Project 2: Three faces of Vernon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enforcer</td>
<td>Inner ring</td>
<td>Waterside promenade</td>
</tr>
<tr>
<td>Explorer</td>
<td>Outer ring</td>
<td>Regional infrastructure parallel to the valley</td>
</tr>
<tr>
<td>Gatherer</td>
<td>Radial connector</td>
<td>Paths perpendicular to the valley</td>
</tr>
</tbody>
</table>

Table 1: The topological components of Urban Scaffolding

(3) SCALE

Urban scaffolding is a multi-scalar approach, in the sense that, when applied, it addresses multiple systems on different scales. While discovering the territory at multiple scales, the components of the scaffolding uncover and establish relations between scales, mapping out a network of resonances within a territory that can then be activated through subsequent design interventions.

Urban scaffolding uses a three-level hierarchy of spatial-temporal scales: the territorial scale (scale of context), defined by the watershed and the major urban activities connected to it; the scale of the scaffolding (scale of focus) identifies the strategic structure; the project scale (scale of detail)
explains the components of the scaffolding. Table 2 shows how these three scales have been applied in the two projects.

<table>
<thead>
<tr>
<th>The scales of Urban</th>
<th>Project 1: 342,914km of scaffolding</th>
<th>Project 2: Three faces of Vernon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Territorial scale</td>
<td>The metropolitan landscape of Bucharest</td>
<td>The Paris-Le Havre corridor along the Seine</td>
</tr>
<tr>
<td>Scaffolding scale</td>
<td>The pearl of lakes crossing the city of Bucharest</td>
<td>The valley and its transversal occupation by the city of Vernon</td>
</tr>
<tr>
<td>Project scale</td>
<td>The lake and lakeside urban and natural areas</td>
<td>The pores of potential sites for development in the urban fabric and the riverside promenade</td>
</tr>
</tbody>
</table>

Table 2: The scales of Urban Scaffolding

**FLEXIBILITY AND NEGOTIATION**

Urban scaffolding proposes a rule-based topology, meaning that it can evolve through time as long as the relations between components follow a predefined set of rules. This rule-based approach raises several challenges: future spatial configurations cannot be foreseen, the time required for the development to a desired state is difficult to determine, and there is inevitably conflicting and contradicting development that must be negotiated.

To mitigate these challenges, Urban Scaffolding negotiates between fixed and flexible elements with all three strategic components. This means that the scaffolding is not prescriptive or fixed to the existing components of the landscape, but it allows for unforeseen relations to emerge in a field of site potentials. The scaffolding determines types of relations constructing a framework for the negotiation of conflicting interests. By operating at multiple scales, the scaffolding ensures that no single element monopolizes a certain scale, and allows for the middle scenario to emerge.

**DISCUSSION AND CONCLUSION**

How does Urban Scaffolding fit into the arsenal of design tools and methods used in urbanism, landscape urbanism, and landscape architecture? Throughout this paper, we set out to present the first steps in the development of Urban Scaffolding, a tool and method which tries to improve the designer’s response to site specificity and to the growing complexity of the urban environment. We did so by describing the two design projects in which the origins and emergence of the tool may be found and by extracting from these projects the general principles and characteristics of the tool. The two projects are very different in the way they determine the spatial configuration of the scalar framework of the scaffolding (Tables 1 and 2 offer a brief comparison in this sense), but also very similar in the way they approach the integration between the urban and natural landscape. In its parts, Urban Scaffolding is by no means novel, but the way it is configured and put together makes it a promising tool for flexible, adaptable, and multi-scalar design.

Urban Scaffolding has three key qualities that make it a promising design tool. First, as it is a topological device, it is highly flexible and, therefore, adaptable to the specificities of each site upon which it is applied. Second, as a framework rather than a fixed solution, it provides a way to dealing with complexity, that is, with the uncertainty of future spatial-temporal dynamics. Last but not least, its three components constantly negotiate between natural and urban systems, between fixed and flexible parts of the urban environment, between short- and long-term goals, between ecological balance and socio-economic well-being.

Still, urban scaffolding as a tool and as a method needs further development. As a tool, it has to be tested and refined further in design projects and in conjunction with other existing design tools. As a method, and eventually as a full-fledged theory, it needs to be further substantiated with evidence from design research and it has to be placed into a wider context of theories that propose design frameworks. In this sense, it is important to highlight that the fundamental principles
of scaffolding allow the free combining of existing or new design tools, while the fundamental principles of the scaffolding are consistent and consistently being refined. Urban scaffolding is a continually evolving project tested through design.

ENDNOTES

1. The first project is the winning entry of the competition organized in the Le:Notre International Landscape Forum that took place in Bucharest in 2015. The second project is an entry to the biannual European architecture and urbanism competition Europan in 2015.

2. Turner and Gardner (2015) refer to a three levels in a hierarchy: an upper level that constrains, a level of focus, and a level of components required to explain the level of focus.

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EXPLORING AND DESIGNING DYNAMIC SITES THROUGH EXPERIMENTAL WALKING

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KEY WORDS: experiment, transformation, walking, specifics, dynamic landscapes

INTRODUCTION
Experimental walking can be used to explore sites, and in particular their dynamics and atmospheric particularities, which provide a treasure trove of inspiration for designers. This article illustrates the benefits of this method, using the changing German city of Freiburg of an example.

TRANSFORMING FREIBURG
The sustainable transformation of urban landscapes relies on design processes that carefully identify the particularities of sites. Designers want to understand local conditions, in particular the dynamic qualities of places, and use them as a starting point for their designs. The process of designing is understood as a process of transformation (Diedrich 2013), in which the designer is just one of many driving forces.

Freiburg is a hugely popular, medium sized town with an attractive proximity to France and Switzerland. The famous Black Forest is at the doorstep and tourists and inhabitants cherish the surrounding landscape. Freiburg has been facing specific pressures for years, though. The housing market is extremely tight because around 1,000 new jobs (net) have been created per year since 2009 and people from all over the world move to Freiburg. The project Perspektivplan was an informal, large-scale design study that was intended to creatively approach the following questions: What are distinctive places of the urban landscape? What is their role in a resilient fabric of the future city? What are the roles of open spaces, dynamic elements and historic aspects in a growing city? For the city of Freiburg this project is nothing less than a radical change in direction.

After years of focusing on the development of new neighbourhoods like word-famous Vauban, it began a process of rethinking the fabric of the whole urban landscape, including inner city areas, neighbourhoods and villages, infrastructure and forests. The project aimed to identify hotspots of transformation and find a spatial vision and spatial strategies to function as inspiring guidelines for the process of restructuring the city.

For this task the exploration of Freiburg’s urban landscapes was crucial because the strategic designs for the cityscape were supposed to express, reflect and develop distinctive dynamic elements of the city. These elements such as scenery and sequences experienced when moving through the city, windy “urban glades” with expansive views, and intermediate spaces between neighbourhoods, had not been portrayed in books and cannot be defined by generating quantitative data. They had to be sensed by getting in touch with ephemeral properties.
The design team walked the project area extensively and made use of walking as experimental method. (Figure 1) The team comprised of different professions: An urban designer (Oliver Seidel, Cityförster), an architect (Sanna Richter, architect) and two landscape architects (Henrik Schultz, Stein+Schultz and Börries von Detten, freiwurf). They worked closely together with municipal planners and different groups of decision makers and stakeholders.

**WALKING AS METHOD OF URBAN LANDSCAPE DESIGN**

Walking is an act of movement, perception and creativity, and is deeply rooted in our history. It was by walking that man began to construct the natural landscape of his surroundings. And
in our own century we have formulated the categories for interpreting the urban landscapes that surround us by walking through them,’ says Francesco Careri (Careri 2003: 19). Today, landscape designers can draw from the widespread use of walking in other professions. In his research on strollology, Lucius Burckhardt’s focus was on walks as a tool to perceive a space and to establish a critical attitude towards landscape planning (Burckhardt 2006: 259). Though he did not focus on the ties between walking and the design process, Burckhardt influenced designers, including landscape architects, and pointed to the “invisible” aspects of landscape (Fezer and Schmitz 2012). His walks provided a way to analyse urban fabric.

Since the 1960s a growing number of performative artists make walking a constitutive element of their work. Boris Sieverts, for example, combines paths, situations and views, and creates sequences of images while walking. Participants in his tours are guided to experience these newly written landscape stories. The works of artist Richard Long can be understood as walking performances that directly translate into sculptures. Long arranges existing material in a slightly new way. The movement of the walk carries into Long’s actions in making the sculpture. The walk binds material to action and connects the sculpture with the landscape. Long’s work shows that two aspects of walking cannot be separated—mentally altering space and altering space by drawing lines or by rearranging existing materials. Invisible changes and tangible action are interwoven in the act of walking. ‘For whenever we walk or talk we gesture with our bodies, and insofar as these gestures leave traces and trails, on the ground or some other surface, lines have been, or are being, drawn’ (Ingold 2011: 177).

But artists aren’t the only ones to value walking – some scientists consider walking crucial to their research. The geomorphologist Sven Lukas, for example, walks to understand how glaciers grew, as well as to reconstruct aspects of the palaeo climate. Walking helps Lukas capture the complexity of a landscape and its genesis (Lukas and Bradwell 2010).

Walking is one of the most ordinary and simple ways of exploring landscapes. However, applied to design practice, it must be refined as an experimental method supporting a complex creative process of gathering knowledge, generating ideas, and reflecting and sharing findings immediately on site. In order to do this, the method provides a set of guidelines to help inspire the interplay of intensive perception, intuition and reflection. In recent research three modes were crystallised that are supported and integrated by the method: the “discovery mode”, the “flow mode”, and the “reflective mode” (Schultz 2014). The characteristic elements of the act of steady, long-lasting walking – strain, rhythm and intensive perception – enable these three modes. (Figure 2) Bound together in the act of walking they facilitate engagement (allowing researchers to intensively perceive space), flow (encouraging intuition), and reflection (supporting organisation). Therefore, a walk can stimulate the complex, iterative process of large-scale landscape design that can also be a process of transformative science. Designers of large-scale landscapes and researchers need to engage in order to explore the object of research. Sometimes, they want their thoughts to stray and to experience flow in order to stimulate associations and new interconnections. And finally, they want to reflect both their experiences and initial ideas.

**EXPERIMENTAL WALKING IN FREIBURG**

To prepare the walks in Freiburg, the design team defined guidelines such as to walk parts of every neighbourhood of the city, to walk large sequences alone and in silence, to engage with the landscapes, and to enjoy being part of the landscape performance.

The nature of walking itself can be viewed as experimental (Fischer 2011: 289). In this context ‘experimental’ means an act or operation for the purpose of discovering something unknown, in this case the characteristics and potential of the city of Freiburg. To walk as an experiment means to intervene and change the object of design and research. Rebecca Solnit calls walking not an analytical but an improvisational act (Solnit 2000: 21). In walking experiments, a given
framework fosters creative engagement and combines planned and unplanned elements (Seggern 2000: 316). The character of a walking experiment can best be described by quoting Bruno Latour ‘A good experiment is not one that offers some definite knowledge, but one that has allowed the researcher to trace the critical path along which it will be necessary to pass so that the following iteration will not be carried out in vain’ (2004: 196).

An additional experimental aspect in the context of planning and design in Freiburg was that walks were considered a kind of play. Playfulness means avoiding constant reflection, i.e. by not asking questions such as “What am I doing here?” and by trusting one’s intuition when, for example, choosing paths or places to pause. The rules of the game are clear and simple; they guide walking designers and allow them to open up to the unexpected:

1. Walk the whole day.
2. Choose a direction rather than “the right path”.
3. Experiment with following beaten tracks and with crossing the terrain by following a straight line.
4. Walk alone most of the time, at least for half of your journey.
5. Start a conversation with people you encounter on the way.
6. Observe places with all their scents, flavours, views and textures.
7. Open up to the landscape. Play walking.

FIGURE 2: Interplay of three walking-modes (Schultz 2014a).
The rules were not to restrain the walkers. In fact, they where designed to work as guidelines. The team members made use of the opportunity to break or change the rules.

The case study of Freiburg reveals the benefits of experimental walking as an element of large-scale landscape design.

First, sensing and understanding the city as a dynamic landscape helps generate stark images that balance productive fuzziness and offer tangible starting points for new projects. For instance, the design team bodily experienced the atmospheric effects of the large streets that cut through the city. They appear as barriers in the city’s fabric, prohibiting people from freely roaming the city. These dominant elements had been taken for granted over the last decades. But in line with the city’s mobility transition and inspired by bodily sensing their dominance, the design team questioned the privileges of these large transport axes. With the “Capture” strategy, the team proposed ways of transforming the streets into usable open spaces and occupying unused roadside greenery by building new soundproof houses with backyards protected from noise. As a result, the formally hierarchical transport axes become part of the city’s fabric, play diverse roles, and no longer appear as barriers. New interconnections along and across these streets became an important element of the spatial vision.

Second, the walking design team experienced places that offer an opportunity to grasp the city in its beautiful unfolding complexity. The team mapped particular places, traces and patterns of movement (e.g. paths people use as part of their daily routines), landmarks and other characteristic elements of Freiburg’s cityscape that can only be experienced by walking the city (see figure 1 “Walking and Mapping”). They represent narrative qualities of places and of the whole city of Freiburg. The designers could respond to these qualities experienced on the walks when designing and discussing the spatial vision and spatial strategies. They could easily oscillate between abstract vision for the whole and tangible situations experienced on the walks.

Third, walking the city of Freiburg helped to identify particular places with potential for restructuring and reprogramming. For example, informal open spaces on Freiburg’s fringes that are shaped by individual appropriation of neighbourhood initiatives, offer unique development opportunities. In existing formal plans these sites are not marked. Designing the city of Freiburg without walking it and rooting out these places would mean missing the chance to work with these specific potentials. The strategy “SEAM!” proposes ways of working with the particularities of these informal sites, for example by framing areas of free appropriation and preventing tabula rasa strategies.

It is a crucial finding, though, that working with particularities does not mean protecting and conserving them, but rather using them as a starting point for a distinctive design. In the case of informal spaces this implies working with the initiatives to transform and maintain the sites in a sustainable way, and giving green spaces status as part of Freiburg’s green grid. In the case of mapped landmarks, a strategy would not only imply respecting existing points of orientation but creating new ones and integrating them into the Freiburg’s unique topology. (Figure 3)

**CAPTURING PARTICULARITIES & FINDING QUESTIONS**

The walking design team in Freiburg was able to feel the city’s “vibe”, to understand how particular dynamic elements interact, and to conceive of the city as a whole – as a living ecosystem. Experiencing the atmosphere, interacting with people, feeling the summer heat (Freiburg has one of the hottest microclimates in Germany), mapping particular places such as the large streets and the informal spaces on the fringes, and bodily sensing “where the music plays” – all these experiences were crucial to inventing a proper spatial vision for the whole of Freiburg, as well as tangible interventions.
The new framework shown in the spatial vision can be divided in three fields, all resting upon Freiburg’s topological basis (first image). The first, “riverscapes” (second image), addresses areas along the three major floodplains. Each new project in these areas must define its relation to the river. Riversides will be transformed from small, and in some places inaccessible, strips of green to a river park. The second field, “cross connections” (third image) follows today’s linear gaps that will be transformed into dense, multi-layered hotspots of urban life. The streets themselves will be important elements of public space. They are designed to be multidimensional spaces. The third field is called “urban glades” (image four). These glades are parks and other green spaces, including an airfield, which will be kept open to provide expansive views of the cityscape and places to linger and breathe.

While moving and connecting views, feelings, and places, the walking designers gained new perspectives and saw things from different angles, or in a different light. The scenery became a spectacle in which the continuously moving walkers played an active role. Through walking, the design team were able to sense narrative qualities and contribute to the ever-changing meshwork of paths and stories. In fact, walking brought together processes of landscape performance and landscape design.

In his studies of the everyday life, Michel de Certeau analyses walking as a crucial means of constructing social space (Certeau 1980). While walking, people physically interact with the world, not as subjects upon objects, but by being a part of it, as also theorised by phenomenologist Merleau-Ponty (1968). Landscape in this context is considered as coming into being through a complex, non-linear process of transformation. The European Landscape Convention builds on this concept of landscape: according to article 1A, “landscape” means an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors. People play a constitutive part by perceiving, using and altering the landscape both physically and in their minds. According to Hille von Seggern’s (2008) definition of landscape as Raumgeschehen, all space that surrounds us can be understood only by actively becoming part of and perceiving its on-going process of transformation. Thus, landscape is not simply a physical entity that can be analysed by measuring and observing; studying landscapes needs to take the moving designer into account.
The fact that walkers can become part of the *Raumgeschehen*, and intensively perceive and change it, makes walking a process of understanding that is directly linked to design (Seggern 2008: 233). Walkers explore what is already there, immediately creating and thus changing this 'reality' by walking through it and by connecting elements in their minds and with their bodies and by reflecting on the insights gained.

In this process of understanding an outcome of the simple act of walking becomes explicit: Questions and ideas. Walking rhythmically merges the motion of the body and the lines of thought. It merges perception, physical challenge, and rhythmic movement. Thus, it brings perception and flow together, creating an interplay that is well-suited to generating new ideas.

When dealing with complex objects of design and design research, formulating relevant questions is a creative act that benefits from 'walking around the problem' rather than sitting at a desk, reading books and extrapolating. As Jonas (2007: 1365) puts it: ‘No information is available, if there is no idea of a solution, because the questions arising depend on a kind of solution, which one has in mind. One cannot fully understand and formulate the problem before it is solved. Thus, in the end, the solution is the problem’. The process of walking helps grasp an idea of the solution. Ideas cannot be produced only by referring to rational strategies. Intuitional and bodily strategies are needed as well. Walking is a bodily activity and the creative processes described by so many different people are based on intuition (Schultz 2014b: 129).

**CONCLUSIONS**

Walking fosters a special form of reflection in action. While walking, phases of engagement alternate with those of looking at the landscape from a distance. At one stage, designers intensively perceive the atmosphere of a space and become part of the landscape. At another stage, they look at the landscape from a distance and are inspired to reflect their findings. The knowledge generated during a walk may be implicit but it can be shared among other designers and members of the general public. Such sharing, when done right away and on site – for example when walking with others – can help make knowledge explicit. In other words, while walking, researchers can practise reflection in action (Schön 1984: 76ff). Through the mutual sharing of conceptions that people have of landscapes they gain insights into their dynamic and ever changing object of research. The fact that almost everybody is capable of walking makes the method a low-threshold activity. This is a crucial quality because it fosters the generation of 'socially robust knowledge' of Mode 2 research (Nowotny et al. 2001: 166).

**REFERENCES**


Quaternary Research Association).


A WIND-SUN EXPOSURE ANALYSIS METHOD TO PREDICT PEDESTRIAN URBAN COMFORT AT EARLY DESIGN STAGE: REGNBÅGENSALLÉN AT LULEÅ UNIVERSITY CAMPUS, SWEDEN

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KEYWORDS: city, microclimate, comfort, wind, shade, sun, design, communication.

ABSTRACT
A simulation methodology was developed as part of the landscape project Luleå Campus Regnbågensallén (“Rainbow Alley”) at Luleå University, Northern Sweden, an area exposed to cold winds in an extreme Nordic environment. This methodology aimed to integrate wind and solar exposure data in order to improve exterior thermal comfort and guide design decisions at an early design stage. The method uses a combination of advanced CFD (computational fluid dynamics) simulations and solar access analysis combined into a highly communicative and intuitive microclimate map highlighting areas with optimal comfort conditions. This article presents the results obtained with the simulation methodology as well as some discussion about the validity and usefulness of the method. By improving pedestrian comfort conditions, the landscape design is promoting outdoor activities like walking and cycling, which are key to support the future development of a truly sustainable Nordic city.

INTRODUCTION
The urban context offers a rich and varied environment influencing the way we are using urban spaces through movement and activities. Furthermore, buildings, obstacles, trees and shrubs that define urban spaces affect our perception of the environment by providing constantly changing thermal, acoustic, visual and olfactory stimuli enriching the senses. Of all the influences which impact on town form, especially in harsh conditions, the most compelling is likely to be climate. In the urban context, favorable microclimates are an essential condition for the conviviality of cities in fostering environmental, social and economic exchanges. Research confirms that microclimatic parameters are of prime importance to support activities which take place on site, and up to a certain point, determine how this site can be exploited. Climatically responsive urban design is fundamental to sustainability: when the design of spaces between buildings is informed by the opportunities and constraints of the local climate, pedestrian comfort is enhanced – encouraging city dwellers to conduct more activities outdoors, and in turn to moderate their dependence on air-conditioned buildings and private vehicles.

However, climate issues often have a low impact on the urban planning process in practice. Much recent architectural discourse has concentrated on aspects of construction or aesthetics, while the analysis and review of environmental strategy has received considerably less attention. Thermal qualities – warm, cold, humid, airy, radiant, cozy – are an important part of our experience of a space; they not only influence what we choose to do there but also how we feel about the space.
In order to develop a landscape concept going beyond the aesthetic paradigm, a simulation methodology was developed as part of a real landscape project called *Regnbågsallén* at the Campus of Luleå University in Northern Sweden. This method combines wind and solar access data into microclimate maps at specific times of the year in order to predict and improve exterior thermal comfort and guide design decisions at an early design stage.

**BACKGROUND: THERMAL COMFORT THEORY AND MODELS**

A design method accessible to architects and urban planners was devised by Brown & DeKay\(^8\) based on two climate parameters: wind velocity and solar access, which offers a simpler means for assessing outdoor microclimate, applicable in all seasons and at an early design stage. Ebrahimanadi et al\(^9\) showed that this method correlates with the more precise calculation of the spatial distribution of the outdoor standard effective temperature (OUTSET*) used in more advanced climate analyses. The simpler microclimate maps method proposed by Brown & DeKay\(^8\) and further developed by Ebrahimanadi et al\(^9\) and Potvin et al\(^3\) uses different combinations of solar access and wind conditions in accordance with climate context and season. For example in cold climates, spaces that are sunny and sheltered from wind are favorable in all seasons whereas in a tropical humid climate, a combination of shadow and wind is favorable.\(^9\) This suggests that in cold climates, designers should aim to create spaces that are sheltered from wind and have maximum solar access to maximize comfort.

**METHOD**

**CONTEXT: LULEÅ UNIVERSITY**

*Regnbågsallén* is a landscape project at Luleå Technical University (LTU) (latitude: 65.33°N; longitude: 20.08°E) commissioned to White Architects in 2015. LTU is Sweden’s most Northern university and the only one with secure snow cover, a quality which is central to the project’s development. One of the main areas of the project is the so-called *Regnbågsallén* (“Rainbow Alley”), which is a central, pedestrian street oriented along an East-West axis and linking the main university pavilions. (Figure 1) The Rainbow Alley is designed so that the focus is on three dimensional forms and three dimensional surfaces rather than a nice urban “floor” since this one will be covered with snow most of the year.
WIND DATA

Wind statistics from Luleå Airport show that on average, wind speeds are not really extreme, ranging from 3.0 to 3.7 m/s as shown in Table 1 and 2. As the wind roses indicate, the most frequent wind directions are from South and North, respectively. (Figure 2) Three cases were therefore considered in this study:

1. South,
2. North,
3. Extreme wind from South.

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TABLE 1. Average wind speed in m/s for the period 1991 – 2004, source SMHI.

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TABLE 2. Average wind speed in m/s for the period 1961 – 1990, source SMHI.
COMPUTER PROGRAMS
The method uses a combination of advanced CFD (computational fluid dynamics) simulations with the program Autodesk CFD\(^9\) and solar shading analysis using the program SketchUp Shadow tool (Version Pro 2015)\(^1\). The output of these two programs are then combined using the program Adobe Photoshop, which is a raster graphics editor, in order to produce microclimatic maps combining wind and solar access information. Thermodynamic aspects such as thermal inertia, long-wave heat radiation and reflectivity of materials are not taken into consideration in this process.

RESULTS

RESULTS FROM THE WIND SIMULATIONS
Results for two of the three simulated cases are presented in this article.

South wind analysis: Figure 3 shows the results for the larger area with a wind simulation from a South direction. For this case, an average wind speed of 3.43 m/s was used as it corresponds to the average wind speed for the months of March, June and September. Figure 3 shows the wind distribution for the entire analysis area, while Figure 4 and 5 present an enlarged view of a cluster of towers planned in the South-West area. Figure 3-4 show that wind speeds are very calm in the East-West passage between the buildings (dashed line in Figure 4, which is in fact the "Rainbow Alley") while several regions (marked with a red square) can be problematic due to sharp building corners, higher building masses and narrow gaps between buildings (Figure 4 and 5). In general, the campus area appears to be quite well sheltered from Southern winds although the North-South paths do create accelerations as shown by the dashed lines on Figure 4. Coniferous trees can be planted to break up the turbulent winds that appear in these regions.

North wind analysis: Figure 6 shows the wind distribution for a North wind of 3.43 m/s for the entire analysis area, while Figure 7 and 8 show some enlarged views of key areas. Figure 6-7 show that wind speeds are rather calm in the East-West passage (Rainbow Alley) between the buildings while one region in particular (marked with a red square) can be problematic due to higher building masses, sharp building corners and narrow gaps between buildings. The wind paths that were previously marked in Figure 3-4 for the South wind case appear to be less problematic for the North wind case since the existing buildings on the site create a good wind protection along these paths. Instead there are now problematic areas between buildings in the North-West corner as shown in Figure 7-8.

Simplified wind map: In order to better define areas of lee and high wind, the results from the wind simulations were simplified into a three tone wind diagram as shown in Figure 9. Note that these three-tone maps represent wind speed categories of 0-1.67, 1.67-3.33, >3.33 m/s, which roughly correspond to the categories of calm to gentle breeze identified by Boutet\(^12\). The maximum wind speed in these maps was set to 5 m/s since in general, wind speeds above this threshold can cause wind perceived as uncomfortable. Figure 9 clearly shows that there are some corner effects (light grey) created by a new planned tower on the South-West area and that the North-South passages have a higher wind speed than the East-West street (Rainbow Alley). This observation has consequences for the planning of the site: the tower is moved and the East-West passages are provided with vegetation for higher wind protection.
FIGURE 3. Overview for the analysis area with wind blowing from South at 3.43 m/s. Wind speeds are shown on a scale from 0 to 5 m/s. A red arrow shows the direction of the wind.

FIGURE 4. Wind speeds 1.5 m above the ground level. A problematic area, marked with a red square, is enlarged in the next figure. The white area in the upper left corner is due to a change in the topography.

FIGURE 5. Enlarged view of wind effects around the planned towers with turbulent winds around corners and in narrow passages.
FIGURE 6: Overview for the analysis area with wind blowing from North at 3.43 m/s. Wind speeds are shown on a scale from 0 to 5 m/s. A red arrow shows the direction of the wind.

FIGURE 7: Wind speeds 1.5 m above ground. The red square shows a problematic region with high wind speed.

FIGURE 8: Enlarged view of wind effects around the planned towers with turbulent winds around corners and in narrow passages.
SOLAR ACCESS MAPS
The solar access for the spring and fall equinoxes was studied in particular. The summer solstice was not studied since there are virtually no students on the campus at that time while during the winter solstice, the sun hardly rises above horizon at this high latitude and shadows are extremely long. Figure 10 shows how the campus buildings create shade on the ground at 9:00, 12:00 and 15:00 hours respectively. Note that Figure 10 also shows that the north side of the Rainbow Alley is in the sun at 12:00 and 15:00 hours at the equinoxes, a fact which was exploited by the design team by placing the outdoor walking path in this area.

These images were combined into a single image shown in Figure 11. Figure 11 shows the areas which are 1) exposed to sun, 2) once in shadow, 3) twice in shadow and 4) three times or more in shadow. Note that the white areas ‘exposed to sun’ are only for the simulated hours i.e. at 09:00, 12:00 and 15:00 hours.

MICROCLIMATIC MAPS
By superposing the simplified wind (Figure 9) and solar access maps (Figure 11), simulation results can be combined into a microclimatic map as shown in Figure 12. In this map, the regions that are exposed to sun and with low wind speed (black in Figure 12) are colored orange. Here wind and sun are weighted equally for simplification although this may not be experienced in this way in reality. On the other extreme, areas that are three times in shadow (black, Figure 11) and wind exposed (light grey, Figure 11) are colored blue in the microclimatic map (Figure 12). All other combinations of conditions are given intermediate color codes.

This colour code simply allows emphasizing the areas where exterior thermal comfort is likely to be extremely good or extremely poor and the ranges in between. In this case, it is possible, for instance to decide that all areas of the microclimatic map that are colored light or dark blue should not contain any key exterior functions or that some measures should be developed to improve thermal comfort in these areas. Figure 12 shows the areas that are most in shadow and generally more windy (#2 blue) while emphasizing the areas that are most suitable for outdoor activities i.e. most in the sun and lee (#6 orange). In general, in this case, this microclimatic map emphasized that a planned tower on the South-West side would create shadow in an area which would have been suitable for outdoor activities (inside the circle). It also showed that some intersection would be suitable for micro plazas (circle on the right side). Finally, it
emphasized that the North-South passages between the buildings needed accrued wind protection while the Rainbow Alley itself did provide more acceptable (protected) wind conditions although the shadow produced by existing buildings could not be modified.
DISCUSSION AND CONCLUSIONS

This paper shows that the microclimatic maps are useful at the early design stage in order to initiate a discussion on climatic parameters within the urban and landscape design team and draw attention to specific microclimatic phenomena. The simulations also allowed confirming wind effects that architects and planners had anticipated intuitively, as e.g. the protection provided by buildings along the Rainbow Alley or other similar effects.

However, it was found during the process that the wind simulations are too time-consuming to be realistically included in a normal time frame of building practice. In this case, about 45 hours were needed to prepare (parametrize) the model for simulations, run the simulations, analyze and present the results. Wind simulations also require involving a simulation expert in the team due to the complexity of the reliable simulation programs. In addition to the scarcity of available simulation experts in private practice and absence of agreed simulation budget by clients, the time frame for wind simulations is a real barrier in the workflow of urban and landscape design offices, where a fast input to the design is required, normally about 2-3 weeks. On the other hand, the study showed that the solar access analysis is rather straightforward and can be achieved within a few hours, which is a reasonable time frame at the early design stage.

One conclusion of this study is thus that the key for future development in this field and in the area of urban microclimate analysis should emphasize on making the wind simulation tools more readily available and simpler to the users so that results may be obtained more quickly and to a lower cost. Another improvement could be that the solar access tools are directly embedded within the wind tool in order to avoid the last iteration.

Despite the limitations of each computer tool used in this research, the method fails to convey impression of the flow of thermal and experiential sensations that will be experienced in reality. As outlined by Pallasmaa9, computer imaging tends to flatten our magnificent, multi-sensory, simultaneous and synchronic capacities of imagination by turning the design process into a passive visual manipulation, a retinal journey. An architectural work is not experienced as a series of isolated retinal pictures, but in its fully integrated material, embodied and spiritual essence. Note also that a study of comfort in itself is limiting since climatic diversity is a fundamental criterion alongside comfort.9

On a more technical note, it should be emphasized that the combination of solar access and wind effects can only provide a proxy of the thermal comfort experienced on site. As outlined by various comfort models, thermal comfort is also influenced by other parameters such as clothing, activity, but most importantly humidity, air temperature and velocity, solar radiation intensity (not only access), and the temperature of surrounding surfaces, their thermal inertia, etc. A full analysis of a large urban context would entail knowledge of these parameters, which would require information, not to mention expertise and computer power, which are not normally available at the early design stage.

Aside from desirable development in the speed and accuracy of wind simulations, the planned future development of the method within the practice of White Architects include the integration of solar radiation intensity on facades and surfaces, and integration of thermal data (temperature of surfaces) in the simulation process.

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