

4x1: 4 km2 over 1 century

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# Scales of Change

## Conference Proceedings

*Commemorating 50 years of  
Landscape Architecture study programme at  
University of Ljubljana*

University of Ljubljana



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# Contents

<b>Preface</b>	<b>006</b>	<b>F. Arques, M. R. De la O Cabrera, N. Marine, D. Escudero:</b> Heritage Practices and Contemporary Landscapes in Spain: Reflections after 20 years of the European Landscape Convention	<b>121</b>
<b>Prof. dr. Mojca Golobič:</b> Change of Scale	<b>006</b>		
<b>Keynotes</b>	<b>009</b>		
<b>Prof. dr. Lučka Kajfež Bogataj:</b> The role of landscape architecture in climate change mitigation	<b>011</b>		
<b>Prof. dr. Carl Steinitz:</b> Scale, Size, Time and Complexity matter	<b>019</b>		
<b>Evolution and reflection</b>	<b>027</b>	<b>Relation between planning and design</b>	<b>129</b>
<b>R. Stiles:</b> Evolution and reflection – Back in Ljubljana, and still talking about definitions...	<b>029</b>	<b>H. Schultz:</b> Transformative Resilience - a chance to reunite landscape planning and design?	<b>131</b>
<b>M. van den Toorn:</b> Looking back at three Ljubljana conferences; theory, practice and education in landscape architecture	<b>037</b>	<b>F. A. Firat, K. Ozgun:</b> A Location Evaluation Approach for New Pedestrian Bridges in Brisbane, Australia: Hybrid Decision Making with Space Syntax and GIS	<b>141</b>
<b>Ç. Demirel Koyun, E. Erbaş Gürlér:</b> The New Landscape Declaration: The Actor-Network Theory From Call to Action	<b>053</b>	<b>S. I. de Wit:</b> The power of composition	<b>155</b>
<b>R. Sachse:</b> The revival of Pocket Parks: How an innovation of the 1960s becomes an inspiration for today's urban development	<b>063</b>	<b>M. Treib:</b> The Sparrow and the Elephant (The Garden and the Territory)	<b>163</b>
<b>S. Sadat Nickayin:</b> From (Mega) Regionalism Towards Planetary Scale in Landscape Architecture	<b>071</b>	<b>M. Ronci:</b> Multiscale approach to biodiversity conservation: Chicago as a case study	<b>171</b>
<b>D. X. Dai, M. Y. Bo, J. J. Mao:</b> A Comparative Study Of Eco-DRR and Traditional Chinese Ecological Knowledge for Elevated Urban Temperature Disasters	<b>081</b>	<b>D. Stefàno:</b> Representing the complexity of nature from micro to macro scale	<b>181</b>
<b>C. Oliveira Fernandes, C. Patoilo Teixeira, C. Fernandes:</b> Planting Design: Current Practices and Research Trends	<b>091</b>	<b>S. Flint Ashery:</b> Using negotiation to reduce the gap between planning and implementation	<b>187</b>
<b>A. Hessel, A. Medeiros, C. Fernandes:</b> A systematic review of expert methodologies for landscape visual quality assessment	<b>101</b>	<b>N. Marine, D. Escudero, I. Rodríguez de la Rosa:</b> Mapping heritage: Georeferenced Heritage Assets Applied to the Cultural Characterization of Madrid (Spain)	<b>197</b>
<b>C. Oliveira Fernandes, C. Patoilo Teixeira, M. De Sousa:</b> Assessing the Perceptions, Preferences and Attitudes of Users of Urban Green Spaces: A Systematic Review	<b>109</b>	<b>Teaching across scales</b>	<b>205</b>
		<b>M. van den Toorn:</b> Teaching across scales: learning to design in the context of the dynamics of landscape form and design	<b>207</b>
		<b>C. Chakrabarti, M. Shah:</b> Scaling up, scaling deep: Negotiating scales for productive urban landscapes	<b>221</b>
		<b>G. Lobosco:</b> 4x1: 4 km <sup>2</sup> over 1 century	<b>231</b>
		<b>R. C. Bach, S. D. Boris:</b> Working across scales and contexts in the Aarhus River Valley	<b>239</b>
		<b>S. Costa, D. Parke:</b> The Vertical Ecology Studio: Accelerating Learning towards	<b>249</b>

Systems Thinking Competencies in Landscape  
Architecture Design Education

**A. Patuano:** Research through Design for Health and Wellbeing: An Exploration of BSc theses **261**

**A. Oldani:** Abjuring Scales **271**

**S. Sahasrabudhe:** Merging landscapes' scales: A journey through pedagogical approaches in Landscape Architecture Studios in Indian Context **281**

**Context matters** **293**

**R. Stiles, E. Mertens, N. Karadeniz:** 'Invisible infrastructure' – or why some professions are more equal than others **295**

**E. Hasanagić, A. Brajić, S. Klarić, M. Avdibegović, E. Hukić:** Transdisciplinary approach in higher education in landscape architecture: Case Study of master's degree program from Bosnia and Herzegovina **305**

**Beyond the field** **319**

**T. Dabović:** Introduction to "Beyond the Field": What this could be and what scale, time and Dr Robert Sapolsky might have to do with it? **321**

**M. Manfredi:** The Biopark: a sequence of temporary landscapes active in progressive decontamination of polluted soil **327**

**A. Chmelová:** The influence of urbanisation processes of the City of Prague on the arrangement of surrounding settlements in the peri-urban landscape **337**

**I. Prehn, C. Jutz, J. Schoppengerd, H. Schultz, K.-M. Giese:** A new understanding of being physically and virtually en route **351**

**M. Di Marino, M.G. Trovato, L. Gao:** The Centre for Landscape Democracy and Transdisciplinarity: Transdisciplinary challenges, research and education in landscape democracy **363**

# 4x1: 4 km<sup>2</sup> over 1 century

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## Abstract

"4x1" is a semester-long exercise developed by students at the University of Ferrara. They were asked to select and frame an area of 4 square kilometres from anywhere in Italy. Three plans were required, representing the landscape context today, its ongoing transformative forces and its appearance in a century from now. The main request was to consider documented forecasts on climate change effects, as well as concurrent social trends (tourism, depopulation, etc.) or actual plans for urban and infrastructure development. In contrast, they have been free to speculate about future configurations according to different attitudes (policies) towards the forces at play: ranging from strong anthropic responses to "do nothing" answers. One purpose of the assignment was to challenge students' tendency at "overmining" design or analysis tasks: that is to take into account too general or generic topics, overestimating them, in the belief they can be transferred linearly from one scale to another. Throughout the research, they had to, and learnt to, continuously change the scale of their investigation, even in order to decide how to frame the chosen context. The resulting illustrations are a distilled outcome of a wider survey - on data and processes - which for the most part almost disappears during the

journey. In the long run, like an "hyper-object", the landscape we try to depict is always something that "withdraws" from our knowledge, perception or any attempt at fully describing it. But this is its fascination and why we keep probing it.

## Keywords

Object Oriented Ontology, hyperobjects, climate change, uncertainty, landscape representation

## Introduction

Even in the face of the challenges imposed by climate change and its effects, landscape design in recent decades has been radically transformed from a practice oriented toward the perception and visual composition of outdoor space to a more ecologically oriented discipline for which an understanding of the environment, in its biotic and abiotic components, is a key element. This trend, which has its roots in the work of Ian McHarg (1969), has naturally influenced the methods of land representation and investigation that have themselves become an integral part of a design approach largely inspired by the notion of landscape design as a hermeneutic practice theorized by James Corner (1990a; 1990b) in his two essays published in *Landscape Journal*. Thirty years later, the then-emerging dialectic between the

conception of landscape architecture as scenography or infrastructure, although from a purely theoretical point of view, now seems to have been overcome in favour of the latter (i.e., infrastructure), in practice, it remains a perfectly valid opposition when analysing the forms of representation still used today. In this regard, as noticed by Richard Weller (2020), a main distinction can be done in the current types of representation assuming as reference both the concept of “hyperreal” and the notion of “hyperobject” as defined by the philosopher Timoty Morton (2013).

Hyperreal representations are structured as “picturesque” images (in terms of perspective and points of view) and with a certain erotic tone. They contrast vividly with the context to enhance the ‘greenish’ sharpness of the proposed intervention. One of the characteristics of frequently used representations is that of freezing the image in the future, showing a mature intervention (think of plants usually depicted as mature, tall and lush, i.e. in a condition that takes decades to reach) without focusing on what are instead the long, lived phases of an environmental-landscape-type intervention. What the images associated with the hyperreal concept present is a suggestion of “confidence and comfort” linked to an idea of an “ecological paradise”. The focal point is that such images mask the landscape and its processes, do not show the deeper, structural ecological and social problems of contemporary cities by playing on a totally “passive” observation. The deep-seated and widespread problem with the hyperreal is that «it is suspended between truth and fiction without exercising and enjoying the full potential of both» (Weller, 2020, p. 32).

On the other hand, representing the landscape «not as scenic but as complex environmental processes» (Weller, 2020, p. 30) is instead the theme related to “hyperobject” representation that proactively includes the temporal dimension and identify the human as «one actor in larger ecological and political networks wherein all species and all forms of matter have both rights and agency» (Weller, 2020, p. 34). According to Morton’s thought and the philosophic assumptions of the Object Oriented Ontology (Harman, 2011) that grounds it, such “flat ontology” implies that the access to reality is based on the interactions between objects with no preconceived hierarchy between human beings and things. As Graham Harman (2018) argues, if we assume this flatness, we also should accept the fact that interactions between things are just as deep, and just as limited, as the interaction between them and human thought.

Climate change is an example of this: it does not exist as a function of our knowledge or perception, it just exists. Like other objects, it retracts, it is irreducible to a univocal scale as well as it is inexhaustible by our admittedly vast knowledge in the same way it is by the, perhaps more limited but certainly different, knowledge of a cetacean. Humankind can statistically study some of its manifestations, sensitive or relational, at the local level, but no one will ever be able to completely describe its contours or report it everywhere at the same time scale. What Morton calls “hyperobjects”, are something deeper than processes since they occupy the multidimensional space of phases, which means they cannot be located at a single point in time or space. So, the climate change,



as other hyperobjects, exhibits its effects only into an “interobjective” manner; that is, it can only be detected in a space that consists of the reciprocal relationships between the aesthetic (sensible) properties of objects, whether human, artifact, animal or social constructs.

In this sense, the representation of landscape as a device for aesthetic mediation with reality can be extremely effective in alluding to entities so complex and large in space and time, even beyond the purpose and intentions of those who produce them. While it is true that this excess of reality nonetheless surpasses our perception, it is also true that today we are increasingly able, thanks to digital tools, to expand our awareness of the landscape beyond horizons and substances that were until recently obscure. Analysing the ecological component in its most technical and scientific part by distancing oneself from purely picturesque positions reveals the landscape as a system in which the balance of forces is the only true impartial judge. Flows, forces, behaviours, relationships. These are the factors that, in their becoming, continuously and irrepressibly shape the landscapes around us. Beginning to perceive and represent invisible but extremely present factors is a fundamental prerequisite for a critical landscape exploration.

Describing both the dynamic nature of the landscape and the image we perceive of it – i.e., its representation – the time-scale representation process can provide fertile ground for the creation of new imaginary with the aim of shaping new landscapes. Reasoning on J. B. Harley (2009) position regarding the fact that time-space rela-

tion is a fundamental element for spatial planning and that a dynamic multiplicity of urban processes cannot be contained within a singular, fixed spatial frame, James Corner states that «projecting new urban and regional futures must derive less from a utopia of form and more from a utopia of process - how things work, interact and interrelate in space and time. Thus, the emphasis shifts from static object-space to the space-time of relational systems. And, it is here, in this complex and shifty milieu, that maps, not plans, achieve a new instrumental significance» (Corner, 1999, p. 228). As Weller noticed, since the subject at the centre of the hyperobject are the processes of change, it is necessary to incorporate the dimension of time within landscape imagery. Engaging with the aesthetics of time in itself is difficult enough, but the more “important challenge is not only to illustrate change, but to show how certain forms of human intervention (design) can affect, redirect, accelerate or slow down change” (Weller, 2020, 35). In other words, the challenge of working with hyperobjects is not to indulge in what we might today call a contemporary sublime dictated by the aesthetics of the Anthropocene, but to insert ourselves with greater precision and critical sense into the environmental processes (and not only) that shape the landscape with the aim of understanding and redirecting them towards coherent and sustainable design practices.

#### Methods

Focusing on these premises, we worked with fifth-year students from the Department of Architecture in Ferrara as part of the Final Master Thesis Studio on a workshop about the representation of landscape transformations over long-term time

horizons (Emanueli and Lobosco, 2018). The exercise we proposed is designed to develop an effective method of representing the landscape by confronting dimensional and temporal scales such as to stimulate critical reasoning on the transformative processes that may affect a given environmental context. The work was carried out in three phases corresponding to as many plates they had to draw:

1. Current scenario. Based on the available information, an initial drawing describing the current condition of the chosen landscape had to be done. In particular, notable and recurring landscape elements were depicted, such as topography, vegetation system, hydrogeology, anthropogenic components and so on. The location was left to the free choice of each student.
2. Transformation processes. In relation to the context described in phase 1, the possible effects that phenomena, events or dynamics (water levels, drought, hydrogeological instability, abandonment of agricultural areas, development of infrastructure, deforestation, etc.) could potentially have on the landscape are identified and represented in order to project its possible transformation.
3. 100-year scenario. The third phase consisted in redesigning the landscape analysed, according to the same rules used for the current one but projected over a 100-year time horizon. The permanence or transformation of the anthropic and environmental systems is decided according to the previously hypothesized processes. This new landscape balance was matched by a coherent spatial articulation of the elements described in phase 1.

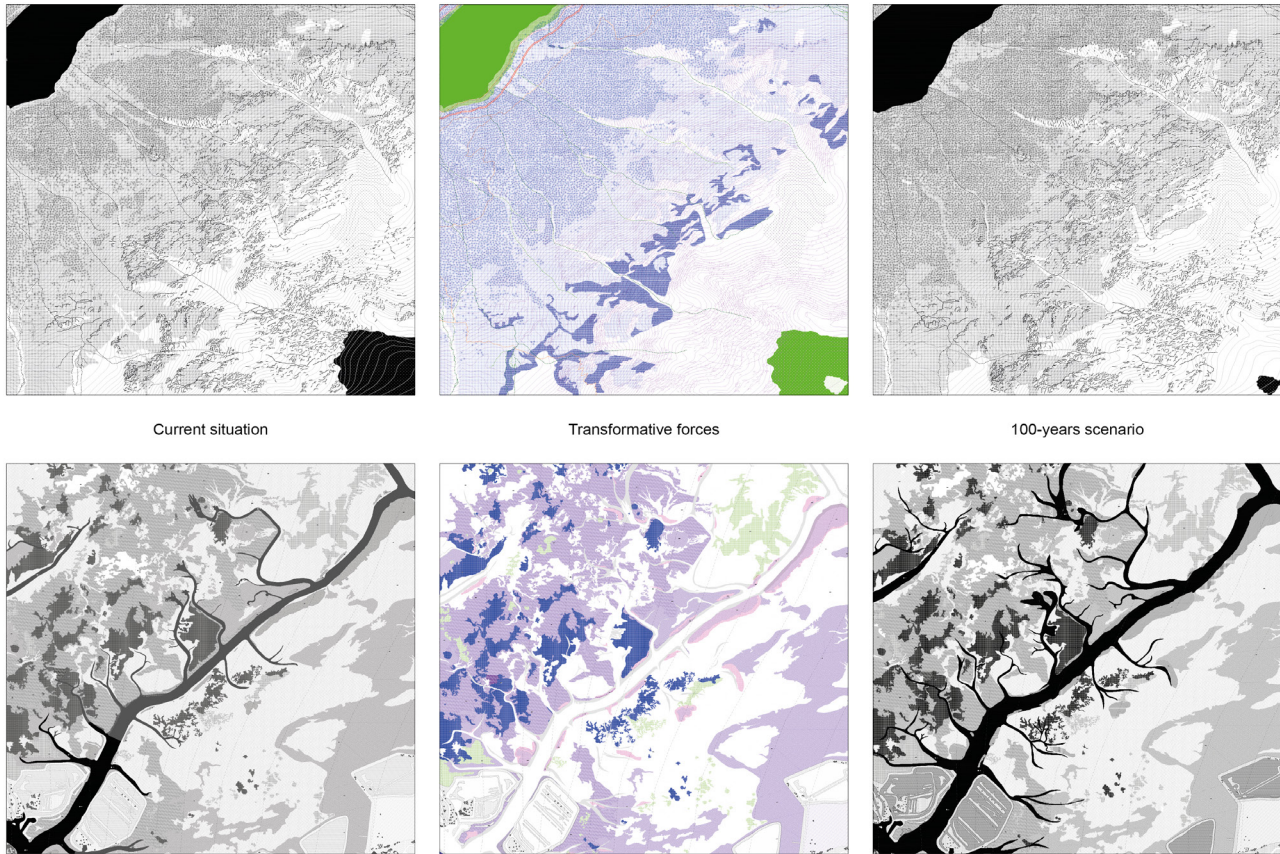
Besides this assignment, few more constraints were given, concerning for example the use of colours and the fact that each phase had to be drawn in plan to a scale of 1:5000, no matter what location they chose to investigate. Such relatively restricted viewport on the landscape should have emphasized, or not, the correlation between some transformative dynamics and their field of influence. In other words, the aim of the work was to explore how the relationship between a given time span and a given dimensional scale interfered with the representation of the landscape and its understanding. Asking the students to limit the map to a certain framing has been a way to encourage them to think outside the box (and the boundaries of representation) for finding larger phenomena that may affect the transition of the physical space, which is, at the end, the very challenge that any landscape project should address in our times.

## Results

The results extrapolated from the exercise were very heterogeneous, so that some areas examined seemed not to significantly change while others showed major variations. By way of example, we will briefly compare hereafter two works that highlight, in slightly different geographic contexts, the impacts of time (Figure 1).

The first case study focuses on the landscape between Lake Gioveretto and the glacier of the same name that currently extends to just below Rabbi's Peak in the province of Bolzano (Italy) at an elevation of about 3250 meters. The study of climate trends related to rising average temperatures has made it possible to estimate the actual retreat of the glacier within a

### 3. TEACHING ACROSS SCALES



235

century. This phenomenon is accompanied by a whole series of impacts on the hydrological and vegetation structure that will lead to a drastic change in the landscape. These include the likely rise in the mean lake level downstream of the glacier and the consequent need to relocate part of the road infrastructure bordering it. This will be accompanied by a gradual expansion of coniferous forests at higher elevations and simultaneously the extension of pioneer vegetation into areas that currently lack them.

The effects of sea level rise within the Grado Lagoon in Friuli-Venezia Giulia (Italy) were addressed using the same methodology. This second case study examined an eastern quadrant of this ecosystem currently characterized by the coexistence of different biotopes (salt marshes, mudflats, etc.) whose variety is closely related to the position of soils with respect to tidal levels. In the elaboration of the 100-year projection, a heavy anthropogenic intervention - consistent with the current directions of lagoon landscape conservation - was assumed to compensate for the rise of the mid-sea through backfilling operations of

**Figure 1**

Two examples of the maps produced by the students. Above, the hypothetical 100-years evolution of the Gioveretto Glacier (elaborated by Gianluca Sartin); below, the analogous span of time investigated for an area in the Grado Lagoon (elaborated by Yasmine Nouira)

the excavated material from the navigable canals, guaranteeing as much as possible the permanence of the wet, semi-wet areas and their related habitats. In this case, the future scenario is nothing more than a sweetened, and equally artificial, version of the current one: visible only through a representation that shows what is happening below the surface of the water, but which otherwise would not be clearly perceptible by a hypothetical observer on the field.

### Discussion and conclusions

Looking at these examples, it is quite clear that is only by the means of representations that baulk at man's intrinsic perception that we can grasp the already mentioned hyperobjects or, at least, realize what changes they might produce on a certain landscape. Only by taking a critical-descriptive approach we can channel this information and project it towards concrete and coherent scenarios that go beyond a postcard image of reality. Far from being a purely speculative exercise, approaching the landscape through the representation of its ongoing and future dynamics is essential for grounding design and planning practices much more aware of the forces that, blending, shape the environment in which we live. As Deleuze and Guattari (1987, p. 12) said, «What distinguishes the map from the tracing is that it is entirely oriented toward an experimentation in contact with the real. [...] The map has to do with performance, whereas the tracing always involves an "alleged competence"». To represent an object is therefore to approach its understanding. In such perspective an especially in the case of landscape architecture, wishing to be far removed from mere picturesque rhetoric, the temporal scale must be giv-

en as much importance as the spatial one with the objective of clearly and specifically identifying all the factors that could potentially affect the object and or be the subject of a project.

In this sense, perhaps one of the greatest contributions of landscape architecture to the way contemporary design challenges are conceived and addressed lies precisely in the acceptance of uncertainty (Lobosco, 2021). In relation to representation, this translates into the concept of accuracy which recalls a strategic attitude to selective precision: conscious or unconscious omissions and the coexistence of potential alternative paths become essential characteristics of a resilient design process. This does not imply a renunciation of the description and analysis of physical space but pushes the research deeper into those features of the landscape that simultaneously take up a plurality of meanings. The presented work carried out with students is an attempt to test this idea by constructing potential paths of change to be addressed by the project.

In contemporary design culture, the production and reproduction of the landscape need to be increasingly configured as an imaginative act aimed at establishing a field of comparison, a horizon of meaning from which to develop multiple narratives for the future. The landscape project should be thus identified as a field of possibilities related to interdependent – and in any case variable – environmental (vegetal, geological and morphological) patterns, rather than as a univocal response to specific needs. In this perspective, the analogical function of representation must replace the purely descriptive and analyti-



cal one in order to aesthetically penetrate the reality of objects (like climate change) that ontologically withdraw from us. Fortunately, although, some idealistic forms of representation (as the “hyperreal” ones) still permeate the media, new approaches are rising to question the “very large finitude” of the hyperobjects featuring the Anthropocene; and the experience reported in this article follows precisely this direction.

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