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The Nordic Association of Architectural Research

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THE DEATH AND LIFE OF GREAT NORDIC LANDSCAPES – TRANSFORMATIVE ACTION NEEDED

Editors: Anne Elisabeth Toft, Magnus Rönn and Johan Wirdelöv

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NAAR

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FOREWORD

Anne Elisabeth Toft and Magnus Rönn

The Nordic Association of Architectural Research (NAF/NAAR) is an independent association of architectural researchers from universities and schools of architecture in the Nordic countries. It has existed since 1987.

NAF/NAAR critically engages in discussing research and architectural knowledge production as evolving practices. It therefore also has a special interest in exploring and documenting the many different discourses that exist within architectural research in the Nordic countries. The association collaborates with various partners, and its annual research symposium is hosted by a different research institution each year.

Creating encounters, interactions, and dialogue between peers has always been central to the association. Its primary function is to facilitate the research collaborations of its members and their exchange and dissemination of research results. Through its research symposia and *NJAR*, its peer-reviewed scientific journal, the association sets standards for the scientific and artistic level of architectural research produced in the Nordic countries.

The present volume is the proceedings publication from the 2024 NAF/NAAR symposium, titled *The Death and Life of Great Nordic Landscapes - Transformative Action Needed*.

This symposium was organized in collaboration with The Department of Landscape Architecture, Planning and Management at the Swedish University of Agricultural Science in Alnarp, Sweden, which also hosted the event on 19–20 September 2024. With its title, which makes use of an undisguised reference to famous American writer and activist Jane Jacobs' 1961 publication, *The Death and Life of Great American Cities*, it wished to critically discuss future urban and rural landscapes in the Nordic countries.¹

With the symposium, NAF/NAAR and its collaborating partner addressed transdisciplinarity and transdisciplinary collaborations between the disciplines of landscape architecture, architecture, preservation, urban planning, and urban design. Participants came together – as stated in the Call for Papers – around the “health status of contemporary landscapes and architecture”, focussing on future challenges, and solutions such as climate change, biodiversity, and green energy sources”.² The Call for Papers made clear that the symposium aimed “to draw on the duality of life and death to evoke questions, and to make the challenges related to urban and rural landscapes appear visible”.³

The proceedings publication consists of articles that have gone through peer review. All the articles in this volume – apart from those by the invited keynote speakers – were thus submitted to a double-blind peer-review process conducted by NAF/NAAR.

Keynote speakers who lectured during the symposium were Kjetil Fallan, Professor of Design History at the University of Oslo, and Johanna Deak Sjöman, Researcher in Green Infrastructure and Urban Ecosystem Services at The Swedish University of Agricultural Sciences.

As President and Vice-President of NAF/NAAR, we extend our sincere thanks to all of the many colleagues who kindly contributed to the symposium and/or to the present volume:

We are indebted to Professor Ingrid Sarlöv Herlin, Head of Department at The Department of Landscape Architecture, Planning and Management at the Swedish University of Agricultural Science in Alnarp for her support for the event.

We extend our warm thanks to our close collaborators in the same institution: Associate Professor Petra Thorpert, Associate Professor Anders Larsson, Lecturer Johan Wirdelöv, and Research Assistant Anna Lund, for the great collaboration we had when organizing the event.

In the same manner, we express our gratitude to the many researchers from The Department of Landscape Architecture, Planning and Management at the Swedish University of Agricultural Science in Alnarp and to the NAF/NAAR Board, whose members participated as moderators during the symposium, thus qualifying its discussions.

Our appreciation goes to the keynote speakers at the symposium, Kjetil Fallan and Johanna Deak Sjöman, who framed the theme of the event and put it into perspective.

We furthermore wish to thank all the participants who submitted articles, whether or not it proved possible to include them in these pages, and all the individuals with whom we have had the pleasure of corresponding or entering into discussion with. We are especially grateful to the many peer reviewers who have supported NAF/NAAR and its work by offering their time and professional expertise in reviewing the articles.

Finally, we would like to direct our thanks to the Åke Wibergs Stiftelse. The publication of the present volume was made possible thanks to the generous support of this institution.

Anne Elisabeth Toft
President of NAF/NAAR

Magnus Rönn
Vice-President of NAF/NAAR

NOTES

¹ Jane Jacobs, *The Death and Life of Great American Cities* (New York: Random House, Inc., 1961).

² See the Call for Papers – <https://arkitekturforskning.net/na/issue/publishing>

³ See the Call for Papers – <https://arkitekturforskning.net/na/issue/publishing>

INTRODUCTION

Anne Elisabeth Toft

The 2024 NAF/NAAR symposium, *The Death and Life of Great Nordic Landscapes – Transformative Action Needed*, holds a special place in the history of NAF/NAAR symposia. For the first time ever, the association held an actual landscape symposium; a symposium whose focus was on the Nordic landscape and its historical and/or cultural development, but which also self-reflexively discussed the epistemological construction of the concept of landscape as well as the discipline of landscape architecture and its discursive positionings.¹ With this symposium, NAF/NAAR and its collaborator, The Department of Landscape Architecture, Planning and Management at the Swedish University of Agricultural Science in Alnarp, Sweden, wanted to contribute to the current discussion(s) within landscape architecture and shed light on what defines its canon and future scope. This focus gave rise to the asking of critical analytical questions about the discipline's theories and methods, and to exploring the legacy of the prevailing Eurocentric and human-centred history/histories and representation of rural and urban landscapes.

The symposium attracted landscape architects, architects, and planners, but also scholars from other disciplines who were interested in dialogue and exchanging knowledge on the subject matter. It involved participants from both academia and practice. The discussions, which included many different perspectives on landscape architecture, regional development, and the evolving meaning of landscapes in the Nordic countries, took their point of departure in the current ecological crisis – and the challenges at hand – hence the title of the event: *The Death and Life of Great Nordic Landscapes – Transformative Action Needed*.

Research finds that in 2025 humanity had transgressed seven out of nine planetary boundaries, threatening the stability of the Earth and the living conditions of both nonhumans and humans alike.² The planetary boundaries – a concept first introduced by researchers from the Stockholm Resilience Centre in 2009 and continuously being updated – map the state of the global environment through nine areas related to the Earth's ecosystem.³ They define a boundary for a so-called “safe operating space” in order to maintain a sustainable planet in the future. With a majority of the planetary boundaries having now been transgressed, many researchers suggest that the Earth is now well beyond being a safe operating space for humanity – and that civilization, as we know it, will face a massive process of change, in which the way we live will fundamentally be altered.

Some of the anthropogenic impacts on the Earth's system that we face today are rooted in past and failed architectural visions that continue to shape our lives. Construction is one of the most resource- and energy-intensive industries in the world and has a direct impact on several of the planetary boundaries.⁴ This means that architects, landscape architects, and urban planners have a responsibility to rethink the practice of construction. But what is needed – professionally, culturally, structurally, and economically – for new practices to be developed and drive the necessary transformation? How do we as architects, landscape architects, and urban planners “re-learn” by reconsidering past epistemologies? And how do we find the courage to change the deep structures and political frameworks that govern our society? How do we leave the growth paradigm and its hegemony behind us?

The symposium's Call for Papers posed the following questions: “What ideas and understandings of landscapes are dying out or thriving today? What actions are impairing or sustaining landscapes? Are planners, landscape architects, and architects involved in sustainable lifecycles and life-supporting actions, or are we just a part of a housing and development industry, that is, merely window dressing in order to hide the most negative consequences of our exploitation of natural resources?”⁵

These questions framed the symposium's discussions. The symposium's theme was based on a holistic perspective and responded to the potential of trans- and interdisciplinary studies and/or collaborations between the fields of landscape architecture, architecture, preservation, urban planning, and urban design.

Embracing a variety of landscape categories, such as urban landscapes, architectural landscapes, cultural landscapes, social landscapes, ecological landscapes, as well as academic landscapes, the symposium was structured in four tracks with the following headings: 1) “Changes in ‘Nordic’ design discourse and theory”, 2) “Collaborative actions for tomorrow”, 3) “The green energy transition and climate change”, and 4) “The great Nordic urban-scapes of the future”.⁶

The objective of track one was to have scholars and practitioners “contribute to a fruitful discussion and rewording of design theory and associated discourses”.⁷ The objective of track two was to focus on cooperative actions between various disciplines and actors so as to promote “the development of sustainable landscapes and cities”.⁸ Track three invited scholars and practitioners to reflect on the many challenges posed by climate change and the green energy transition – focussing on approaches or methods that might support a green transition through planning and design actions that reduce or redistribute energy needs and uses.⁹ Track four discussed hybrid landscapes and new landscape typologies, their functions and representation.¹⁰

The collection of texts in the present proceedings publication reflects the abovementioned categories and classifications. However, the book does not follow the same structure as the symposium and its programme. Rather, it has a heterogeneous structure organized in two parts: Section I and Section II. The first consists of the articles by the invited keynote speakers at the symposium and the second of articles by authors who participated in the symposium with presentations and whose submitted and peer-reviewed articles were accepted for publication, with a total of eight contributions. By structuring the book in this way, Section I creates a conceptual context for Section II.

SECTION I

Kjetil Fallan, Professor of Design History at the University of Oslo, who was a keynote speaker at the symposium, has a research interest in materials. This interest, rooted in design studies and its epistemology, addresses the ecological implications of design and designing, foregrounding material flows. His article, “Groundwork: Connecting Design, Materials, and Landscapes”, originally published in 2024,¹¹ pursues this issue, advocating for a so-called environmental history of design. In his article, Fallan reflects on the role that design and the production of artefacts or design objects play

in how raw matter is extracted, processed, and eventually disposed of or reused. Human-altered landscapes are often the result of landscapes from which materials have been extracted. But they can also be the result of added materials in the form of, for example, landfills, constructed locations for solid waste disposal. The article points out that industrial mass-production requires the mass-destruction of “nature” to procure the materials needed for production, and Fallan argues that by following material flows, “landscapes can be seen as shaped by design, but also as shaping design”. In his article, we are presented with three different cases from the Nordic countries, each of which puts the above-mentioned reciprocal relationship into perspective in its own way, thus leading Fallan, who reads the traditional (Western) history of design as “a history of detachment, of estrangement”, to the central research question in his article: “Can we imagine a history of design which could bridge modernity’s gap between nature and culture, and help reconnect the decision-making *about* materials with the product-making *with* materials?”

Recognizing the important role of landscape architects in society and that it has perhaps never been clearer or more necessary in light of current climate change and urban development, the article “The Speed of Landscape: Making Space for Time with Examples of Climate Adaptation and Green Infrastructure” reflects on “the past and the present with consideration of how to understand the future role of the urban biosphere without anthropocentric intentions”. Authored by Swedish landscape architect Johanna Deak Sjöman, also a keynote speaker at the symposium, it more specifically illuminates the complexity of climate adaptation and the inclusion of green infrastructure in urban space. Drawing on recent philosophical and ecological theory Deak Sjöman reminds us of the epistemology of the discipline of landscape architecture and the philosophical split between society and nature, noting “how the very construct of the concept of nature alienates us”.

SECTION II

The article “Electroscapes: Socio-Spatial Perspectives on Energy Transition” by Runa Johannessen and Kirsten Marie Raahauge deals with new and emerging landscape typologies. Focussing on the transformations of landscapes subject to energy extraction related to renewable energy, it concerns the human-altered landscapes created by the “green transition” from fossil fuels to renewable energy sources. Coming from the disciplines of architecture and anthropology respectively, Johannessen and Raahauge are interest-

ed in investigating the new typologies and their characteristics, suggesting the term “electroscares” for landscapes that are subject to energy extraction related to renewable energy. Arguing that these landscapes are contested, often causing conflicts between global needs and the values belonging to a specific place and its ecologies, they address the subject of their article from a socio-spatial perspective. Johannessen and Raahauge critically reflect on the dilemmas posed based on two Nordic examples: two cases of Nordic electroscare transformations in Norway/Sápmi and Denmark.

“Thinking of Nature in Building and Construction: Linking the Environmental Philosophy of Arne Næss with Kinji Imanishi and the ‘World of Living Things’” is an article by Norwegian architect and engineer Bendik Manum. Describing how the loss of natural diversity threatens life on Earth, his article aims to “increase awareness of the role of nature in architecture and to contribute to a framework for discussing impacts on life in nature arising from buildings and infrastructure”. Several of the Earth’s planetary boundaries have already been breached, and, according to Manum, architects and engineers have a special ethical responsibility vis-à-vis the environment because these professionals, through their work, are part of a construction industry known for its very high CO₂ emissions.¹² Reminding us that the traditional nonduality of Eastern thinking differs greatly from common thinking in the West, Manum critically addresses the constructed opposition between nature and culture that has dominated the natural sciences, anthropology, and philosophy in the Western world for centuries. By doing so, while searching for alternatives or ways to bridge Eastern and Western thinking, he looks into the theoretical work of Japanese ecologist and anthropologist Kinji Imanishi and Norwegian philosopher Arne Næss. Manum’s article unfolds as a presentation and discussion of their ideas, pointing out various elements of their respective works that, in his view, “appear particularly relevant for thinking about nature from the perspective of architecture and construction today”.

In the article “Exploring Embedded Heritage Knowledge and Its Role in the Development of Place Quality”, architect Vignir Freyr Helgason presents a heritage management case study. His investigation focusses on Lørenskog, a rapidly growing municipality with a changing population composition close to Oslo in Norway. Since the 1980s, Lørenskog has been heavily urbanized, transformed from forest and countryside characterized by farming to an

urban area. Using a term coined by German architect and urban planner Thomas Sieverts, it is a “Zwischenstadt” – a phenomenon which is neither a rural or farming landscape nor a city. Through pursuing the notion of “place quality”, Helgason is interested in investigating how the intense densification and urban development process in Lørenskog has changed the place and its identity. More specifically, he wants to examine how the development has impacted the inhabitants of Lørenskog – a diverse group of people, some of whom are newcomers or migrants – and how they read their context, its quality, and its cultural heritage. Helgason’s reflections in the article are based on a series of qualitative interviews that he conducted with locals from Lørenskog.

Also focussing on heritage, but in a Danish context, and with a different perspective in mind than Helgason, the architect Birgitte Tanderup Eybye presents a survey of current Danish conservation practice. She does this to spark a discussion about how architectural heritage contributes to sustainable development, as well as to illuminate the extent to which sustainable concerns are part of recent conservation work in Denmark. The objective of her article “The Landscape of Danish Architectural Heritage, Examining Sustainability in Current Conservation Practice” is thus to present her study of how sustainability is addressed specifically in conservation work in Denmark. Her article includes a case study of one of the oldest listed buildings in Denmark. According to the author, she executed this case study “with a view to investigating how sustainability may be promoted in conservation practice”. The selected case in question is the convent Ørslev Kloster, since this building, according to Tanderup Eybye, has the highest number of registered sustainable aspects in her survey. The findings presented in Tanderup Eybye’s article demonstrate that strong protection of cultural heritage can be combined with sustainability in architectural conservation.

The contribution by Swedish architects Andreea Cristiana Blaga, Jimmie Andersén, and Bertil Malmström falls within architectural history and the canons of landscape architecture and city planning. The historical study “Per O. Hallman’s Formative Phase: Integrating Natural Elements in Swedish City Planning” concerns a significant yet today largely overlooked, Swedish architect of the nineteenth and twentieth centuries and his impact on early modern city planning in his native country. Per O. Hallman’s perhaps most major contribution to architecture was his integration of artistic values and

natural elements in Swedish city planning. His approach to the latter, which was informed by international theories on the subject matter, stood in stark contrast to those of most of his Swedish colleagues and contemporaries: in the latter half of the nineteenth century, city planning in Sweden was predominantly a technical and pragmatic endeavour, strongly dominated by engineers and land surveyors, who approached urban development with a focus on functionality, efficiency, and adherence to strict regulatory frameworks and gridiron plans. As articulated in the article, Hallman's concepts, characterized by topographical responsiveness, aesthetic composition, and an insistence that cities be designed with everyday life in mind, however, "gave form to a new planning discourse in Sweden that resonated across the Nordic region". Blaga, Andersen, and Malmström want to shed light on the formative experiences that led to Hallman's distinct approach to city planning, arguing that, according to their knowledge, such an investigation has so far been lacking.

The article "Frameworks for Planning Spaces for Children in Sweden – From Past to Present" also explores the history of modern Swedish city planning. The article, written by Swedish landscape architects Linnea Fridell and Maria Kylin, focusses on the city planning of the last century, bringing attention to spaces for children. The article reflects on conditions for children and their physical environment and wellbeing in the modern Swedish city, and discusses society's shifting understandings of childhood and how the architectural and urban representation of changing concepts of childhood developed during the twentieth century. Furthermore, Fridell and Kylin want "to elaborate how the spatial distribution of spaces for children in the urban context reflects and influences the social understanding and construction of childhood". Through addressing the history of regulations for spaces for children, the article traces and examines the quantitative guidelines for spaces for children in Swedish planning over the decades, concluding with perspectives on contemporary city planning and the evolving planning discourse.

Landscape architecture is informed by many disciplines and discourses, often operating at the intersection of the natural sciences, engineering, and the humanities. By combining art and science, it links technical disciplines and human experience. With a strong focus on spanning a bridge between research and contemporary challenges in the built environment, our goal – in summary – is for this volume to contribute to the current discussion(s)

within landscape architecture and to shed light on what defines its canon and future scope. Through pursuing ideas and understandings of both emerging and disappearing landscapes and their notions, the volume suggests that the current ecological crisis is also a crisis of representation; a crisis of epistemology that fundamentally challenges our imagination and communication.

NOTES

¹ The definition of “landscape” by the European Landscape Convention (ELC) – as referred to in the symposium’s Call for Papers – is: “‘Landscape’ means an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors. Landscape thus includes buildings and architecture and their natural surroundings, as well as regions in a wider sense.” See the Call for Papers – <https://arkitekturforskning.net/na/issue/publishing>
For further information, see <https://www.coe.int/en/web/landscape/the-european-landscape-convention> [all URLs here accessed in May 2026].

In 2017, NAF/NAAR held the symposium *Reflecting Histories and Directing Futures* in Oslo, Norway, in collaboration with researchers from The Oslo School of Architecture and Design (AHO) and The Norwegian University of Life Sciences (NMBU), respectively. This symposium, which discussed how the concept of the future has been expressed and understood in and by architecture in recent history, and in what way this understanding has shaped architectural discourse, also had a partial focus on landscape and landscape architecture. For more information, see <https://arkitekturforskning.net/na/issue/publishing>.

² The boundaries that have been breached include climate change, biosphere integrity, land system change, novel entities, ocean acidification, biogeochemical flows, and freshwater use. See <https://www.stockholmresilience.org/research/planetary-boundaries.html>.

³ <https://www.stockholmresilience.org/research/planetary-boundaries.html>.

⁴ <https://rgo.dk/en/fokusomrade/cirkulaert-byggeri/>.

⁵ See the Call for Papers – <https://arkitekturforskning.net/na/issue/publishing>

⁶ See the Call for Papers – <https://arkitekturforskning.net/na/issue/publishing>

⁷ See the Call for Papers – <https://arkitekturforskning.net/na/issue/publishing>

⁸ See the Call for Papers – <https://arkitekturforskning.net/na/issue/publishing>

⁹ See the Call for Papers – <https://arkitekturforskning.net/na/issue/publishing>

¹⁰ See the Call for Papers – <https://arkitekturforskning.net/na/issue/publishing>

¹¹ Kjetil Fallan’s article was published in an earlier form in *Resistance: A Journal of Radical Environmental Humanities* 11, nos. 2–3 (Spring–Fall 2024).

¹² <https://rgo.dk/fokusomrade/cirkulaert-byggeri/#:~:text=Cirka%2040%20procent%20af%20verdens,globalt%20plan%2C%20g%C3%A5r%20til%20byggeriet>.

GROUNDWORK: CONNECTING DESIGN, MATERIALS, AND LANDSCAPES

Kjetil Fallan

ABSTRACT

To the extent to which materials have been a matter of concern in design history, it has largely been in the shape of finished goods. But this image of design history as a history of objects is being challenged by an increasing interest in material ecologies of design. After all, an artefact represents merely a particular, solidified state of the material flows that constitute design culture. Such a shift in perspective not only brings materials to the foreground, but also lays bare the landscapes from which they are extracted. By following material flows, then, landscapes can be seen as shaped by design, but also as shaping design. A crucial, but often underappreciated aspect of the act and process of designing is the way in which it prescribes and regulates the use of materials. Whether what is concerned is a materialization of a building, car, chair, park, book, or website, designing it entails consequential deliberations and decisions about precisely what materials go into its production, distribution, maintenance, and disposal. Few designers these days harvest the cotton or fell the timber that goes into the products they design. And perhaps this is part of the problem? Can we imagine a history of design which could bridge modernity's gap between nature and culture, and help reconnect decision-making *about* materials with product-making *with* materials? Through case-studies examining the extraction of peat, iron, and wool, I argue that acknowledging how designing regulates the use of materials will improve our understanding of how design, in turn, shapes the landscapes of the Anthropocene.

KEYWORDS

Design, materials, landscapes, extractivism, consumption

INTRODUCTION

High up in the Andes mountains, in the northwesternmost corner of Argentina, in the borderlands with Chile and Bolivia, lies the third largest salt flat in the world, the Salinas Grandes. This vast, white desert 3,500 meters above sea level and extending over 200 square kilometres is a beautiful, awe-inspiring landscape. However, as mining operations here escalate and subject nature to human needs, the spatial and temporal experience of this landscape is gradually shifting character and seems to hover between what David Nye has characterized, respectively, as the natural sublime, the technological sublime, and the environmental sublime.¹

That this landscape now has become an object of desire for multinational corporations is because of the brine rich with lithium found beneath the salt flat. The large-scale electrification and digitization of our design culture has made lithium a coveted commodity, as it is a key component in the batteries that power our electric vehicles (EVs), phones, and laptops. While electrification and digitization may have positive environmental effects in an abstract and global sense, their oft-underplayed materiality has disturbing ecological ramifications when one considers concrete, local contexts such as the Salinas Grandes.² The crux of the matter is that the lithium extraction process is highly water intensive, requiring somewhere between 500,000 and two million litres of water to extract one ton of lithium.

Needless to say, in such an extremely arid environment, water is an exceedingly scarce resource of great significance to the local communities. The Salinas Grandes belongs to the ancestral territory of the Indigenous Kolla and Atacama peoples, and the area today has about 6,500 inhabitants. Quite understandably, they are currently protesting against the increasing exploitation of their land and the threats it poses to their livelihood and culture.³ Next to the only throughfare, Route 52, they have put up a sign which reads: 'The native communities say NO TO LITHIUM. Yes to water and to life in our territories' (fig. 1). If the water runs out, their crops will fail and their livestock will die. If the llamas disappear, the weavers will lose both their raw material and their income. Water and wool, brine and batteries. It is all connected. It is all design.

GROUNDING DESIGN HISTORY

Design is shaping the landscapes of the Anthropocene in myriad ways.⁴ Of all the design disciplines, landscape architecture has the greatest impact,

literally, as its practice is defined by direct interventions in the ground. Architecture, civil engineering, and urban planning have the most conspicuous impact as a result of the sheer size and scope of the resulting footprint and mass of constructions. Other design disciplines shape the landscape less literally or conspicuously – but no less significantly. Industrial design, for instance, influences landscapes both ‘upstream’ and ‘downstream’ from the actual manufacture and use of objects. This corresponds to the notion of nature both as the ‘tap’ from which resources are drawn, and the ‘sink’ into which waste is dumped.⁵ The most obvious *downstream* consequence of mainstream design culture is discarded products, in other words rubbish, which shapes landscapes both in its dispersed form as ‘matter out of place’,⁶ that is litter, as well as in its concentrated, sanctioned form, in other words, landfills.⁷ As such, designers are arguably the quintessential ‘waste makers’,⁸ and therefore key contributors to the condition Marco Armiero has dubbed the ‘Wasteocene’, where society’s woefully inadequate ability to manage our



Figure 1: Sign next to Route 52 through Salinas Grandes, Argentina. Photo: the author

waste generates deeply disturbing social, health, and environmental problems.⁹ The way in which industrial design shapes landscapes *upstream* from manufacture and use, however, is perhaps less obvious, but all the more worthy of attention.

A crucial, but often underappreciated aspect of the act and process of designing is how it specifies and regulates the use of materials. For a working definition of what materials are (as opposed to materiality), we can reason, along with Tim Ingold, that the environment is a world of materials in constant flux: 'materials ... are the active constituents of a world-in-information' – 'they partake in the very processes of the world's ongoing generation and regeneration'.¹⁰ An environmental history of design thus has much to gain from following the flows of materials rather than focussing on their (temporary) object-stage, which tends to obscure their material constitution.¹¹ Whether what is to materialize is a building, car, chair, park, book, or website, designing it entails consequential deliberations and decisions about, precisely, which *materials* will go into its production, distribution, maintenance, and disposal. Few designers these days harvest the cotton or fell the timber that goes into the products they design. And perhaps this is part of the problem? The distance between designers and materials, between designing and manufacturing, between cause and effect, can largely be traced to the (Second) Industrial Revolution and its logic of the division of labour and mass production:

[T]he 'modern' design discipline, focussing as it does on imbuing finished forms with certain styles or sensibilities, and far less concerned with the processes that actually gave rise to them, is arguably deeply rooted in a process of continuous obscuring and constant 'othering' of material reality. ... In a product- and commodity-obsessed age, design then became a field that – rather than encouraging us to correspond with our material surroundings – disconnected us from them.¹²

In this sense, then, the history of design is a history of detachment, of estrangement. As such, the history of design is indeed entangled in the broader process of modernization, which is characterized by the same distancing, through which the relationship between humans and the Earth is downplayed.¹³ 'Only a society utterly secure in its comfortable technological environment could so easily ignore its material foundations in the natural

world', writes Timothy LeCain.¹⁴ Bruno Latour has advocated a re-materialization of the concept of the Earth in response to the abstract notion of the globe/global/globalization that has characterized the modern project.¹⁵ The 'global' can also be superseded by the notion of the 'planetary', which in a similar fashion allows the Earth to reemerge 'as an unfamiliar place riddled with eerie, destructive, and menacing forces.'¹⁶ The 'terrestrial condition' resulting from such a re-materialization would then provide a new baseline for design, in which we as human beings coexist 'with other entities that are no longer mere resources for human exploitation.'¹⁷

How, then, should we engage with the history of design? Can we imagine a history of design which could bridge modernity's gap between nature and culture, and help reconnect decision-making *about* materials with product-making *with* materials? Two gentle reminders might help steer us in the right direction: firstly, we can consider Dipesh Chakrabarty's claim that the most significant implication of the Anthropocene debate for historical scholarship is how it breaks down the conventional separation between natural history and human/cultural history.¹⁸ Secondly, we can acknowledge that environmental histories of design should consider both sustainability and unsustainability so as to avoid perpetuating the normative bias towards 'good design' which has skewed so much design history.¹⁹ With these two reminders in place, we are better equipped to explore 'design's complex interrelations with nature and the environment',²⁰ and to examine more precisely how designing regulates the use of materials and how this in turn shapes the landscapes of the Anthropocene.

PEAK PEAT

If you look at a satellite photo of the Holmegaard glassworks, situated on marshlands in southern Zealand, Denmark, you will see a range of large, black rectangles adjacent to the site of the works (fig. 2). These massive cutouts in the ground, so big that they rival the footprints of the neighbouring factory buildings, are peat pits. The peat, of course, was extracted to fuel the furnaces which melted the glass. In fact, the glassworks were situated here specifically because of the peatbog. Glass production is highly energy intensive. It is made by melting together silica sand, soda ash, and limestone, a process which requires temperatures of about 1700 degrees Celsius. The high temperatures make starting and stopping the furnaces inefficient, and therefore incentivize continuous production, which further drives the demand for energy. Most of the processes through which the glassware is then shaped from the mass also

necessitate working at high temperatures, again adding to the energy use. So, even without considering the extraction, processing, and transport of the raw materials needed, or the distribution and discarding of products, the act of designing glass involves an extensive consumption of energy. Although my focus here is on the ‘upstream’ case of energy consumption’s relation to materials and landscapes, it bears mentioning that glass factories are also notorious for polluting their surrounding landscapes through ‘downstream’ effects. The soil is, consequently, replete with toxic metals, the environs are littered with glass residues, and waste materials from the production has in many places even transformed large areas of land, for example, through local landfills.²¹

When Denmark lost dominion over Norway in 1814 following the Napoleonic Wars, the Danish landscape had been almost completely deforested due to rampant overexploitation of its modest timber resources. Timber was crucial for all sorts of design purposes, from cart wheels, tools, and furniture to ships, buildings, et cetera – but it was also the preferred fuel for heating. Abundant access to firewood as fuel is why the Danish Crown had established the nation’s glassworks in the eighteenth century, not on Danish soil, but in the depths of Norwegian forests. The manufactories at Nøstetangen (1741),



Figure 2: Satellite photo showing the peatbog next to the Holmegaard glassworks. Screenshot: Google Maps

Hurdal (1755), and Hadeland (1762) supplied the Danish market with glass until the Treaty of Kiel severed Denmark's access to Norwegian woods and goods. This loss of land and resources is what led to the establishment of a new glassworks on Danish home turf, and explains why it was located next to the peatbogs at Holmegaard.²²

Opening in 1825, Holmegaard fuelled its furnaces with peat for the first century of its operations. Traces of the peat digging of the nineteenth century can still be seen in the landscape, but given that this activity continued for a century, its impact on the land is surprisingly moderate. By contrast, the large, black, cookie-cutter cavities dominating the satellite photo stem from a brief intermezzo of five years, during the Second World War. Due to technological developments, increased production volumes, and economic considerations, by 1924, Holmegaard had stopped using peat and converted first to wood and coal, and then, a decade later, to oil – all of which had to be imported. The architect Jacob E. Bang became design manager for the company in 1928 (until 1941), overseeing a marked modernization of Holmegaard's product portfolio – epitomized by the 'standard' beer glass, Hogla.²³ Bang also designed packaging glass, a product category which the company expanded to such a level that it warranted the installation of a fully-automated bottle-making machine in 1935.²⁴ The outbreak of the Second World War threatened to stymie this development towards greater efficiency in design and production. It abruptly cut off the supply of oil, and the factory thus reverted to peat as an austerity measure to keep the furnaces burning. But the war-time peat extraction took on an entirely different scale than in the first peat era. This was necessitated by a much higher production volume and made possible by the development of purpose-designed machinery, which fostered the logic of making much deeper and larger continuous pits. After the war, Holmegaard reestablished its supply of imported oil, and stopped extracting peat – this time for good. But the resulting black pools remain, like artificial lakes, as the surrounding marshes keep them filled with water. The industrial scale of these intensive extractions, and the stagnant water that fills them, means that, unlike their nineteenth century predecessors, they will never recover or grow over. The wounds will never heal.²⁵ As Anna Storm remarks in her study of *Post-Industrial Landscape Scars*, 'While a scar bears the potential capacity to heal, recover, and reconcile, this is not a self-evident outcome.'²⁶ But even sites that will never revert to their former states may provide important insights into the ramifications of unsustainable landscape use, though as 'stories of redemption, not restoration.'²⁷

In one, simple image, then, we have here a striking illustration of how the practice of design actively shapes landscapes by regulating the consumption of materials. Intriguingly, Denmark's most prominent glass designer, Per Lütken, started his long career at Holmegaard during this peak peat moment, in 1942. Holmegaard glassware is a prominent feature of Danish design history²⁸ – but has also directly impacted the material realities of the region's landscapes. This immediate and highly visual connection between glass design and peat pits shown here may today seem like a curious thing of the past. But even as glass production at Holmegaard was later fuelled by oil from far-flung corners of the world, and more recently shifted to natural gas from the North Sea, its energy consumption still contributed to an unsustainable use of non-renewable natural resources. And the energy requirements of other design-driven industries have continued to shape Nordic landscapes, from the large-scale hydroelectric developments in the postwar period to the offshore oil and gas installations established starting in the 1970s, to the heated debates over wind turbine placements today.

IRON WILL

Design can move mountains. In his history of open-pit copper mining in the twentieth-century United States, Timothy LeCain describes this extraction technology and industrial practice as 'mass destruction'. Despite its common connotations with warfare and terrorism, LeCain insists that 'the term is appropriate because it echoes the better-known concepts of mass production and mass consumption – both of which depended on mass destruction to supply the essential raw materials.'²⁹ The argument is as compelling as it is disturbing, and eloquently stitches together the practice of designing with the access to materials and the shaping of landscapes which I aim to explore here. The challenge we are faced with is that while mass production and mass consumption are readily recognized as defining features of modern design culture, mass destruction is not: 'The connections backward from a stylish new refrigerator with copper coils to a mine in Utah are not at all obvious.'³⁰ In recognition of the increasing entanglements of technological and ecological systems, making those connections manifest should be a key concern for design history, thus helping to transcend the traditional distinction between cultural history and natural history.

The Second Industrial Revolution (circa 1870–1910) saw an exponential increase in the mass production of commodities. Arguably, the role of the designer and the process of designing in their modern-day configurations

were born of this watershed in how the manufacturing of goods is organized. Industrial modernity's continuous quest for new markets and materials to feed the factories directly implicated modern design culture in the colonial world order and processes of globalization. In this manner, mass production brought mass destruction to all parts of the world, including Nordic landscapes previously little affected by industrialization.

The epitome of this shift in the Nordic region is the mining town of Kiruna in Norrbotten, Northern Sweden, established in the 1890s to exploit on an industrial scale the vast iron ore deposits situated in the neighbouring Kiirunavaara and Loussavaara mountains. Kiruna became the heart of what was dubbed 'the land of the future', the northern region of Norrland with its rich natural resources, conceived of as the engine tasked with pulling Sweden up into the ranks of wealthy, modern nations³¹ (fig. 3). Wealth did follow, but disappointingly little of it was invested in local communities and infrastructures – which is just yet another way extractive capitalism impoverished the environment.³² Modernity revealed a remarkable appetite for efficient construction and high-performance materials. The ensuing desire to design with iron and steel resulted in an unwavering will to mine the rich



Figure 3: Axel Törneman, *Ore Mining in Kiirunavaara*, 1919. Kiruna Municipality. Public Domain

ores in Kiruna and similarly mineral-endowed places, which in turn has had profound and far-reaching ramifications for the environment. The Scandinavian peninsula has a long history of mining, the activities of which extended through wide-ranging transnational manufacturing networks. But the operations in Kiruna are of a scale that dwarfs most others. Iron ore from Kiruna would supply the booming manufactured goods industry across Europe, and especially Germany. Staples of modern design history, from AEG table fans and Bauhaus furniture to the Volkswagen and the Tiger tank, would be unthinkable without this seemingly bottomless supply of iron ore.

In the early years of the twentieth century, before the immense economic significance of mining in Norrbotten was established, an intense public debate broke out over whether the iron ore should be exported directly or retained in Sweden for processing into steel in support of a potential domestic manufacturing industry. At this time, the promise of short-term export revenues and the unstable geopolitical situation in Europe helped push the consensus towards a policy of prioritizing iron ore export over domestic processing.³³ As it transpired, however, Swedish design history is in no way light on steel, as the domestic manufacturing capacity in this sector emerged in spite of these policy priorities: Husqvarna motorcycles, Electrolux appliances, Gense flatware, Kockums cookware, Bahco hand tools, Atlas Copco rock drills, Bofors guns, Monark and Crescent bicycles, Saab and Volvo cars, Scania and Volvo trucks – and the list goes on (fig. 4). In writing this history, the challenge nevertheless remains of tracing the connections backwards from a stylish new refrigerator with a steel chassis to a mine in Norrland, and how the underlying design practices have shaped the precarious landscapes of the high north.

‘The first thing that catches the visitor’s attention in Kiruna,’ wrote Lasse Brunnström in his study of the town’s establishment, ‘is the blue-black mine mountain Kiirunavaara, which constantly changes appearance.’³⁴ A more recent description corroborates the looming omnipresence of the mountain, adding that ‘the view hardly evokes nature; it is industrial, muscular, titanic.’³⁵ The mining is designing the landscape in the most brutal manner, converting nature into industrial wasteland. It is a ‘design noir’ version of landscaping. The operations at Kiruna began as an open-pit mine, working the mountain downwards from the top, gradually grinding it down, shifting its shape and shaving off its silhouette. Intriguingly, though, when the mining project was presented at the Exposition Universelle in Paris in 1900, the Kiirunavaara

mountain was shown in an ‘untouched’ state in a painting by Karl Nordström – positioned behind pieces of iron ore and a model of the area by the sculptor Christian Eriksson, thus creating a distinctly paradoxical, if not plain misleading, image of the industrial exploitation of Norrland’s landscapes.³⁶ Open-pit mining at Kiirunavaara came to a halt in 1962, as it had become clear that the bearings ran deep. The excavation thus went subsurface, and it eventually developed into the largest underground iron ore mine in the world. Today, 150,000 tons of iron ore are extracted from the mine each day.

The mine itself is, of course, just the most intuitive and immediate alteration to Kiruna’s landscape caused by iron-hungry design practices elsewhere. Getting the ore out of the ground required an organizational and technological infrastructure, and it required manpower, which, in turn, had to be sheltered and fed. There was no existing urban settlement close enough to serve as a base for the mining operation, so not only the industrial infrastructure, but also the company buildings, workers’ housing, civic architecture, and the town in general had to be designed and built from scratch. The remote location made it impractical to rely on foodstuff being shipped in, necessitating the conversion of the town’s hinterland to agricultural purposes. Both



*Figure 4: Husqvarna waffle iron. Designed by Sixten Sason, ca. 1960.
Photo: Tekniska Museet. CC-BY*

construction work and farming were complicated by the fact that Kiruna is situated north of the polar circle and above the tree line. As a bona fide company town rising *ex nihilo*, as it were, Kiruna's early architecture could certainly be viewed as a coherent built environment, emerging as it did from the hands and minds of a handful of industrialists and architects in a short time span. But its designers were largely Stockholm-based architects who drew their inspiration from contemporary continental architecture, and who barely, if ever, even visited the site.³⁷ In other words, hardly the ideal conditions for designing in harmony with local ecological systems. Constructing a mining town in a precarious arctic nature, on land which had been under the care of the indigenous Sámi population for millennia, clearly resulted in quite invasive transformations to the landscape.³⁸ Building industrial towns in the Sápmi region was an invasive and disruptive move in several respects. As Elin K. Haugdal has argued, 'the loss of home experienced by Sámi populations is closely related to the causal complex of the modernization of the dwelling, the division between life and work, and the devaluation of tradition.'³⁹

But getting the ore out of the ground is just the first step. Getting the ore out of Kiruna so that it could be converted into objects of desire elsewhere required the creation of a 'technological megasystem' including railways, sea port facilities, and power plants.⁴⁰ A key element in this system was the design and construction of a designated railway southwards to the port of Luleå on the Gulf of Bothnia and westwards across the border to the port of Narvik on the Norwegian coast. Building 400 kilometres of railroad cutting across the Scandinavian peninsula through rugged terrain was, of course, a very concrete and extensive intervention in the region's landscape, not to mention the impact of extracting all the resources that went into its construction. In order to electrify the railway, the mining operations, and towns, a series of fifteen hydropower plants were built along the Lule River, further adding to the large-scale redesign of the landscape. The railway line's disruption of traditional reindeer herding routes was regarded as insignificant collateral damage, but both this and the increase in tourism brought about by the railroad connection also resulted in changes to the uses of the landscape.

As geologists and mining engineers learned more about the subterranean conditions of Kiirunavaara, it became apparent that the richest veins ran straight down under Kiruna town, which, for reasons of convenience, had been constructed adjacent to the original open pit. The gluttonous mineral extraction thus eventually quite literally undermined the town which had

been designed for the sole purpose of operating the mine. Talk about putting the iron in irony! In 2004, the mining company LKAB thus declared that the town had to be moved out of the way.⁴¹ Closing down the mine clearly was not an option. Following an architectural competition won by White Arkitekter in 2012, the comprehensive redesign of the local community commenced, at an estimated cost of at least 1.2 billion U.S. dollars. Although oft repeated in the broad media coverage, the rhetoric of ‘moving’ the town is actually rather misleading. Only a small number of buildings, chiefly from the town’s early development, have actually been transported from the old town centre to the new location three kilometres to the east. Beyond that, the ‘move’ has consisted of demolishing the old and building from scratch, including new housing for a third of the population.

When the Swedish Centre for Architecture and Design (ArkDes) showed the exhibition *Kiruna Forever* in 2020, the focus was, quite understandably, chiefly on the architectural and cultural heritage of the town combined with the urban planning challenges of the spectacular move. Based on the arguments that I have presented here about the place of materials and landscapes in design history, however, we could imagine an extended view supplementing the exhibition, focussing on the multifarious and far-reaching material ecologies of design extending from the mine and town of Kiruna. The exhibition’s curator did describe iron ore from Kiruna as a ‘hyperobject’, following Timothy Morton’s coinage,⁴² as ‘it involves multiple places and times simultaneously; it has multiple effects in humans and non-humans’.⁴³ This prompt can easily lead us to the familiar terrain of design history, but now appreciated from a new vantage point. Iron and steel have been entirely integral to the mechanization, multiplication, and mobilization at the heart of modernization, and what has facilitated this integration are design practices premised on an extractivist logic, on the exploitation of natural resources.⁴⁴ The simple, yet significant fact that the biggest customers of Kiruna iron ore today are the construction industry and the car industry should in itself suffice to make it loom large in the history of design. When it doesn’t, it means that we fail to fully appreciate the ecological ramifications of designing buildings, cars, and many other modern conveniences.

WORLDS OF WOOLCRAFT

Based on the case studies discussed so far, we might get the impression that design’s voracious appetite for materials invariably adversely affects the landscape. And whereas this perspective remains a much-needed counterbalance

to the all too prevalent perception of design as an inherently positive force,⁴⁵ we would be well-advised to recognize a greater variety in the environmental impact of the relations between design, materials, and landscapes. Wool might lead us down a productive path in this respect. Firstly, unlike peat and iron, wool is a renewable resource. Secondly, the harvesting of it does not result in artificial pools in the peatbog, disintegrated mountains, or the moving of towns. Nevertheless, designing with wool does affect landscapes, through the intermediary of its producer: sheep. Much can be said of the ecological performance of wool as staple material in the production and use of textiles and garments, especially when compared both to other natural fibres such as cotton and to synthetic ones such as polyester.⁴⁶ In the present context, though, my main concern is the connections threaded through design, materials, and landscapes.

In many regions, grazing sheep – prized for their meat, skin, and wool alike – have been a stable presence for millennia. In this context, they are also usually considered an active agent and benevolent force in tending to the cultural landscape. But this delicate symbiosis between animals, humans, resources, and landscapes can be thrown off kilter when gradual transformation gives way to abrupt transposition, for instance, in the form of pastoral colonialism. When European settlers established a sheep industry in Patagonia in the nineteenth century, overgrazing subsequently destroyed the local ecosystem and the business collapsed. In New Zealand and Australia, the business-side of it flourished, but the invasive industry would forever change the land, decimating local flora, fauna, soils, and peoples. By 1890, there were over 100 million sheep in Australia, and their impact is hard to overestimate. In the words of William Beinart and Lotte Hughes, ‘sheep were deeply implicated in the displacement of indigenous people as well as in bringing about environmental change.’⁴⁷ There is definitely truth to the national myth that Australia was built ‘on the sheep’s back’ through design, innovation, and entrepreneurship. But this history ‘is also a story of conquest, subjugation, and ecocide.’⁴⁸ The ecologically troublesome Australian merino wool was a quintessentially colonial commodity, as the bulk of it was exported to European (largely British) textile mills, whose product design strategies were driven by changing fashions and consumer preferences.⁴⁹ Long before this system of pastoral colonialism, however, intensive and extensive sheep herding on English homelands to supply the booming textile industry with wool had turned farming commons into enclosed pastures to such an extent that feed became more precious than food, popularizing (or mythologizing) the proverb ‘sheep

eat men.⁵⁰ But in less exploitative contexts, designing with wool can have far more beneficial effects on local ecologies and societies. Two Scandinavian initiatives from the 1970s might serve to illustrate this point.

Austvatn Craft Central was set up in 1970 as part of a governmental-initiated project aiming to mitigate depopulation and socioeconomic issues in Nord-Odal, a small rural community in the hinterlands of eastern Norway. Organized as a cooperative, the basic idea of the craft central was to utilize locally available resources (natural and human) to create employment and revenue for the community by manufacturing useful products in series by hand. Inspired by the nineteenth-century home craft movement and its roots in the natural economy of agrarian communities characterized by local production and direct trading and bartering, Austvatn Craft Central sought to reestablish a more direct and explicit connection between design, materials, manufacturing, community, and land. This ambition was key both to the two young designers Olav Dalland and Rolf Harald Olsen, who helped create the craft central, and to the renowned textile designer Sigrun Berg, who was commissioned to design its flagship product, a woven wool carpet (fig. 5). Berg's design for the carpet deliberately avoided the use of any prescribed pattern, and the wool was not supposed to be sorted based on its composition or patterning. Not only did this result in a natural variation in how each carpet would look and feel, but it also made for efficient use of resources and ease of manufacture.⁵¹ Adding to the resource efficiency was the fact that the wool used at Austvatn was surplus material from meat production, provided free of charge, as it would otherwise be wasted since the producer lacked an infrastructure to utilize it.⁵² Connecting the material to the land in this case was not just the grazing sheep keeping the cultural landscape open, but how the ideology underpinning the initiative was based on the potential of using design to actively support the local community in building social, economic, and ecological sustainability.⁵³ Ultimately, though, the economic viability proved insufficient, and the labour-intensive, high-quality handmade products became too expensive to compete in a challenging market. Austvatn Craft Central thus folded in 1973 due to financial difficulties.

Meanwhile, similar connections were threaded through design, wool, and rural landscapes at Thyholm, in western Jutland, Denmark. This is where Kristian Vedel settled in the summer of 1971 upon his repatriation following a three-year tenure as professor of industrial design at the University of Nairobi, Kenya, in what was Africa's very first programme of its kind. The

years in Kenya and a previous journey through Central America had made Vedel lose faith in his profession, conventionally practiced as a facilitator of mass-production and mass-consumption. In an effort to tread more lightly on the Earth, he and his wife, Ane – an interior designer – then bought an old farmstead and took up sheep farming. The idea was that the sheep would provide raw materials for a new design practice geared to local, small-scale production of yarn, woven textiles, knitted garments, and leather goods. Much of the local land consisted of small plots and uneven terrain unfit for industrialized agriculture, and thus left uncultivated. Reintroducing grazing sheep to the area restored the cultural landscape and increased its biodiversity by providing natural fertilization of the soil, attracting insects and birds to the revitalized flora. The sheep and the landscape became Vedel's passion, and he never returned to the realm of mainstream industrial design.⁵⁴ Like in the case of Austvatn Craft Central, the economic viability of Vedel's new



*Figure 5: Textile designer Sigrun Berg and assistants in her studio.
Photo: Teigen Fotoatelier/Dextra Photo. CC-BY-SA*

design practice would prove to be challenge. But these kindred efforts at weaving worlds of woolcraft were not primarily business ventures, but experiments in ecological design trying to reconnect textiles and *terroir*, materials and landscapes.

CONCLUSION

Through these contemplations on peat, iron, and wool, I have sought to lay the groundwork for a new way of understanding how the act of designing regulates the extraction of materials, and how this, in turn, shapes the landscapes of the Anthropocene. Turning again to LeCain's *Mass Destruction*, we are reminded of how consumer society has created an abyss between our addiction to all the modern conveniences and the origins of the materials from which they are made: 'All these consumers, whether they recognized it or not, were deeply dependent on the industrial system of mining. Ironically, even as they were becoming ever more deeply dependent on natural resources, nature itself seemed increasingly remote and unimportant, other than in its guise as a pristine wilderness for occasional therapeutic visits.'⁵⁵ Rightfully arguing that this disconnect warrants a closer integration of environmental history and the history of technology, such an 'envirotech' approach can, I believe, be usefully expanded to include a stronger focus on the process of designing as a pivotal point in reconnecting consumer products with natural resources and landscapes. When Lego recently announced that the company was giving up on its efforts to design a brick made from recycled PET bottles to replace its current version made from petroleum-based ABS,⁵⁶ this is, of course, primarily a tale of failure and discouragement, as it entails that the popular toy's production will continue contributing to the decimation of volatile landscapes caused by oil extraction. But in this failure, we can also see encouragement, as the story makes it abundantly clear that nature is no longer remote or unimportant, and that the process of designing – past, present, and future – is key to understanding how the shaping of materials is shaping landscapes.

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⁴¹ Remarkably, the same company, LKAB, was, for the very same reason, simultaneously 'moving' another mining town, Malmberget, ca. 120 km further south – a process which has received far less attention outside the local community than has the Kiruna story. For a comparative study, see Storm, *Post-Industrial Landscape Scars*, pp. 21–45.

⁴² Timothy Morton, *Hyperobjects: Philosophy and Ecology after the End of the World* (Minneapolis: University of Minnesota Press, 2013).

⁴³ Carrasco, 'Kiruna Forever', p. 33.

⁴⁴ Tony Fry and Anne-Marie Willis, *Steel: A Design, Cultural and Ecological History* (London: Bloomsbury, 2015).

⁴⁵ Kjetil Fallan, 'Nordic Noir: Deadly Design from the Peacemongering Periphery', *Design and Culture* 7, no. 3 (2015), pp. 377–402.

⁴⁶ See e.g. Ingun Grimstad Klepp and Tone Skårdal Tobiasson, (eds.), *Local, Slow and Sustainable Fashion: Wool as a Fabric for Change* (Cham: Palgrave Macmillan, 2022).

⁴⁷ William Beinart and Lotte Hughes, *Environment and Empire* (Oxford: Oxford University Press, 2007), p. 95.

⁴⁸ Ewan McEoin, 'Sheep in Australia: Wool and Toil on Fragile Soil', in *Formafantasma: Oltre Terra*, pp. 113–32, esp. p. 113.

⁴⁹ Beinart and Hughes, *Environment and Empire*, p. 96.

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⁵² Malin Graesse, 'The Weaving World of Deep Ecology and Textile Design: Locating Principles of Sustainability at Austvatn Craft Central', MA thesis, University of Oslo, 2017, p. 62.

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⁵⁶ Jem Bartholomew, 'Lego abandons effort to make bricks from recycled plastic bottles', *The Guardian*, 25 September 2023, <https://amp.theguardian.com/lifeandstyle/2023/sep/24/lego-abandons-effort-to-make-bricks-from-recycled-plastic-bottles> [accessed in January 2026].

THE SPEED OF LANDSCAPE: MAKING SPACE FOR TIME WITH EXAMPLES OF CLIMATE ADAPTATION AND GREEN INFRASTRUCTURE

Johanna Deak Sjöman

ABSTRACT

The September 2024 keynote presentation aimed to encourage reflection on urban development policy and practice, with a particular focus on climate adaptation and the integration of green infrastructure and nature-based solutions. Examining past and present contexts, it forecasts the future of the urban biosphere, emphasizing climate adaptation, management, maintenance, and the potential to view 'nature' without technocratic intentions. The discussion explores the interplay between time and nature when planning and managing urban landscapes in the context of rapid global changes.

KEYWORDS

Urban ecology, nature-based thinking, landscape management, urban planning

INTRODUCTION

The concept of time remains one of the most enigmatic phenomena in human perception and understanding. Throughout history, humanity has made considerable efforts to understand this mysterious abstract, with scientific endeavours spanning millennia. The theory of general relativity, encompassing the concept of 'mega-scale space-time' in motion and gravitation, illustrates time as relative and coordinated with space, whilst the contrasting subatomic field of quantum mechanics supports the idea of time as independent of the system itself.¹ These two dominating and conflicting schools of thought consequently posit different ways of making sense of time: as either nonlinear (general relativity), or linear, with uncertainties of possible outcomes (quantum mechanics).² In conclusion, a definitive understanding of time's nature remains elusive and continues to defy clear explanation.³ Nevertheless, as time passes, circumstances change. This is a common ground. The 'arrows of time', as delineated by the physicist Stephen Hawking, help contextualize the fact that although the laws of physics neither confer or contradict that time, or rather events occurring in time, are irreversible, they are indeed changing irreversibly.⁴

Whilst we are able to accept the continuous change of certain phenomena, for instance the growth of a sapling into a large tree or the progress of novel ideas, some changes and their irreversibility cause deeper concerns. Climate change and biodiversity loss are two obvious phenomena where the accelerating speed of irreversible events is foreboding. We are all too familiar with diagrams showing skyrocketing curves of rising sea levels, increasing atmospheric carbon dioxide and other greenhouse gases, the detrimental loss of biodiversity and the extinction of amphibians, rainforests, and coral reefs, and so forth. We also see the incremental linear increase in urbanization and the global mean temperature change from pre-industrial levels escalating in a similar upwards direction. And the list goes on. Changes in land use in pursuit of urbanization and agricultural production are amplifying the downwards spiral of ecosystem degradation ignited by eighteenth-century industrialization. In 2008, a position statement from the Landscape Institute in the United Kingdom claimed that the role of landscape architects has never been clearer or more necessary in light of current climate change and urban development.⁵ Yet, how are urban planners and landscape architects approaching this era of unprecedented change caused by detrimental global forces? How should we decide on the future of space, place and the role of

ecosystems, when different temporal conditions and timeframes apply to humans and to the biosphere? How can we find support for our reasoning along this process, from the past to the present, and into the future?

The aim of the keynote presentation in September 2024, from which this article has been drawn, was to prompt reflection and provide an exploratory overview of a field that is far too complex to cover in full or provide definitive answers to. It is based on an attempt to better understand current urban development policy and praxis in relation to the correlations arising between climate adaptation and the role of green infrastructure and nature-based solutions. The article reflects on the past and the present with consideration of how to understand the future role of the urban biosphere without anthropocentric intentions. It aims to explore the concept of time and nature in relation to planning, design, and long-term management of urban landscapes, while the unpredictability of events and current temporal speed of global changes challenges our approach to space and place. The article is grounded in a Swedish context, with an acknowledgement of the varied applications of, for instance, the concept of green infrastructure in different countries and across different continents. However, its discursive reflections on ‘urban nature’ in its broader sense may resonate with landscape professionals beyond the Scandinavian realm.

PAST LANDSCAPES AND FORGOTTEN LEGACIES

The geographer Marc Antrop delineates a fine narrative of the episodes that changed local European landscapes in his 2005 paper ‘Why landscapes of the past are important for the future’.⁶ The shift from a slower-paced landscape of small-scale structures and practices to one of rapid change and large-scale impacts resulting from industrial, technological, and agricultural progress in the late eighteenth century and again after the Second World War facilitated a clear break with traditional values and perceptions. This was particularly evident in urban–rural relationships and identity.⁷ Still, landscapes carry memories, sometimes referred to as ‘ecological memory’⁸ or ‘social-ecological memory’,⁹ and constitute an integral facet of the theory of complex adaptive systems.¹⁰ This is made tangible and accessible via habits, rules-in-use, oral traditions, physical artefacts, and governance networks,¹¹ interconnected with the natural processes that influence ecosystem dynamics, and builds resilience and adaptation to both internal and external disturbances within communities and sites, and between areas.¹² The role of social-ecological

memory enables systems, from individual entities to communal complexes, to self-organize and handle unpredictable dynamics and to respond to the nonlinearity of feedback loops.¹³ Past memories may also be conveyed through physical structures and artefacts, which reveal how settlements adapted to prevailing conditions and calamities in the past. Archaeological research on garden urbanism in the Upper Amazon 2,500 years ago¹⁴ and on earlier ancient settlements in Mesopotamia and Mesoamerica¹⁵ not only reveal long forgotten cityscapes lost in time, but may also, according to researchers, provide necessary historical depth and explanatory frameworks towards resilience and robustness for contemporary urban planning confronted with urbanization, climate change, and altered environmental conditions.¹⁶ Depending on geographical location and climate variations, the archaeology of ancient urbanism has revealed quite different urban forms and structures throughout the world in response to local and regional conditions. For example, the settlement patterns of ancient cities in Greater Angkor in Cambodia and in the Classic Maya region of Mesoamerica indicate that a low-density urban form may be better suited to these regions in terms of providing food and water security in the face of fluctuating weather extremes and seasonal variances.¹⁷ Combining archaeological data with information from other fields (for instance, urban planning, landscape architecture, ecology, palaeobotany, and geography) would also allow for more extensive comparison of different datasets.¹⁸ With advanced contemporary technology, this, in turn, could either fill knowledge gaps or at least indicate future research directions, and could, moreover, support further generic exploration of social-ecological memory and the trends in urban resilience across space and time.¹⁹

PAST MEMORIES IN LIGHT OF CLIMATE PLANNING

Incorporating social-ecological memory into current strategies for adapting to and mitigating the effects of climate change and urbanization may provide us with a much-needed compass with which to navigate these issues. However, our capacity for collective memory (that is, learning and remembering) is complicated, and even in the event of severe disasters such as storms and flooding, humanity seems to fail to recognize the attributes and essentials necessary to building future resilience. Complex challenges arise, such as understanding *which* attributes and essentials should be added to the memory bank.^{20, 21} Is it to build a stronger defence, as in heavily engineered solutions including, for instance, levees and pump stations? Or is it to protect and develop indigenous wetlands to provide natural buffers? Or is it to exile settlements to new areas, thereby causing a new set of complicated social and

ecological conditions to emerge?²² A conclusion provided by Kondolf and Podolak is that the scale of human response is, in the end, generally small by comparison with the forces of nonhuman nature.²³ Additionally, the influence of collective memories fades with time. Research from a flood-prone region in Central Europe exemplifies how the collective memory lasted for only two generations, with communities settling back on floodplains prone to inundation after fifty to sixty years.²⁴ The study also argues that repeated experiences are necessary for the formation of a collective memory and suggests that information passed down through the generations by word of mouth becomes weaker over time. Since distant memories create weaker emotions, it is events that are experienced firsthand, in other words, living memories, which are subsequently linked to stronger memories (fig. 1). As urban planner Kevin Lynch has defined: ‘Past and future are imaginative creations that use selected events. We can learn how to extend them.’²⁵



Figure 1: Social-ecological memory delineated as individual ‘hourglasses’ or ‘light cones’ representing the past (bottom), the present (the neck), and the future (top). It is through the present landscape that experience and memory can intersect, developing common ground that increases the potential for future resilience. Illustration adapted from David A. Rubin (2020). Diagram: the author

However, past memories do not necessarily have to entail dramatic events of disasters and calamities. Rather, ordinary but intelligent interventions developed over time can pave the way for solutions to concerns in contemporary landscape planning, design, and management. In view of climate change adaptation, we can find illustrative examples and inspiration in ancient urban planning and architectural design in response to climate and weather. The grid plan invented by Hippodamus in Ancient Greece and applied to the city of Miletus around 450 BCE was drawn, in part, to stimulate a climate-responsive approach to urban planning. The streets and buildings were arranged at right angles to allow natural ventilation and cooling during the summer, with the free flow of Mediterranean winds. In winter, the northern mountain range acted as a protective barrier, blocking out northern winds.²⁶ Concerned about improving the health and wellbeing of Barcelona's urban residents, Ildefons Cerdà applied the same concept in 1860, incorporating grid-placed blocks, chamfered buildings, and courtyard gardens.²⁷ In contrast, traditional northern Scandinavian coastal settlements employed a meandering street landscape, with buildings intertwined throughout, to disperse and reduce the speed of cold winds. The above examples illustrate how generic principles of climate-responsive planning are contextualized into local preconditions depending on location, topography, and climate. Although wind, in its essence, is invisible, dynamic, and unpredictable, we can recognize how its speed and movement through space can be mitigated or amplified via living examples of past urban planning principles. The unseen becomes tangible and place specific, and, in its simplicity, the movement of air and the design of space have strong influences on urban experience, health, and wellbeing. This becomes particularly evident with climate change and increasing temperatures.

THE VERNACULAR OF CLIMATE-RESPONSIVE DESIGN

Heat waves in urban areas are the invisible menace of climate change. Their death toll outnumbers the casualties from storms, flooding, and earthquakes.²⁸ Nevertheless, urban planners struggle to address the issue of heat in terms of climate-responsive design, particularly at the scale of the local neighbourhood. The topic, as well as the field of climatology in general, is often considered too elitist and complicated,^{29, 30} and the fact that heat is essentially invisible does not help matters.³¹ Before the technological advancements in building construction of the twentieth century, the engineering techniques found in vernacular architecture and design demonstrate a number of features that make climate-responsive design possible without

the advanced engineering of today. In *Design with Microclimate*, landscape architect Robert Brown provides several interesting examples of responsive interplay between buildings and landscaping, making a notable reference to ancient temples in Kyoto, Japan. In summer, the protruding roofs help to cool the indoor climate, facilitating a beneficial energy exchange when the sun is at its zenith. In winter, when the sun's rays reach a lower angle, the white gravel in the garden helps to re-radiate them into the building, providing an additional natural source of sunlight. The example is intriguing in its simplicity, demonstrating how the interplay of space (i.e. spatial arrangement), time (i.e. seasons), and material (i.e. albedo) can provide tangible guidance for architectural design and climate comfort without complicated modelling or technological artefacts such as air conditioning.³² Similar principles were applied in 1961 by the architect Ralph Erskine in the neighbourhood of 'Orts-drivaren' in Kiruna, Sweden. There, spatial arrangements took into consideration an aerodynamic profile of buildings and terrain so as to disperse harsh wind and mitigate localized wind turbulence. Slanting, dark-coloured roofs were also used to capture the heat from the sun at low angles. The spatial considerations of wind and sunlight, the aerodynamic profiles of buildings, and the thermal properties of different materials were integrated to provide a northern example of climate-responsive design. A current example of how Erskine's blueprint has been introduced in a recently constructed neighbourhood can be observed in the southern harbour of Luleå (Sweden), capturing a memory of architectural eloquence (fig. 2).

In temperate parts of the world, climate-responsive design that considers urban heat in summer also needs to take the many months and weeks of winter into account. The essence of space and place in relation to the energy balance of materials in flux will be altered by time and season and consequently influences our perceptions and physiological comfort. What may be an ideal solution for mitigating heat in summer can produce problems in winter. For example, a tree that provides ample shade and cooling comfort in summer may in winter cause heavy cool spots if the tree species of choice has a compact branch structure, and prevent passive energy heat gain if it is planted too close to a south-facing facade.³³ In some situations, solutions implemented in one place will influence the microclimate in adjacent areas, meaning that climate-responsive design at the neighbourhood level is highly dynamic and sensitive to several attributes in play. This is particularly evident in the way we can alter the speed of the wind throughout neighbourhoods. The spatial translation of current large-scale mapping of urban heat islands

into specific thermal comfort contexts at a very local level is a sensitive process, and the rules that apply to the large do not necessarily apply to the small.

GREEN INFRASTRUCTURE AND NATURE-BASED CONNECTION

As a concept in modern urban planning, green infrastructure is defined as a system of vegetation, water, impermeable surfaces, and soil that connects the functioning ecosystems of urban and rural landscapes. Its use in the landscape profession dates back centuries, but its use as a planning term dates



Figure 2: Between 1959 and 1965, architect Ralph Erskine designed the Ort drivaren neighbourhood in Kiruna, Sweden, featuring notable buildings like ‘Mullbänken’, ‘Snusdosan’, and ‘Spottkoppen’ (top row of photographs). The architecture exemplifies climate-responsive design suited for northern urban landscapes, a principle also seen in Luleå’s Southern Harbour, where buildings are designed to mitigate local winds (depicted below). Photos: the author

back only a few decades, with different intentions being implemented in various parts of the world.³⁴ The inclusion of water and vegetation in cities is now widely considered a necessary step in, for instance, climate adaptation. For example, during a summer heat wave, the perceived temperature in a small woodland area may be 20 degrees less compared to a parking lot located nearby,³⁵ and during periods of rainfall, the combination of different green infrastructure measures (green roofs, swales, bioretention ponds, et cetera) can help to reduce peak flow and subsequent flooding.³⁶ However, green infrastructure – sometimes referred to as ‘blue-green’ infrastructure – is not only an ‘eco-technological’ approach to climate adaptation; it also provides citizens with numerous benefits, including recreational value, improved health and wellbeing, local food production, and habitats for urban fauna.

In contrast to the more static structures of buildings and hard landscaping, soil, vegetation, and water support the city with dynamic attributes that increase its flexibility, adaptability, and resilience over time. Examples of this appreciation date back to Ancient Egypt and the Aztecs, when conserving urban soil was crucial for urban agriculture and the livelihoods of thousands.³⁷ Over time, green infrastructure has also become a deliberate solution for preventing flooding and erosion (with notable examples from the early 1600s in the Netherlands), as well as a means of purifying water and air.³⁸ As coined by landscape architect Frederick Law Olmsted in the nineteenth-century, trees are ‘the lungs of the city,’ and the first public parks were established in several industrial countries from the 1850s onwards in order to provide everyone, regardless of social class, with access to urban nature.

While diagrams and curves illustrate the incremental increase in urbanization, temperature, sea level rise, and biodiversity loss, current approaches to green infrastructure have been transferred to a nature-based solution that will support the adaptation to and mitigation of these challenges.³⁹ This perspective has also been criticized for merely reinforcing the instrumental and anthropocentric approach to nature, treating it as something that exists for the purpose of human utilization.⁴⁰ Having violated natural ecosystems for centuries, from which our current global threats originate, we are now turning to nature for help. Contemporary policy on nature-based solutions undoubtedly calls for scrutiny of how we view the biosphere and how we should relate to it in the future. What is our social-ecological memory of nature in cities? What is our epistemological fundament in this regard so we can build long lasting urban ecosystems? These questions relate not only to

our previous ideas of *what* ‘nonhuman nature’ is for and *why* it should be part of cities and urban landscapes, but also to the conception of *how* we recognize ourselves in the urban-ecological symbiosis over time – from global to local scales. It covers anything from the daily maintenance of urban green spaces to the existential beliefs of our individual lifestyles and how they influence climate change, urbanization, and biodiversity loss. In *Dark Ecology*, philosopher Timothy Morton provides a compelling illustration of the conundrum we currently face: the difficulty of relating to time in a manner that extends beyond one hundred or one thousand years, while being acutely aware that our present actions will significantly influence the outcome of events that will unfold over the course of centuries.⁴¹ Morton argues that the concept of nature itself is an inadequate foundation for any ecological approach because it limits the Earth’s biosphere to a human-centric domain and reinforces the idea of a dichotomy between human and nonhuman nature, creating further delineated boundaries and defined spaces. These queries help scrutinize the timeframe currently used as a basis for projection in green infrastructure planning and challenge what we associate with the idea of nature-based solutions.

NATURE-BASED THINKING

Cities in Sweden cover 1.6 per cent of the country’s total landmass and what are considered urban areas account for 3 per cent.⁴² In urban areas, green infrastructure usually makes up 40–50 per cent of the total land cover. Of this, half is privately owned, a third is publicly managed, and the rest is owned by private companies and enterprises.⁴³ Subsequently, many different landowners, stakeholders, and actors with an interest in different land use will decide the future of urban nature. Time and the speed of events and processes will be different for different stakeholders – from organizations and decision-makers (with mandatory periods as short as four years) to generations of urban citizens (the mean average life expectancy in Sweden is roughly eighty years), and to the biosphere and systems of nonhuman nature (which may span from decades to centuries). The three nexuses of organizations, citizens, and the urban biosphere operate at different timescales (fig. 3), thus adding yet another dimension to the existing complexities of localized climate adaptation, infill development, and the means to support and develop urban biodiversity.

The conceptual framework of nature-based thinking provides a foundation for developing the idea of nature-based solutions into a joint discourse of

symbiosis between diverse stakeholder groups and the urban biosphere.^{44, 45} It calls for an understanding of the space and place of nature and of the time of nature, and how securing these fundamental attributes needs to be anchored in policy, planning, and design and supported via long-term management and engagement with local stakeholders. Consequently, ample space is required, below- as well aboveground, in order for nature to develop. Time itself is required within the planning process so as to obtain an initial understanding of place-specific essentials, to design and implement accordingly, and to establish and develop urban nature through resourceful maintenance. The nature-based thinking framework is rather the opposite to a quick fix for nature. How contemporary tendencies of technocratic approaches and

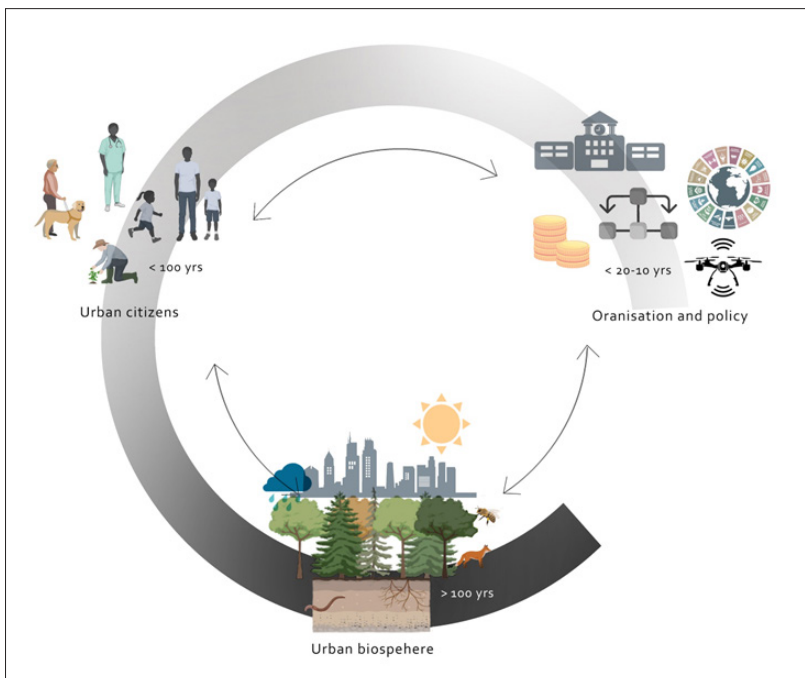


Figure 3: Different timescales are exhibited by the three nexuses of organizations, citizens, and the urban biosphere, adding challenge and complexity for long term engagement in the management of nature in cities. Illustration adapted from the Park-Organization-User model by Randrup & Persson (2009). Diagram: the author

instrumental policy (for instance, the 3-30-300 rule, the Green Plot Ratio, and the quantitative rationale in the EU Nature Restoration Regulation) can be aligned with the nature-based thinking framework and become sensitive pathways to urban nature may seem ambiguous. The role of numbers in environmental policy is a two-edged sword; it speaks the language of modern decision-making but it decontextualizes time and place into generic ideas of nature.^{46, 47} The undisputed policy becomes a normative tool and voice for what we assume is urban nature. In the everyday context it provides a quick solution for landscape architects, who are far too often governed by time-pressured schedules.

MAINTENANCE AND THE SYMBIOTIC VISUAL

In the field of landscape architecture, the timeframe of planning and design may range from a year to decades, depending on the scope and magnitude; what follows in terms of place-keeping and maintenance may continue for an indefinite time. The management of urban green space includes the replanning and redesign of existing green areas, alongside operative maintenance and upkeep activities. In 2014, around 1.8 billion euros were spent each year on managing urban green spaces in Swedish municipalities and public organizations,⁴⁸ 80 per cent of which was allocated to maintenance activities. This left only 20 per cent for the strategic planning of existing green areas,⁴⁹ which compromised the means to extend resources into climate adaptation, biodiversity support, and so forth. While investments in planning and designing new projects and areas remains possible, this does not denote an equal increase in forthcoming maintenance budgets. Alongside the creation of new green spaces, fewer resources are being allocated to maintaining and ensuring the long-term viability of existing green infrastructure.⁵⁰ The prospect of future urban green spaces is consequently challenging with respect to limited maintenance resources, increased wear and tear resulting from a growing urban population, and the expectation of multifunctionality, with support for climate adaptation and biodiversity at the forefront. At the same time, urban green spaces are becoming more fragmented and smaller in size. While small-scale, highly engineered solutions such as green walls and rain gardens may signal the presence of nature, we still know very little about the initial carbon footprints and long-term maintenance costs of these constructions. The ambition to create large public parks in city centres, as was planned a century ago, is no longer a reality, and vast expanses of lawn are being questioned regarding their feasibility in relation to climate mitigation and increasing periods of draught. The current situation and future possibilities

call for new ideas and perceptions, challenging past attitudes and expectations about how urban green spaces should be experienced and understood. It may even signify the start of a paradigm shift in how maintenance will be described and carried out.⁵¹

The majority of public green spaces is comprised of lawns, which make up as much as 40 to 60 per cent of the total green infrastructure and account for 23 per cent of urban land cover.⁵² This suggests that a significant proportion of maintenance budgets is spent on lawn mowing.⁵³ However, the past decade has witnessed several Swedish municipalities transitioning from traditional mowing to limited or no mowing of public lawns, thus altering the visual qualities as well as the potential uses of such spaces. Signs are often installed to inform the public of the reasons behind this 'lack of maintenance', with the aim of increasing acceptance and awareness of the city's efforts to boost biodiversity through no-mow strategies. This shows how managers recognize the visual impact of changing ingrained expectations of what a park 'should look like', as defined by traditional twentieth-century park landscapes. Although the visual perception of place may be the first impression in our understanding of the timing of events and the spaces that follow, the aesthetics of ecological awareness involve multiple senses, including sound, scent, touch, and the sort of friction felt underfoot. Nonetheless, the visual tells several stories of the multitude of a place even if the majority is hidden from sight.⁵⁴ To the untrained eye, nature is uneasy and fleeting in its logic. The landscape architect Joan Nassauer expresses this eloquently in a 1992 article: 'The way things look is not always the way things are. This fact should be cause for consternation among those who are interested in the management of ecological systems. A highly functional landscape structure may go unnoticed – even by people who depend upon its function.'⁵⁵

The visual becomes the shop window to ecological awareness of the ecosystem functioning of urban green spaces, and in the windowpane reflection we may view ourselves as either insiders or outsiders. Do we see ourselves as being essential to the way in which ecosystems function in urban landscapes, or is nature's ability to function dependent on our absence? The latter leaves an imprint on our expectations and distorts the previous hierarchy of what takes precedence in the room. This resonates with Morton's description of how the very construct of the concept of *nature* alienates us⁵⁶: do we see ourselves as locked in a Cartesian cogwheel, governing the biophysical world, or do we see ourselves as a destructive force, believing that 'nature' would be better off

if we, as human species, left it alone? Caught in the middle is the symbiotic potential that can be traced via traditional interplays witnessed by landscapes of the past – as can be found in many rural areas. The remnants of care and consideration for flora, topography, climate, and resources, from small-scale farming and forestry to the handcrafted construction of drystone walls and mixed-species hedgerows, tell of nurturing acts by human hands that were once regarded as an investment in a livelihood *with* nature (fig. 4).

FROM SERVICES TO FUNCTIONS IN NATURE-BASED MANAGEMENT

One approach to delineating the interplay of human hands and the urban biosphere is the cascade model of ecosystem services developed by Haines-Young and Potschin.⁵⁷ It provides a flexible framework for tracing the interdependencies between biophysical structures, ecosystem functions, and the ‘pressure’ of feedback, for example, from natural events or deliberate



Figure 4: Two perspectives on Engelska Parken in Uppsala, showcasing a tall, uncut lawn, which may support biodiversity but discourages use, versus a traditionally mown lawn, which invites activities (top). Maintenance decisions subsequently shape our understanding of urban ecosystems, challenging perceptions of inclusion and leading to questions regarding future aesthetics, cultural memory, and societal responses to the dominance of nature (bottom). Photos: the author

management, that will influence the ecosystem's future. It further delineates a system in circular motion and is often depicted in two domains, one environmental and one societal (fig. 5). The environmental domain consists of biophysical structures and processes, for instance, of species diversity and succession, as well as ecosystem functions such as oxygen production and soil formation. The conditions and qualities of these structures and functions influence the expected outcome in the social and economic domain. This includes the ecosystem services that society benefits from and translates into monetary means. To what extent society can continue to rely on ecosystem services and subsequent benefits is determined by the pressures, for example, of climate change and weather extremes, urbanization processes of densification, and how strategic management is planned in terms of maintenance and collaboration between various stakeholders. Since the wider policy launch of the ecosystem services concept in the early 2000s, the benefits that society can draw from nature in urban landscapes have been at the forefront of green

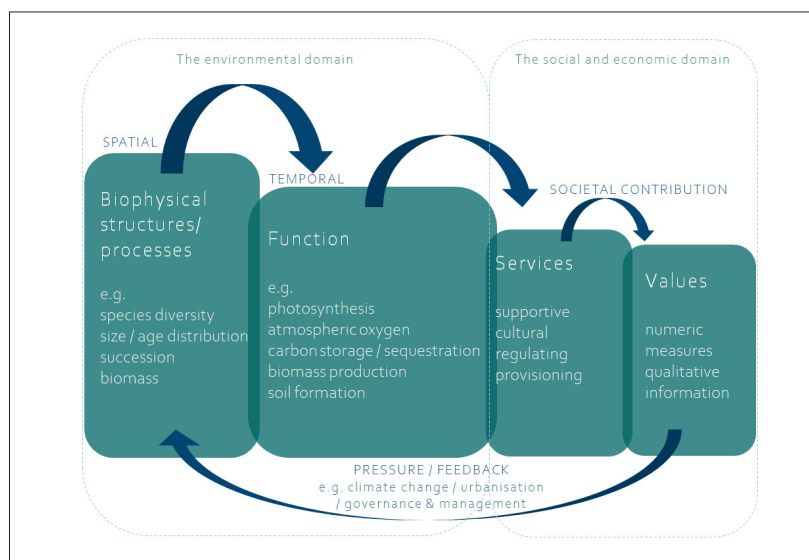


Figure 5: The cascade model of ecosystem services developed by Haines-Young and Potschin in 2010 helps delineate the interdependencies within an ecosystem from the perspective of ecosystem services. This model renders the necessary and foundational attributes of biophysical structures and processes as well as ecosystem functioning within the environmental domain. Diagram: the author

space management. Explaining the direct benefits and values to society, for instance, in terms of storm water management and the associated cost benefits, helps green space managers reach the necessary decision-makers, relevant sectors, and stakeholders more easily.⁵⁸ To be fair, however, most contemporary management approaches are guided by societal expectations of nature, and the operational activities involved are often addressed via procurement traditions from the New Public Management era, in which urban nature is dissected into individual elements (for instance, trees, shrubs, and lawns) for the purpose of budgeting, rather than being regarded as an interconnected system.⁵⁹

So, what would happen if the tables were turned and the management of urban green spaces and green infrastructure were to project from the environmental domain and be based on expected ecosystem functions, rather than on societal and economic factors? How would this affect the daily maintenance of various operational activities? How would it affect the planning and design of biophysical structures and processes? As discussed in the previous sections, this would require a complete change in attitudes towards time and space, as well as a new approach to aesthetic appreciation. For example, carbon storage and sequestration occur in biomass and in soil, and over time soils become replenished in terms of their structure, texture, nutrient availability, water retention, and an increased diversity of microorganisms. In this regard, the pressure loop in the cascade model would incorporate operational activities of no-dig methods and the retention of leaf litter, which then gradually decays into the soil. However, restoration of the urban carbon pool takes time, and research shows that retaining leaves for natural decomposition and carbon storage will require a timeframe that is longer than a couple of growing seasons.⁶⁰ The long-term potential for processes such as carbon storage to occur is also determined by the amount of space available, that is, whether there are sufficiently large parcels for a functioning ecosystem to arise.⁶¹ Projecting based on ecosystem functioning rather than ecosystem services will, in the case of urban soils, shift our relationship from something that has been generally abused, neglected, and hidden from view to something purposely nurtured for future life in urban biospheres. It will pose questions regarding what kind of spaces are in the making that will allow for sufficient ecosystem functioning in a long-lasting perspective? What sort of space and design methods will allow for entropy and resilience? And how can flows of energy and matter, and continuous succession be supported in order to sustain urban nature as an open system?

THE CHALLENGE OF SPATIAL DENSIFICATION

A symbiotic approach to nature-based management of urban ecosystems relies on complex interactions between abiotic and biotic agents (including humans). Supporting biodiversity in the biophysical structures of the urban landscape and allowing ecosystem functions to operate fully aligns with creating the necessary heterogeneity and functional redundancy required in any complex system.^{62, 63} How the urban structure affects the resilience of urban ecosystems is not completely understood, but events of weather extremes show that urban landscapes are often unprepared and struggle to identify appropriate measures in direct response to, for example, urban heat waves or flash flooding. According to a survey and interviews with urban green space managers in the Nordic countries, spatial densification is seen as the major challenge in addressing climate change and supporting biodiversity, followed by lack of funding for long-term maintenance.⁶⁴ While studies are ongoing in terms of linking biodiversity in spatially dense urban districts (here, considering the number of bird species),⁶⁵ a critical review suggests that ‘no sufficient scientific foundations ... about compaction and environmental gains can be substantiated from contemporary international research.’⁶⁶ Paradoxically, the initial good intentions behind densifying existing urban structures, such as protecting biodiversity, improving air quality, and preserving open spaces on the urban periphery,⁶⁷ often have the opposite effect within the city itself. In terms of climate-responsive design and climate adaptation, spatial densification backfires, recreating the spatial arrangements that were previously abandoned due to damp, dark, and stagnant air conditions (fig. 6). Without access to sunlight, airflow, and permeable surfaces, vegetation and other organisms cannot thrive in such environments, and the potential green infrastructure network becomes shattered into fragments, disrupting the system flow of ecosystem processes.

The spatial discourse in relation to an ever-increasing urban population appears to be gridlocked between two options: either densifying existing built structures to reduce urban sprawl or allowing low-density expansion onto pristine topsoil, with a detrimental impact on agricultural land, forests, and other rural ecosystems. A third loophole is called for, and perhaps the issue is one of scale and social-ecological memory so as to avoid too strong path dependencies in the wrong direction.⁶⁸ Perhaps, as Nassauer narrates, it is from the air that the functioning of ecosystems and the spatiotemporal relationships of, in this case, future urbanization become more logical; the patterns can be too abstract at site level.⁶⁹ A similar image is drawn by

ecologist Simon Levin, explaining that what is predictable at larger-scale levels may be very unpredictable at the local level.⁷⁰

THE PROSPECTS OF CHAOS AND FUTURE MEMORY

Making space for time amounts to a symbiotic approach to nature in cities. In doing so, the recognizing a certain amount of disorder, unpredictability, and randomness in relation to space becomes important, as well as what this means with respect to green infrastructure planning and management. The different theories of entropy, from its origins in thermodynamics and how it is embedded in ecological systems to applications in land art, landscape architecture, and building engineering, express how the process of ever-changing matter can be explained in physical laws and ecological succession as well as in form and design in landscape contexts.⁷¹ Entropy is, in a way, also a measure of how many ways it is possible to rearrange constituents and elements within



Figure 6: By the 1920s, European cities transformed from dark areas to spacious environments, with architects and urban planners promoting 'light, air, and space' by means of wide streets and parks in order to enhance health and recreation. Modern urban densification, however, has resulted in a return of cramped, dark spaces that limit solar access and ventilation, echoing earlier conditions. (Left: Rue St. Nicolas du Chardonnet, ca. 1853–70 © Charles Marville, from 'Haussmann the Demolisher and the Creation of Modern Paris'. Right: A small street in the urban district of Hyllie, Malmö, at midday January). Photo: the author

a system or a structure. A structure with high entropy allows for more ways of rearranging compared to a structure with low entropy. Disorder, as such, is neither good nor bad in itself; it is a fundamental principle of how the real world and the different subsystems of the biosphere function. Allowing for high entropy in the open spaces of the urban landscape and throughout the system of green infrastructure broadens the potential for different approaches to rearrangement and, consequently, for resilience to build. After space comes an understanding of matter or constituents (as in buildings and hard landscaping materials, and vegetation as in species and successional change) and will define the internal plasticity to respond to unavoidable change. The next level of clarity is the underlying support for soil, nutrients, and water cycles and the ever-expanding space above, with its flow of solar energy and climatological impacts. To recognize all these multi-scalar constituents and processes, as elaborated by human geographer Torsten Hägerstrand in the 'The Two Vistas' and 'The Skyscraper of Science',⁷² is very much similar to how Hawking set out to merge the theory of general relativity and quantum mechanics into a 'Theory of Everything'.⁷³ Indeed, in a lecture to the American Philosophical Society in 2019, landscape architect David Rubin expressed how Stephen Hawking was really a landscape architect in disguise. According to Rubin, Hawking's ideas and explanations of an ever-expanding universe, the speed of light, and the predictable unpredictability of quantum mechanics, share strong similarities to landscape architecture regarding how different 'intersections unify the unique events into a common experience'.⁷⁴ This holds true for the social encounters in everyday life between individuals and communities, and for the ecological processes often occurring unnoticed.

The intention of this article has not been to cover the extensive field of time and space as widely explored and vividly discussed in relation to social, political, and economic construct by, for example, Deleuze, Latour, Foucault, Manning, Thrift, and others. It humbly acknowledges its limitations and bows to the complex ideas that have evolved from Einstein's fundamental concepts of space-time and Heisenberg's recognition of entropy and unpredictability, and how they have influenced the fields of ecology, landscape studies, and architecture. When situating the complexity of climate adaptation and the inclusion of green infrastructure in urban space, excluding movement, speed, velocity, energy, pace, and timing from the sensemaking of time becomes unavoidable.⁷⁵ This clearly resonates with Hägerstrand's statement: 'In fact, everything is attributed to motion, if not by other means,

then along the time axis.⁷⁶ As the forces of detrimental global change, with respect to both climate and biodiversity, continue to accelerate, the need for urban planners and landscape professionals to respond with haste is of equal concern. However, when solutions via nature are sought, we should ask if sufficient time has been taken to fully comprehend the requirements for cities to develop as viable and flexible ecosystems – in their planning, design, and continuous unfolding. In their scope of magnitude, climate change and biodiversity loss pose a complexity far too great for any single profession alone to manage. Time is needed to establish partnerships and facilitate knowledge exchange between different public sectors and private stakeholders, and landscape professionals need to ‘take their time’ so as not to make decisions too hastily.

Perhaps Aesop’s fable of the hare and the tortoise might serve as a comparable image, in which the tortoise’s pace provides the landscape architect with the diligence and foresight to understand the requirements needed for nature to outrun the challenges afflicting the urban landscape. This includes a serious commitment to ecological understanding and past cultural practices, as well as moving beyond an instrumental, technocratic and deterministic interpretation of nature-based solutions. It also covers how to apply forgotten skills and knowledge in order to adapt and build resilience against extreme weather events and changes in climate, as has been the case for millennia. It is about how past social-ecological memories may help us remember the future.

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⁷¹ The second law of thermodynamics explains how entropy increases with time and e.g. that natural systems always move from order to disorder. In landscape ecology, this concept is used to better understand the spatial-temporal events occurring in landscapes and has helped develop frameworks e.g. of landscape heterogeneity, fragmentation, and how to link landscape pattern and process. Early examples of how to express and amplify a recognition of entropy in landscapes via design is most notably referred to by land artists Robert Smithson and Nancy Holt, and e.g. Matta-Clark in the field of architecture. Throughout the 1960s, entropy was elaborated in the discipline of landscape architecture via the theory of quantum mechanics and cybernetics and expressed particularly in the work by Ian McHarg and Lawrence Halprin. Today, architectural schools are experimenting with entropy to recognize buildings as processes rather than products. This may include flexible frameworks with mobile structures, such as movable floors, ceilings, walls, and roofs, that can be changed and transferred to new positions and functions. This trajectory has also expanded to include entire buildings that can be transported from one site to another. The concept of entropy is a testament to the fact that time, speed of movement, and the transition from one state to another must be recognized in future urban landscapes and what this means to the planning, design and management of green infrastructure.

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ELECTROSCAPES: SOCIO-SPATIAL PERSPECTIVES ON ENERGY TRANSITION

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ABSTRACT

The 'green transition' from fossil to renewable energy is creating new energy landscapes. This article focusses on transformations of landscapes subject to energy extraction related to renewable energy. We suggest the term *electro-scape* to describe this new kind of landscape, which seems to embody the efficient and smooth contemporary life in the era of energy transition, while also becoming sites of contestation.

Across the Nordic countries, energy-related landscape transformations are causing local conflicts over natural resources, land and Indigenous rights, and new geopolitical frontiers of security politics. Strategic and social logics are often set up as irreconcilable interests between arguments of climate change necessities (global politics of needs), on the one hand, and social and ethical arguments of environmental degradation and local land use rights (local politics of values) on the other. On the ground, we find that landscapes are undergoing large scale transformation in line with the politics of needs, while the social, phenomenological, and aesthetic aspects of landscapes are also changing.

This article explores the friction between needs and values in contemporary landscape transformations from the cross-disciplinary perspectives of architecture and anthropology based on two cases: the Norwegian Government's plans to electrify the Melkøya Liquefied Natural Gas plant and expand renewable energy production in Finnmark, and the proposed giga-windmills on the marshlands of Southern Denmark.

KEYWORDS

Electroscape, energy transition, Melkøya, Danish marshlands

Energy landscapes—or electrosapes—are landscapes that are shaped directly by human efforts to extract energy resources. This is not a new phenomenon. The sources of energy and their associated landscape characteristics differ historically along with technological innovations. Picture, for instance, the deforested landscapes of the firewood era, the flattened, crushed, and hollowed-out landscapes of coalmining, or the punctuated landscapes of hydraulic fracking in the fossil fuel era.

At present, the ‘green transition’ from fossil fuels to renewable sources of energy is creating new energy landscapes at a rapid pace across the globe. While the promise of a ‘green’ future is alluring, the energy landscape transformations are also causing local conflicts, for example, over natural resources, land use, and Indigenous rights, as well as forming new geopolitical frontiers of security politics, also in the Nordic countries.¹

In this article, we present early-stage research in which we are testing our proposition. We focus on transformations of landscapes that are subject to energy extraction related to renewable energy, and aim to explore the contestations they bring along with them. We suggest the term *electroscape* for this new kind of contested landscape. Electrosapes are providers of natural resources that seem to embody the efficient and smooth contemporary life in the era of renewable energy transition. Windmills, solar parks, hydropower plants, and biomass production along with battery and bitcoin factories, high-voltage lines, and other physical amenities are all spatial imprints that render landscapes resourceful and productive for a high-tech, low carbon emission society. At the same time, these imprints have a great impact on the local area and give rise to new ecologies, habitats, and aesthetics as well as new ways of living.

By suggesting the term electroscape, we aim to create an analytical lens for understanding the contestations related to energy transition from a socio-spatial perspective. There is a growing body of research in many academic and scientific fields on the opportunities and challenges related to the energy transition. In landscape architecture, there is emerging attention to how to design for renewable energy and, in anthropology, studies concerning climate changes, nature-culture entanglements, and non-human-human relations are concerned with landscapes as a part of the field; and in public and civil society discourse there are ongoing debates and often resistance to new energy projects. Yet, we see a need to better understand these questions

as intertwined social and spatial phenomena and concerns. As a part of our work in progress, our aim is for anthropological and architectural research to contribute to this discussion.

There is an inherent tension in the purpose and effects of electroscape transformations. Strategic and social logics are often set up as irreconcilable interests in the current construction of renewable energy projects. What is understood as unavoidable for the purpose of a greater good in the global sphere of what might be called *politics of need* (the strategic logic) is perceived as a degradation in the local sphere of what could be referred to as *politics of value* (the social logic). We must specify that the notion of ‘need’ is debatable. Arguably, ‘requirement’ and ‘demand’ are more precise, since the extraction of energy is required to accommodate increasing energy demands tied to societal growth rather than societal need. Still, we use the notion of a ‘politics of need’ so as to point to the fact that, at a strategic level, the supply is constructed as a ‘need’. ‘Value’ can also be considered a vague notion, especially since the values of people are never the same, thus posing the question of ‘whose values?’ When using the notion, we are aware that values are permanently being deconstructed and reconstructed. We nevertheless use the notion of a ‘politics of value’, since, in our cases, local people—who differ in many other ways—jointly gather and express shared ‘values’ concerning everyday life in the landscapes concerned.

In contested landscapes, where global needs (or requirements or demands) and local values clash, the two spheres and politics focussing on the same landscape do not share a common ground concerning what is significant and valid. Landscapes may overlap spatially, but the clash between values and needs constructs different contexts for the way we view them as useful and meaningful. This gives rise to an unsolvable dilemma: it is hard to argue against the global need for green energy, even if the degradation of the environmental, biological, social, spiritual, and/or aesthetic integrity of the landscape on a local level is acute.

We would like to take this dilemma seriously by exploring it from the perspective of two cases of Nordic electroscape transformations in Norway/Sápmi and Denmark. The purpose is to unfold the socio-spatial dimensions of the transformation by approaching the implications for the landscapes and for the living conditions of the inhabitants. In this process, the dilemmas arising from the transformation will be considered.

Since spheres and levels, landscapes and humans are intertwined, the implicit dichotomies in this article (city-countryside, centre-periphery, *natureculture*, generic-specific et cetera) might stand in the way of a more analogous understanding of the cases. However, since these dichotomies are part of the empirical world of the cases, with respect to both the discourses and the actual compartmentalization of the field, they are unavoidable. So, while binary notions cannot articulate the multiple relations and conditions of the field, it is difficult to find other ways of thinking of it, specifically because of the differences in scale and perspectives, which create out-of-context problems.

Globally, as renewable energy projects proliferate at scale, there are many similar cases to be found, some of them with even more severe consequences for landscapes on a local level. While acknowledging this, we will not go further into other cases, as our fieldworks and studies in progress concern two specific Nordic landscapes. We wish to bring together our two cases to shed light specifically on the dilemmas in a Nordic context. In some ways the cases share a similar background, for instance, these landscapes have been inhabited for centuries, and both landscapes are part of a Nordic welfare state with particular laws and customs concerning landscapes. In other ways, the cases differ, for example, the traditional nomadic Sámi practice reindeer herding crosses the boundaries of four nation states, while sedentary Danish farmers have formed and restored their landscape by building dikes against surges of the sea. Moreover, the two landscapes are radically different in topography, climate, and population density. We are interested in juxtaposing these cases in order to show the specific forms the dilemmas take in these local landscapes; thus, we try to understand the general challenges based on the way they present themselves in two specific Nordic contexts.

Furthermore, we explore *landscape* as an analytical perspective as well as a physical phenomenon through the lens of electroscapes transformations. The analytical perspective is connected to the view from afar, as will be discussed later, while the physical landscape is changed in different ways in our two cases impacted by the scale and topography of the landscape. At the same time, this follows the strategic logic of how best to harvest energy, with a considerable impact as seen from a local perspective. In Sápmi, one huge energy-demanding system is anchored in the small site Melkøya. From this location, infrastructure for the production and transportation of electricity will extend over a huge region. The elements of this large-scale electroscape are systemically interdependent and have a centre. In the marshland, by

contrast, smaller windmill parks or solar parks are inserted into the landscape; these parks have no shared centre and are systemically independent of the other small-scale electrosapes in the landscape.

In our exploration, we will pay special attention to the duality of landscape as regarded from afar (outside) and from within (inside), since we argue that the dilemmas between global and local spheres are tied to different views of landscapes. The tension between global needs and local value is not only spatial and material, but also social. In the global systemic logic, where politics of needs dominate, landscapes appear as necessary industrial supply zones – operationalized landscapes – for the purpose of capital growth as well as reflect an agenda of sustainable production and/or consumption. From this perspective, electrosapes are sacrificial territories for a societal concern identified as the greater global good. In the local social logic, where politics of values are voiced, landscapes are seen and lived from within. Electroscape transformations superimpose global strategies on local lives, which find themselves in the difficult position of struggling to become a valid part of the discussion.

These dilemmas are also mirrored in methodological challenges faced in our cases; the view from within is concerned with the surrounding world, while the view from afar detects strategic potentials. In discussing global needs from a local perspective, there is a role for anthropology and architecture as fields of knowledge for understanding lived life in its socio-spatial dimension. We both engage in larger fieldwork concerning the socio-spatial dimensions of landscapes, however in both of our fieldwork cases, the cases of emerging electrosapes have catalysed changes and frictions that were already present in the fieldwork. That is why we decided to explore the idea of electrosapes based on our two cases. As a part of our exploration in progress, we combine perspectives of architecture and anthropology by employing a method of architectural ethnography and an anthropological focus on space vis-à-vis landscapes; that is, we regard traces of human activity as an expression of a lived landscape.

This article is structured as follows: First, we present our two cases. The first case is part of architect Runa Johannessen's fieldwork and has its focal point in the small island of Melkøya in Norway/Sápmi, where a liquefied natural gas plant is planned to be run by electricity produced from renewable, land-based sources. The second case is part of anthropologist Kirsten Marie

Raahauge's fieldwork and deals with the marshlands of Southern Jutland in Denmark, where a test centre for giga offshore windmills was planned to be situated. In these investigations, the socio-spatial dimension of the actual landscape is brought to the fore. Next, a theoretical section clarifies how we approach the notions of landscape and the operationalization of landscapes, and connect them to the electroscape. Finally, we conclude by discussing the dilemmas of the green transition from a socio-spatial perspective. As this is a work in progress, the outcome of our inquiry is, rather than being a settled conclusion, an invitation to further explore electroscape dilemmas as situated dilemmas.



Figure 1: Map showing the locations of Melkøya in Finnmark county in Norway/Sápmi, and the Marshlands in Denmark, and further downwards the German and Dutch coast. Source: Runa Johannessen

MELKØYA

Melkøya (*Moulkkut* in Northern Sámi) is a tiny island directly outside of the town Hammerfest in Norway's northernmost county, Finnmark. It is also part of Sápmi, the Indigenous land of the Sámi people, which bears a long history of colonization by the Fennoscandian nations. Finnmark is Norway's largest county with respect to geography, covering 48,600 km², yet, in population, is the smallest with only 75,000 inhabitants. This Arctic region is mountainous with big plateaus, a long shoreline, and deep fjords. The climate differs greatly between the coast and inland areas, with relatively mild winters but cool summers on the coast, and freezing winters and hot summers on the highland plateaus. It is also a region where climate change is significant, with temperatures increasing more quickly than in the rest of Norway.

In the summer of 2023, as part of my (Runa Johannessen's) research project 'Habitats of Extraction', I conducted travelling pilot fieldwork to Sápmi and Northern Norway and Sweden, with the purpose of observing the on-the-ground dimensions of *natureculture* landscapes of resource extraction, focussing particularly on how the very materiality of electrification and technology in the transition from fossil to renewable energy is creating new



Figure 2: Melkøya island and the Hammerfest Liquefied Natural Gas plant. Source: Runa Johannessen

landscapes in the geographical North. From a global perspective, a cocktail of climate change, vulnerable ecologies, security politics, and resource frontiers make the Arctic an area undergoing critical change. On the two-week-long pilot trip, I conducted fieldwork in the landscape. I employed a method of architectural ethnography that combines visual/optic and immersive sensory modes of registration, meant to precede conventional systematic mappings of the features of resource and energy production landscapes, such as mines and quarries, windfarms, hydropower dams, and high-voltage lines. Moving within vast landscapes by train, car, and foot gives an embodied sense of their sheer scale. Guided by the search for energy extraction, the ecoservice relations between natural landscape features, the way energy is being extracted, and the infrastructure that serves it, came to the front. The fieldwork's slowed-down gaze (and perception) from within enabled a view that brought to the fore a landscape dominated by energy. Within this extensive landscape, the small island of Melkøya seemed to encapsulate many of the critical issues at stake in connection with electroscape proliferation in the region. Governmental policies and energy reports shed light on how the strategic logic for the electrification of Melkøya was constructed, and newspaper and opinion pieces in the local and national press, alongside activist campaigns and colloquial conversations with local residents, showed the complexities of the social logic concerned with the local consequences of electrification.

Melkøya island has served as the industrial site for the Hammerfest Liquefied Natural Gas (LNG) plant since 2007, run by Equinor, a Norwegian state-owned multinational energy company. Hammerfest LNG receives gas from the Snøhvit natural gas field in the Barents Sea by means of an undersea pipeline. The gas is delivered to Melkøya for processing before being shipped to the global market. LNG processing is energy-intensive and is currently powered by an on-site gas plant.

In August 2023, coincidentally, at the same time as I was there, the Norwegian government decided to approve Equinor's project Snøhvit Future, which is a plan to electrify the LNG processing plant by 2030.² In this future prospect, the LNG plant at Melkøya will be powered by electricity produced from renewable sources on land. By electrifying Hammerfest LNG, the carbon footprint of gas processing will, according to Equinor, be lowered by an annual 850,000 tonnes of CO₂ and thereby contribute significantly to reducing Norway's calculated emissions.³

For the Melkøya plan to become a reality, new renewable energy projects on land in Finnmark at a magnitude of 3.1–3.3 TWh are needed.⁴ Today's production of electrical power from renewable sources in Finnmark covers the current needs of the region. For the electrification to become a reality, new renewable energy projects in the form of windmills, as well as an increased capacity of existing hydropower plants, are required. The existing high-voltage transmission grid is not equipped for this amount of power, so new hardware infrastructure must be built. Most of the surplus capacity in this new grid will be reserved for Hammerfest LNG.

'*Kraftløftet*' – with the multiple meanings of *powerlifting*, *energy development*, and *energy promise* – is an action plan resulting from the tripartite collaboration between the Ministry of Energy, the Norwegian Confederation of Trade Unions (LO), and the Norwegian Confederation of Enterprise (NHO).⁵ In line with preceding reports from the Energy Commission and Statnett, '*Kraftløftet*' stipulates that there is a critical future *need* for more energy in Finnmark because of increasing *demands*.⁶ The report '*Kraftløftet for Nord-Norge*' asserts that Northern Norway currently produces a surplus of energy, but that 'an explosive growth in demands' for renewable energy corresponds to a tripling of current consumption.⁷ As a summons for immediate action, the report announces, 'We need a powerlifting, and we must act now!' In the Norwegian government's press release on its plans for energy and industry development in Finnmark, they present their goal to increase the county's renewable energy production on par with the planned consumption by Hammerfest LNG.⁸ According to the government, increased production is needed for industrial and technological development and growth, and this is argued to be a prerequisite for continued inhabitation of the region, although it is the LNG plant that will actually use the added amounts of electricity. New plans for windmill projects in Finnmark were presented in June 2024. As of fall 2024, eleven projects were undergoing license processing.⁹

'*Kraftløftet*' is a politics of needs based in the ideological belief in 'growth': it is expressed as the needs for economic growth and increased industrial production, often under the labels of green growth and sustainable futures. The increasing demand for electricity is tied to these expressed needs. While the tiny island of Melkøya is the industrial site for the future electricity-powered processing of fossil fuels, it is the whole region of Finnmark that will become absorbed into the operation of extracting and delivering renewable

energy. From a view from afar, the landscape has a capacity to be productive and serve needs that are far away; an electroscape of wind and water energy harvesting that seems to promise a low-emission future even for the swelling production of fossil fuel.

However, the national plans have met with considerable local resistance. It is especially the consequences for Sámi reindeer herding that have prompted resistance, as windmills seem to change the reindeer herds' pattern of living and movement between summer and winter grazing areas, as they shy away from the noisy, rotating blades. But other parties are also critical of the expansive development and pressure on nature as well as the aesthetic degradation of landscapes, such as the civil society organization Motvind, for instance, which produces maps to show the visual impact of windmill farms when they are placed on mountaintops.¹⁰ Another aspect is the increased electricity prices for Finnmark's inhabitants if Hammerfest LNG seizes most of Finnmark's energy. Heated debates have taken place in the local and national media and in on-site campaigns and demonstrations, and the issue has even been brought before the court, as the Sámi Parliament has sued the Norwegian State and the Ministry of Energy for disregarding the state's duty to investigate and consult with the Sámi in cases that affect their subsistence in nature.¹¹

Sámi stakeholders are simultaneously reporting that they are becoming exhausted by bureaucratic and legal cases initiated to protect their herding land.¹² Sámi protests meet with resistance from other local actors representing majority society (*storsamfunnet*), for instance municipalities, which welcome industrial development of the region. Some Sámi stakeholders say they are being accused of being backwards, against development, a hindrance for green transition, of not representing the entire Sámi community (but only reindeer herders), and instead promoting NIMBY arguments.

As this shows, Sámi lifeworlds are clashing with electroscape logics. In an episode of the Sámi architect and artist Joar Nango and cinematographer Ken Are Bongo's *Post Capitalist Architecture TV*, a Forest Sámi man explains how, in Sámi culture and language, the wind is a person, and how he, the wind, helps clear the fields of snow, and how he signals particular times of the year and other forms of 'collaborations with the wind'.¹³ The wind turbine projects on Sámi lands disturbs the wind-land relation and makes

wind a commodity: ‘... it hurts when you see him enslaved and forced to run wind turbines to make money for the European capitalists.’¹⁴ Elsewhere, in academic discourse, the proliferation of energy projects in Sápmi has been referred to as green colonialism or energy colonialism.¹⁵ Historically, the outside view and discourse of the northern regions of Scandinavia as being ‘empty’ and a ‘wilderness’ has enabled a colonization of Sápmi. Moreover, as described by landscape architect Kjerstin Uhre, there is a Nordic legacy of regarding landscapes as substantive areas governed by laws and custom.¹⁶ The indexing of landscapes in a hegemonic discourse describes them based on their resources, and, in this view, the battlefield is not the lived landscape of the Sámi’s culture and way of life, but the designation of land use and the eventual progress towards electroscares.

Based on the analytical notions of the urban and architectural theorists Christian Schmid and Milica Topalović, Melkøya appears as a kind of extended urbanization, an urban hinterland where landscapes are operationalized and resources are delocalized or dissociated from their locality.¹⁷ The operationalization of landscapes does not lead to an agglomeration of urban centres (like historical mining towns and regions, when mining was more labour intensive), but rather to extended peripheralization. The architecture theorist Rania Ghosn has similarly observed that ‘the creation of value in energy regimes has long internalized benefits and accrued them to the urban center while “externalizing” costs – sliding them to the periphery out of sight.’¹⁸ In the public debates about Melkøya, an argument for electrification is job creation and development of the region through the tasks involved in building infrastructure et cetera, which leads to economic growth locally if local entrepreneurs are involved. However, the operationalization of the landscape through the local electrification of Hammerfest LNG subsumes the entire region of Finnmark, and the wind turbines and power lines will not result in an agglomeration of social and economic development. Melkøya is an example of this sort of electroscape proliferation, in which a single-purpose need seizes control over the life and resources of large areas. When energy-intensive industries are located in areas where natural resources are readily available but do not contribute to the integrity of the life already present, resources are delocalized or dissociated from their locality.

Seen from the double perspective of electroscares, we see that the electroscape on the horizon is a landscape that is viewed from afar – from sites of

power – but also from inside, where life unfolds. Yet the inside – the local lived landscape – is being emptied out, while electroscape outsides are growing.

THE MARSHLAND

The marshland in question is situated near the border between Denmark and Germany, close to the North Sea. It has been shaped by the inhabitants' life with and against the sea; dikes have safeguarded the inhabitants against storm surges, while drainage ditches and sluices have channelled the water.¹⁹ This control over the landscape has enabled the inhabitants, humans and other species, especially birds, to prosper from the fertile land and to live in relative security from surges. The Frisian farms typical of the area are positioned on manmade hills to protect them from surges. In 2014, a large part of the marshland, the Wadden Sea National Park, was added onto UNESCO's list of World Heritage Sites. The marshlands have correspondingly become an enormous museum piece, a landscape of experience in addition to a landscape of farming, serving as a driver of the economy and of imaginaries. By accommodating nature holidays, birdwatching, oyster safaris, walking tours, Wadden Sea experiences, and sublime views, imaginaries have switched from being related to danger and protection against nature to later being focussed on the landscape and its natural resources for food production, to recently becoming concerned with the experience, beauty, authenticity, and leisure of the landscape. The inhabitants are Danes, however, also the regions of Friesland (covering the marshes from the Netherlands to Denmark) and Schleswig (situated on both sides of the German-Danish border) are defining for the area, as is the German minority (as an effect of shifting borders, there are minorities on both sides of the border) as well as newcomers from Germany, the Netherlands, Poland, Ukraine, and other places.

The research project 'Spaces of Danish Welfare' (2017–22) deals with the spatial aspects of Danish welfare systems, while my (Kirsten Marie Raahauge) subproject, 'From Province to Periphery', investigates the changes in the provinces following a centralization of the welfare system.²⁰ Over the last two to three decades, welfare institutions have been moved to larger cities, leaving more rural areas without the amenities that used to be present. The study is based on ethnographic fieldwork, participant observation, and qualitative ethnographic interviews in Tønder, the central town in the area and in the marshland. The marshland is also included in the study, since it has become increasingly important for the area. Focussing on the relationships between

space, social relations, and cultural imaginaries, the relevance of the shift in balances between town and landscape concerns systemic changes such as the growth of tourism, the isolation of heritage sites, or the centralization of welfare systems; the most significant transformation concerns changing space-human relations and their impact on everyday life.²¹

In *The Anthropology of Landscape*, Eric Hirsch and Michael O'Hanlon observe that landscapes are typically positioned as the background, whereas city life has become the foreground, endowing the landscape with potentiality, the city with actuality.²² They instead propose conceiving landscape as a 'cultural process' and recognizing that foreground actuality and background potentiality exist in a process of mutual implication.²³ Sharing this approach, the marshland is understood as a scene for tourism, yet at the same time a lived landscape for its inhabitants.



Figure 3: Kvitfjell Raudfjell Windpark on the coast outside of Tromsø in Northern Norway. The sixty-seven turbines are connected by 45 km of gravel roads and are positioned on two mountain plateaus. Source: Runa Johannessen.

In his article 'The Language of the Forest', Alfred Gell writes: '... cultural theories ought to be anchored in the specifics of physical localities, technologies, lifestyles, rather than seeking to appeal to absolutes and essences.'²⁴ This perspective implies taking the concrete physical conditions seriously in any anthropological study, highlighting the interwoven relations between space, social relations, and cultural imaginaries, the situated knowledge, and the perceptions of local inhabitants. Furthermore, the oft-raised discussions of local versus global, and even of glocal²⁵ conditions become very concrete, as they are always beforehand situated somewhere, thus highlighting the methodological challenges and the dilemma of the logics of need and the logics of value not being part of each other's context. The point is not that the marshland is a 'protected area', 'world heritage', 'farmland', 'birdlife zone', or 'tourist landscape', as it can be labelled when seen from afar, but rather the importance of exploring the implications of living under these specific socio-spatial conditions.

As the Umeda people described in Gell's article live in a dense jungle landscape, their way of navigating in the landscape is conditioned by hearing, not seeing. This, obviously, is in opposition to living in the flat marshland, which is determined by a far-reaching gaze, giving a superior position to the visual sense, a position helped by the primacy of visibility in Western societies as a whole. The visual is also defining for ideas concerning beauty as connected to this landscape, whereby the primacy of the gaze becomes important for the growing tourism in the marshland and for its designation as a World Heritage Site. Mirrored in iconic expressions such as paintings by the artist Emil Nolde, imaginaries about the marshland being visually and aesthetically pleasing have become increasingly strong over the last twenty to thirty years. Consequently, the visibility typically connected to mapping and understanding from an outside position is also linked to the experience of the marshlands from inside.

In the fall of 2023, it was announced that a giga-windmill test centre was to be situated in the Ballum marshland to investigate the possibilities of newly invented giga-windmills intended for offshore use. Hereby, research into green energy would get a major lift. The proposed test centre was planned to contain eight giga-windmills, each of them 450 meters high, and each of them connected to a 300-meter-high light standard. The villages in the vicinity would be expropriated,²⁶ farming and tourism would become impossible, and birdlife as well as UNESCO World Heritage Values would be endangered.

In the flat marshland, the windmills would be visible from afar, as would the light standards; the sound of the giant blades turning would be considerable. Birdlife, including birds of prey, wading birds, and the rare 'black sun' phenomenon, in which hundreds of thousands of starlings fly in formations, would be endangered. The farmland would be turned into an industrial park, an electroscapes closed off from the rest of the area.

As seen from a local position, this would degrade the landscape considerably. Petitions and letters were written to the government and the media and protests were organized, among them a tour with invited politicians from the parliament in order to show the consequences of the plans, as well as a 'wall of people' arranged by teenagers from the area. As it is not common for the local inhabitants to attend demonstrations, the 200- to 300-meter-long 'wall' of old farmers and young high school pupils, dotted with owners of holiday



Figure 4: A car used as poster during the tour with politicians from Tønder to Ribe, two towns in the marshland. The poster says: 'Is a dead migratory bird frightening? ... meat grinders in the marshland'. 25 November 2023. Source: Kirsten Marie Raahauge

cottages, standing at the roadside was a rare sight, attracting the local television and newspapers. As I heard about these events, I decided to continue my fieldwork by participating in the demonstrations and talking to participants, organizers, and politicians. Thus, as the events were taking place, begging for fieldwork to be conducted, as this was leading to a new analytical positioning based on electroscares and the dilemmas related to them as a part of understanding the landscape of the marshlands. I was interested in the new enmeshments of humans and landscape that might arise from this situation and in exploring what they would do to the landscapes and its inhabitants.

In February 2024, the Danish parliament decided to situate the test centre in Thy in the North of Jutland; the marshland inhabitants were relieved. Yet, many of them started worrying about the future: no windmills meant room for solar cell parks, and that would be terrible, too: 'It looks like a giant, black lake that you cannot touch or get near to!', a local woman said, and a man pointed out that solar cell parks are extremely polluting, that sheep grazing nearby drop dead. Others were worried about the new 180-meter-long windmills that are going to replace an older windmill park to the south of the area. 'They snuck in this windmill park while we were looking the other way, protesting over the giga windmills', a woman explained. She also told me that when the wind comes from a particular direction, she and her husband are bothered by the noise of the smaller windmills currently situated in the windmill park. The noise will increase with the larger windmills; in addition, these windmills will have to have red lights placed on their blades for airplanes to be able to detect them; they will be visible from afar. All in all, the woman anticipates a degradation of the near vicinity, audibly as well as visually. The municipality of Tønder welcomes projects concerned with green energy, and plan to situate them in the countryside. As farmers or former farmers now renting out the Frisian farmhouses to tourists, the locals know that they must seize the opportunities available; their protests against the giga-windmills and worries concerning the solar cell and windmill parks to come are out of the ordinary, arising since the windmill and solar cell parks are perceived as a radical game changer, as standing out by excluding inhabitants from the area. Until now, the shaping of the landscape through a space-human entanglement has been vital for living in the marshland. Erecting dikes, drainage ditches, and sluices, farming the land with huge tractors, and transforming farms into holiday cottages with spa and billiard tables for tourists, all of this has been a way to live in, with, and next to the landscape. With the test centre, the locals would have to abandon the marshland and leave.

The test centre would radically compartmentalize the landscape, fencing off the area to be only used as an electroscape, connected to a national system. However, wind, used intensively to harvest energy, cannot be compartmentalized; it is everywhere, as is the light from the light standards. Thus, over a span of just a few years, the wind and the Wadden Sea have been given new roles; the Wadden Sea is recognized as important for absorbing CO₂ emissions, and the wind has become a major element in green energy test plans. Meanwhile, the soil has been degraded; it would be used to anchor the mills by way of cement piling, 'more cement will be used for this than was used by the Nazis to build the Atlantic wall!'; as a local man put it.

Over the last twenty to thirty years, the marshland has become linked with 'experience', 'preservation', 'heritage', and 'leisure'. Furthermore, plans are being made to halt the intensive draining of the marshland, returning it back to the state it was in 100 years ago so as to limit changes to the climate. In this way, nature regarded as dangerous due to flooding has turned into imaginaries of nature as endangered and the Wadden Sea threatened by climate change, while the meadows in the area, which absorb CO₂ emissions on a scale larger than the rainforests, have become a master signifier for 'nature'. This also adds to the current discussion about 'wildening'. In the marshland, 'wildening' has to do with halting drainage, whereby parts of the landscape will become useless as farmland. To some degree, these uses and imaginaries of the marshland conflict with each other, while the locals nonetheless manage to regard them as opportunities. This is not the case, concerning the proposed test centre, since it could not be implemented in the marshlands, making farmers as well as tourists obsolete and endangering the birdlife and the UNESCO World Heritage Site.

This changes the 'landscape' into a 'resource', a gated industrial area, the landscape operationalized so that the soil accommodates extraction, while the air is the energy provider, and transportation from the scarcely populated electroscapes of extraction to the densely populated urban areas of consumption becomes the major concern. This also results in new ways of shaping the region, by means of fencing off and compartmentalizing. The electroscape would be a landscape without humans, probably also altering the local flora and fauna, yet would be visible from afar, thus amplifying the impact of the new landscape, also with respect to its aesthetical, visual, auditive, and tactical qualities.

Anthropologist Caroline Humphrey discusses Mongolian landscape as emerging in interaction with the Mongolian nomads that she studied, involving agency from humans as well as the landscape. This landscape is far removed from the landscape of mapping. As she states, ‘The Western idea of “the landscape” arises from objectification and is clearly related to practices such as painting, map-making, song and poetry.’²⁷ It might be this origin of ‘landscape’ that has enhanced both the view of the marshland as aesthetically pleasing and, simultaneously, the plans for exploiting it.

LANDSCAPES, ENERGY, AND ELECTROSCAPES

Before we continue, we must make a disclaimer about what in sustainability discourse is called the ‘green transition,’ or more specifically the energy transition from fossil fuels to renewable sources. We are still in the fossil fuel era. Coal and hydrocarbons are being extracted at an increasing rate. In absolute numbers, we are producing and consuming more energy than ever, and renewable energy like wind, solar, and hydropower are merely additions



Figure 5: Visualization of test giga-windmills in the Ballum Marshlands. Source: 3D visualization by UnderdogMedia (www.underdogmedia.dk)

to a growing global demand for energy.²⁸ The energy transition to renewable energy is, in other words, yet to come, and the fossil energy landscapes of coal, oil, and gas are not yet a historical past.²⁹ We therefore need to know more about the new challenges posed by the electrosapes of renewable energy.

As already introduced, *energy landscapes* are landscapes of energy extraction, or with the definition offered by Pasqualetti and Stremke in *Power of Landscape*, energy landscapes are 'observable landscapes that originate directly from the human development of energy resources'.³⁰ The empirical concept of energy landscapes was previously a specialized term yet has meanwhile well established, for instance, within the professional field of landscape architecture, and is gradually becoming a term of common public knowledge. Another term covering the same area, yet predominantly from a natural science or political science perspective, is *energyscape*. In the multidisciplinary systems approach of D.C. Howard et al., an energyscape is defined as 'the complex spatial and temporal combination of the supply, demand and infrastructure for energy within a landscape', and it 'has a spatial and temporal basis and focuses on both internal interactions between the energy system components (demand, supply and delivery) and interactions with other components of real landscapes such as people, structures, topography and ecosystem services'.³¹ From an international relations perspective, Hanna Lempinen uses the term as a 'broad framework for conceptualizing energy-society affairs', and 'highlights the inherently political nature of the notion of sustainability', while Aleksander Ivancic uses it as a descriptive category to analyse large-scale energy-producing structures.³² These conceptualizations inform our understanding of energy + landscape, but to grasp more precisely the socio-spatial dimension of these landscapes as contested contexts where politics of needs and politics of value clash, we suggest opening up this specific perspective with our term *electroscape*. We situate it within landscape discourses in anthropology and architecture, as demonstrated in the two cases.

On the one hand, there is the view of landscapes as seen from a generalized outside position of substantive categorization. On the other, there is the view of landscapes from within, understanding them as a 'lived landscape'. The anthropologist Peter Gow analyses these two positions in the article 'Land, People, and Paper' while discussing one part of the Peruvian Amazon.³³ Gow remarks that the first position gives rise to maps and documents regard-

ing the area as seen and represented from the outside, while the second is concerned with the lives of the local people as seen from the inside where ‘... the Bajo Urubamba River is lived as a human landscape by local native people through a multiplicity of engagements ...’³⁴

In a continuation of Gow’s analysis, we ask what it might mean to be *out of context* when monumental questions of energy transitions are transforming landscapes. The dilemmas of the politics of needs and the politics of values are tied, respectively, to the views of landscapes from outside and inside perspectives, which leads them to be out of context vis-à-vis each other, as Gow also highlights. We hold that we need to apprehend global needs from the context of local knowledge – and contest global needs through the lens of local values. Although we do not use the notion ‘environment’, this suggestion is inspired by Tim Ingold’s work on environment, especially his essay ‘Globes and Spheres: The Topology of Environmentalism’, where he argues that a ‘global environment’ is paradoxical, as ‘globe’ deals with geopolitical matters, while environment ‘is that which surrounds us, and can exist, therefore, only in relation to what is surrounded.’³⁵ This perspective resonates with Gell’s point above: the importance of taking the concrete, physical conditions seriously in any anthropological study. Thus, Ingold suggests, ‘the notion of the global environment far from marking humanity’s reintegration into the world, signals the culmination of a process of separation.’³⁶

The exact definition of what ‘landscape’ is in substance is of less importance to the present analysis of contested electroscaapes. However, we find it important to clarify the perspective from which we discuss landscapes. ‘Landscape’ is not a term with a fixed meaning. In *Poetry, Space, Landscape*, Chris Fitter points out that European conceptions of landscape can be dated to seventeenth-century England.³⁷ The physical distance is important, since ‘the landscape’ emerges as seen from the metropolis, as viewed from afar. Nicholas Green, Eric Hirsch, and Keith Thomas second this interpretation, underscoring that the perception of landscape is structured by the city and is invested with romanticized, picturesque aspects.³⁸ Furthermore, Fitter points out that ‘landscape’ derives from the notion of ‘landskip’, emerging as part of commercialized civilization.³⁹ Constructed as a ‘landscape’, the implicit visuality and aesthetic framing of it becomes highlighted, but seen from the city and from afar.

The European Landscape Convention (ELC) of 2000 presents an inclusive definition that to some extent detaches itself from such ideas of a distant gaze. The ELC defines 'landscape' as 'an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors'.⁴⁰ It concerns all kinds of landscapes, from the natural to the rural and urban, and from spectacular to everyday or even degraded landscapes. The ELC thus includes all types of landscapes in policies for protection, management, and planning, as well as highlighting the value of living landscapes. In her examination of contested Arctic landscapes under pressure from extractive industries and climate change, Kjerstin Uhre points to the possibility offered by the ELC's formulation to consider cultural readings of landscapes as shaped by human action, and, quoting Jones and Stenske, not 'an exclusive field for scientific and technical specialists'.⁴¹ Yet, according to Uhre, as mentioned above, the Nordic legacy is to see landscape as substantive areas governed by laws and customs. How landscapes are categorized is important for how they are governed. For instance, if a landscape is indexed as 'nature' and perceived as 'empty' or 'wilderness' when viewed from the outside, landscaping practices as perceived from within might be, in the conceptualization of this article, 'brought out of context' and disregarded. Another circumstance, as stated by Christophe Girod, is that we at present have an empirical approach to solving environmental problems which supersedes aesthetic concerns, and which affects our understanding and conception both of nature and of landscapes.⁴²

Instead of fixing landscapes in substantive categories, Gunhild Setten notes, 'Landscape is an analytical perspective, e.g. a way of looking at the surroundings, while at the same time it is the concrete you look at: the physical landscape. Landscapes are thus both material and discursive, and these dimensions presuppose each other.'⁴³ The emphasis on landscape as an analytical perspective allows for a view of landscape as a fluid category that plays a role in all fields with socio-spatial interests, and it opens it up for the multiple ways in which humans and landscapes are enmeshed.

Evidently, 'nature' is a major component of landscapes, being everywhere, as it is, as an empirical phenomenon, as well as being used as a notion for a wide array of ideas. These cosmologies are important for how landscapes are regarded.⁴⁴ But perhaps our understanding of landscapes today is even

more appositely described from the emerging theoretical positions of urbanism than from views of nature. Many contemporary urbanists are just as concerned with peripheries and 'the countryside' as they are with metropolitan centres. What happens to landscapes as a particular kinds of spaces when they transform into generic industrial sites? Koolhaas's book *Countryside: A Report* is precise in its polemical descriptions of the new countryside, changing beyond recognition, having become a mosaic of industrial landscapes necessitated by urban life, on an unprecedented scale.⁴⁵

A similar analysis of the contemporary urbanization of peripheries is offered by Christian Schmid and Milica Topalović, as also mentioned above. In *Extended Urbanisation: Tracing Planetary Struggles*, they describe how urbanization processes are taking place in territories beyond the city, as an extended urbanization of peripheral areas of all kinds: 'We understand urbanization as a historical process that should not be confounded with the long history of human settlements and their traces on the Earth. Our focus is on the relatively recent historical phase of urbanization as a process linked to the development of capitalism and rooted in Western anthropocentric rationality and the philosophical split between society and nature.'⁴⁶ Extended urbanization, like Koolhaas's countryside, is characterized by the industrialization of society. At present, according to Schmid and Topalović, we see this historical process moving towards a planetary urbanization that produces spaces of negative effects such as pollution and the destruction of nature. Energy production is closely connected to these processes of extending urban areas, subsuming peripheral landscapes as 'hinterlands' of urbanizing processes that respond to the urban needs for energy supply.⁴⁷ With Schmid, energy production as well as the extraction of natural resources are *operationalizations of landscapes*, in which environments and territories are functionalized to provide material support.⁴⁸ Unlike historical industrial projects or mining towns, the operationalization of landscapes does not lead to the growth of urban and/or social centres, but rather to extended peripheralization—operationalizing the landscape is all about making use of resources that can be turned into capital. The different effects of this process can be seen in our cases: in Melkøya, the Sámi herders are marginalized spatially as well as with respect to ways of imagining the landscape, while, in the marshlands, the inhabitants would have had their villages expropriated had the electroscapes been installed. In the operationalization of landscapes, lived life is not only seen from afar, but ignored, too. The process is the same,

whether the extracted resource is oil, coal, corn, lithium for batteries, sand for concrete, or wind for energy.

BRINGING VALUES INTO CONTEXT

As previously mentioned, landscapes might be perceived as ‘empty’ or as ‘wilderness’ when regarded from afar, yet from within, the same landscape might be perceived as a lived landscape, where inhabitants and landscape are interrelated and interdependent. If the same notions are used to understand electroscapes, it becomes obvious that electroscapes are perceived as meaningful, or even needed, as seen from afar, while they are perceived as ‘empty’ as seen from within, not because they are perceived as ‘wilderness’, but for precisely the opposite reason: they are ‘controlled’ and repel humans as well as other species.

In *Architectures of Dismantling and Restructuring* of 2022, we argued that sustainability is one of the most important topics for research on welfare.⁴⁹ In this article, we have explored this topic with an eye to the duality that is implicit in discussions of sustainability when it concerns landscapes: ‘green’ energy is sustainable in terms of its renewable sources and lower emissions, but it destroys or degrades the landscapes that are being affected. It does not seem very sustainable when landscapes become industrial and logistical parks, where biological and social life has difficulties thriving or even living. These local effects vis-à-vis generic industrial spaces are less easy to see from the city, though these landscapes are the spatial and material safeguards for the ease of contemporary life in affluent cities.

When various forms of energy are discussed, the focus is often on the calculated emissions of CO₂, while there are fewer debates about the fact that energy production is spatial and material – and has social and aesthetic effects. The idea of the free flow of globalized energy has formed the modern world, enabling effortless urban lives (in the geographical North) as a result of easily transportable fossil fuels. Renewable energy comes with a different set of conditions: it demands space, a fixed infrastructure, and is layered with other life-forms in the area. This creates friction between the ethereal and the material, between the global and the local.⁵⁰

When electroscapes are operationalized according to a politics of needs that outweighs situated views of the world, environments are compartmentalized

to respond to specific needs for resource supply. This brings local, social, and aesthetic values out of context. We suggest that the field might be regarded not as a problem-with-a-solution; rather, we propose understanding it as a field of conditions and potentials that must be studied so as to be able to take both strategic and social logics into consideration.

NOTES

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THINKING OF NATURE IN BUILDING AND CONSTRUCTION: LINKING THE ENVIRONMENTAL PHILOSOPHY OF ARNE NÆSS WITH KINJI IMANISHI AND THE 'WORLD OF LIVING THINGS'

Bendik Manum

ABSTRACT

What we know as nature on Earth is under threat by direct and indirect impacts from buildings and infrastructure. While this is the case worldwide, there are some differences in thinking about nature across the world, where the traditional nonduality of Eastern thinking differs greatly from common thinking in the West. By linking the environmental philosophy of Arne Næss with seeing nature as the 'world of living things' as elaborated by Kinji Imanishi, this article aims to increase awareness of the role of nature in architecture and contribute to a framework for discussing impacts on life in nature arising from buildings and infrastructure. To summarize, the elaborations of Næss on values in reasoning and the importance of 'self-realization for all' and thereby diversity and synergy, are useful for revealing biased reasoning in discussions of the impacts on nature and for giving more priority to nature. For thinking about nature in more detail, to supplement Næss's identification with 'nature at all' with seeing nature as the 'world of living things' as elaborated by Imanishi, is inspiring and useful for increasing awareness of life in nature and for assigning value to nature when we examine, discuss, and decide where, what, and how to build.

KEYWORDS

Architecture, nature, Arne Næss, Kinji Imanishi

INTRODUCTION

Nature Under Threat and the Role of Architecture and Construction in This

What we know as life on Earth is under serious threat. Since the Brundtland Commission's report¹ and the first United Nations climate report in 1992,² the Intergovernmental Panel on Climate Change (IPCC) has stated the importance of reducing greenhouse gas (GHG) emissions to avoid unbearable problems for life on Earth as we know it. On top of this, Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)³ and the IPCC⁴ highlight that the loss of natural diversity threatens life on Earth as much as GHG emissions do. In Norway, care for nature has been on the political agenda since the establishment of the Ministry of the Environment in 1972,⁵ and the evaluation of environmental consequences is today formalized in most arenas of society. Against this backdrop, it is difficult not to be surprised by what we plan and build in Norway today. Contrary to statements at the highest political level about reducing GHG emissions and caring for the environment, projects very detrimental to life in nature are being constructed on larger scales and at a faster pace than ever before. While Norway is among the countries where nature not fully cultivated by humans still exists, the amount of this type of nature is rapidly decreasing, and remaining areas are facing increasing threats. The list of recent projects seriously disfavours nature includes extensive highway construction, cabins spreading over and permanently destroying large areas of nature, wind power plants in the mountains where any construction until recently was illegal due to impacts on nature, and forests being transformed into plants for digital data storage and battery production.

Those who do not follow building and construction by professional or personal interest might see this development as something beyond what we as individuals can influence; the action of any individual alone makes no difference.⁶ For architects and engineers, the situation is somewhat different, since we are the professions that actually and in very detail plan and design what to be built. This is the case all over the world, but particularly in a country like Norway, where any construction by law requires companies with the formal competencies of architects and engineers to be responsible during all phases from early planning to the completion of construction. Due to this responsibility in terms of formalities as well as practice, the architecture and engineering professions cannot avoid having particular responsibilities also when it comes to the damage to nature caused by what we build.

For architects and engineers to handle this responsibility more in favour of life in nature than what we manage today, something must change, and this text aims to raise awareness of ways of thinking that can be useful for this. For thinking about nature under threat in Norway, a starting point can be Arne Næss (1912–2009), an internationally highly acknowledged scholar in environmental philosophy. Reading his book *Økologi, samfunn og livsstil*⁷ from the perspective of impact on nature from building and construction today and at the same time becoming aware of thinking about nature by Japanese philosophers, is my background for writing this article.

Although threats to life in nature caused by us humans can be recognized all over the world, there are some differences in how people around the world think about nature, whereby key elements of traditional Eastern cultures have much in common with the environmental philosophy of the West.⁸ Looking at Japan in particular, this can be recognized in the role of nature in traditional architecture and gardens, and in how religion and culture are characterized by less dualistic conceptions than in the West, with less distinction between subject and object, between the individual and society, and between us humans and nature as our environment.⁹ Regarding how to think about nature, a particularly interesting scholar is Kinji Imanishi (1902–1992), who in 1941 presented his key thoughts in the book in English entitled *A Japanese View of Nature: The World of Living Things* (2002). In addition to Næss, this book by Imanishi is the basis for this text.

Both Næss and Imanishi became acknowledged for developing theoretical frameworks besides and partly in opposition to established scholarly practices. Næss developed Deep Ecology by taking a wide-scoped philosophical approach to ecology and linking this to politics, while Imanishi elaborated nature as the ‘world of living things’ by proceeding from studying nature as biologist to thinking about nature along the lines of the Japanese philosopher Kitaro Nishida (1870–1945) and others in the ‘Kyoto school of philosophy’.¹⁰ When I in what follows present Næss and Imanishi, I neither pretend to cover all of their works, nor do I claim that my selections are fully in line with how the works are seen from the perspective of philosophy. What I do, after presenting an overview of the lives and works of Næss and Imanishi, is to point out some elements of their respective works that appear particularly relevant for thinking about nature from the perspective of architecture and construction today. Based on this, I comment and elaborate on some points that I hope may inspire to further reading, thinking, and discussions.

Before proceeding, a few remarks on terminology may be helpful. Nature is a term applied in such a wide range of meanings that any scholarly use of the word requires clarification. In the case of this text, aiming to contribute to awareness of nonhuman life on this Earth being under threat from what we build, the chosen meaning of 'nature', unless stated otherwise, is the 'biology on Earth that is not fully controlled by us humans, along with the not-human-made environment of this biology', where 'biology' includes everything living on land, in the air, and in water. By this definition, 'nature' includes 'the living' as well as 'the non-living', but is, in any case, concrete rather than abstract, including neither artefacts, even though artefacts are all directly or indirectly made from 'nature', nor abstract meanings as in 'she is kind by nature'. Regarding humans versus nature, and in accordance with the approach of looking at this partly from an Eastern and not solely from a Western perspective, it is useful not to define us humans as either nature or as distinguished from nature. We are both. By our biology, by our lives from embryo to death and our molecules then dispersing into the environment, we are included in and inseparable from nature. We are nature. At the same time, due to our species' capacity for self-awareness and abstract thinking and our ability to impact and overrule the nonhuman nature on this planet, it can also be useful to distinguish between us humans and nature.¹¹ In this text, in accordance with the terminology of Imanishi, terms like 'life in nature' and 'living in nature' are not about humans spending time in nature (such as camping), they denote life and the act of being alive of nonhuman beings.

Architecture and Nature

Even when delimiting 'nature' as just described, and for now choosing not to include us humans in 'nature', architecture is linked to and inseparably intertwined with nature in many ways. For positioning nature as discussed in this text, in a framework of architecture and nature in general, connections between architecture and nature can be regarded as consisting of the five following kinds:

- (i) The use of building materials: What are the building materials, and through what processing are they transformed from nature, whether from minerals or from biological material like wood, into building components?
- (ii) The use of land: Buildings and infrastructure occupy a particular area of land, negating or restricting this area of land (or seabed) to be 'nature'.

- (iii) 'Viewing nature': Intentionally bringing 'nature' into a built project by 'editing views', such as designing a window for framing a particular selection of nature, the nature being a tree or the garden just outside the window, or nature being forests, sea, mountains, or the sunset.
- (iv) Creating 'nature-like phenomenon' within a project, which can be done in concrete or in more abstract ways; a garden being concrete, while variations and non-symmetry can be considered 'organic' or 'nature-like' in more abstract senses.
- (v) The numerous other and more indirect links between what we build and nature.

These different kinds of connections between architecture and nature impact nature in different ways. These different kinds of connections between architecture and nature impact nature in different ways and to very different extents. While 'viewing nature' (iii) and 'creating nature-like architecture' (iv) regard nature solely from the perspective of humans without impacting nature, building materials (i), land use (ii), and indirect effects (v) concern life and death for nonhuman living beings. Of these latter three that deeply



Figure 1: Sohlbergplassen. Atna, Norway. Arch.: Carl-Viggo Hølmekbakk (2006). Photo: Carl-Viggo Hølmekbakk

concern nature, building materials (i) and land use (ii) are determined very directly by planning and design, in which architects play key roles. Therefore, as I will address at the end of this article, these two types of links between architecture and nature are worth special attention when aiming to care more for nature by means of architecture. 'Indirect links' include multiple phenomena, ranging from how what we build influences our lifestyles, for instance the kinds and amounts of transport, to how explicit cases of buildings and infrastructure can, for good or for bad, make us experience and pay attention to nature. The Sohlbergplassen project (fig. 1), which can be regarded as representing 'viewing nature' (iii), is architecture that also indirectly connects to nature (v) by making visitors pay attention to nature not only in terms of the particular piece of beautiful landscape in sight, but also to nature in art, because the view is the motif of the most famous works of the highly acknowledged Norwegian painter Harald Sohlberg.¹² On the other hand, negative experiences can also make us pay attention to nature; destruction of nature can make us appreciate nature by becoming aware of and miss what



Figure 2: Wind power plant, Fosen, Norway. Photo: Jakob Ellingsen, Fosna-Folket

is lost, which in Norway is the case for recent highways and windmill power plants that have alerted many people not previously being very concerned about nature and environment (see fig. 2 and fig. 3).

In practice, particular buildings and construction projects often have contradicting impacts on nature, implying that conclusions on whether they are good or bad for nature depend on which aspects of nature that are given priority. While wind power plants directly impact nature negatively through land use, the use of building materials, noise, and the killing of birds, they may indirectly benefit nature by reducing fossil fuel consumption. The architectural masterpiece Sohlbergplassen raises awareness of beauty in nature. At the same time, it is a concrete-structure and an attraction for private car-based tourism, a practice of construction and a lifestyle that impact nature very negatively through GHG emissions and the use of resources. This text will not elaborate on paradoxes like these, but the thinking about nature presented here can be useful in continuing such discussions.



*Figure 3: Norwegian forests being transformed into roads and shopping malls along these roads.
Photo: Jarand Manum Bjerkan*

1. ARNE NÆSS, ECOSOPHY, AND DEEP ECOLOGY

Arne Næss (1912–2009) was one of the most important Norwegian intellectuals of the twentieth century. He studied philosophy, mathematics, and astronomy before completing his Dr.philos degree in philosophy at the University of Oslo where he, at the age of twenty-seven, became a professor of philosophy. Næss became a key figure in the development of environmental philosophy, linking this both to political discussions and to engagement and actions against building and construction destroying nature. At the age of fifty-eight, he quit his position at the university to give priority to activism and to work on theory and ideology for this. Some of his inspirations were Baruch Spinoza (1632–1677), Mahatma Gandhi (1869–1948), and Rachel Carson (1907–1964), the author of *Silent Spring*.¹³ Learning from Gandhi, Næss engaged in activism against the hydropower plants on the rivers Mardøla in 1970 and Alta in 1980–81, projects impacting nature on a large scale, the Alta dam also severely impacting the land of Indigenous people in Norway. One experience that Næss gained from this, was that activism, by initiating public awareness leading to political changes, can be highly useful despite in the first place seemingly failing by not hindering the project protested against. Throughout his long life, Næss attended discussions across disciplines with an attitude of curiosity and openness. Also in the role as an activist, he appeared kind rather than angry and dogmatic. This is nicely documented by the famous photo showing him smiling and calmly discussing with the police officers arresting him and carrying him away during the demonstration at Mardøla.¹⁴ Besides his academic career within the field later termed environmental philosophy, he was closely attached to nature also in his private life, enjoying life at his simple and fully 'off-grid' cabin Tvergastein in an extreme location at the mountain Hallingskarvet and being a pioneer of Norwegian mountaineering, leading several demanding climbs, including of Tirich Mir in the Himalayas in 1950. Through his works of philosophy and ecology and also by climbing and friendship, Arne Næss was closely linked to the philosophers Peters Wessel Zappfe (1899–1990) and Sigmund Kvaløy Sætereng (1934–2014).

Besides *En del elementære logisk emner*,¹⁵ which became highly influential by being compulsory reading for students at the University of Oslo for decades, a key publication by Næss is *Økologi, samfunn og livsstil*, later re-edited and translated into English and entitled *Ecology, Community and Lifestyle*.⁷ In this book, Næss presented his thoughts on nature and environment in the context

of logic and reasoning, and elaborated his philosophy into frameworks aimed at being applicable in politics and environmental activism.

Addressing nature from the approach of architecture and construction, three elements of the works of Næss that are relevant for thinking about impacts on nature can be pointed out. The first is his analyses of reasoning, which are about the links between overall norms and decisions about actions in real life. His analyses are useful both for understanding the limitations of science and for revealing biases in lobbyism and political rhetoric. The second, which is an application of the first, is the setup of norms and hypotheses identifying 'Ecosophy T' and the proceeding principles of 'Deep Ecology'. The third is his affinity to and identification with nature, in which he included personal and passionate identification also with non-living nature. As I will come back to later on, the first two are still useful in their original forms, whereas the third is an element of Næss's life and works that I think becomes more relevant for the challenges of today if being supplemented by thinking of nature along the lines suggested by Kinji Imanishi.

Reasoning Between Norms and Actions

Based on his studies of logic, Næss describes the connection between overall norms and actions in real life as a stepwise reasoning, which can be illustrated by a pyramid as shown in figure 4, and he applies this model to point out challenges of reasoning in science and politics.¹⁶ A downwards step in the pyramid represents articulation (or derivation) towards action, from theory to practice, while an upwards step represents questioning. Any step down from a norm to a hypothesis (or a statement) on the step below, includes interpretation and evaluation of some of the many possible aspects of the topic in question, and the conclusion (that is the hypothesis (or statement) one step down from the norm) depends on the aspects considered and the weight given to each of these aspects. In the sequence of reasoning, the hypothesis (or statement) at one step, works as a premise for the step below, one step closer to action.

For phenomena linked to real life, different sciences, due to their particular theories and methods, in different ways grasp some and not other aspects of the subject in question. Therefore, at any step of the pyramid between overall norm and actions, scholarly hypotheses (or statements) vary in accordance with the values that implicitly or explicitly characterize the particular

science.¹⁷ Therefore, depending on who the actors involved in the reasoning are, as well as on the interests and the relative powers of these actors, one particular overall norm may lead to very different actions.

Based on this model for describing reasoning, Næss argues that science, despite providing important knowledge, is insufficient as it does not include understandings and skills of the kinds arising from personal and direct experience of the issue in question. From this, he argues for diversity and openness in all respects, for being curious about the potential contributions from different sciences, for including understandings from elsewhere than scholarly disciplines, and for the importance of generalists.¹⁸

He further on criticizes politicians for editing the sequence of valuing across the steps of reasoning in order to conclude in some particular actions, while other actions would be equally reasonable if giving priority to other and, from other perspectives, equally relevant issues across the steps of reasoning from norm to action. By making biased statements through ‘the pyramid of reasoning,’ it is possible to mimic logical reasoning while, in practice, conclude with actions in direct conflict with the overall norm. When exemplifying this in the case of Norwegian economic policies of the 1970s, Næss describes the political reasoning as a pyramid without a mid-section, meaning that the statements addressing actions in the real world had lost logical connection with the overall norm.¹⁹

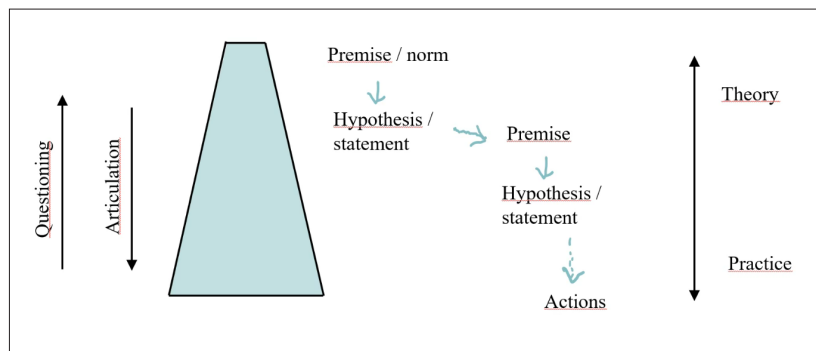


Figure 4: The pyramid of reasoning between norms and action according to Næss. Diagram: the author

The current construction of highways in Norway is a case of planning and construction where the pyramid model of Næss can be applied to identify biased reasoning resulting in actions in conflict with overall norms. Today, 'avoid climate change' is a statement shared across most political parties in Norway. Placing this in the pyramid of reasoning, it can be considered an overall norm. In accordance with UN sustainability goal number thirteen,²⁰ the hypotheses (or statements) 'reduce GHG emissions' and then in turn, 'reduce fossil fuel consumption' are derived. From this, the hypothesis (or: statement) 'choose electric cars' is derived.²¹ Electric cars are thus termed 'green mobility' or 'zero-emission-mobility'.²² Based on this, that is thinking of private cars as 'zero-emission mobility', road construction and private car driving, which are key elements in current development in Norwegian society, are easily seen as parts of 'the green shift'. In reality, the extensive current road construction in Norway is responsible for significant direct GHG emissions, while the cars, even the electric ones, cause GHG emissions due to their manufacturing and to their energy demand in use.²³ Additionally, the use of land for road construction implies altering large areas of our environment from nature to highways and fenced-in green-areas along these highways (see fig. 3). Given that 'green shift' should mean taking better care of nature, it is difficult to consider current road construction to be in line with any real green shift. Other examples of projects where biased reasoning linked to the 'green shift' can be revealed by taking a closer look at the steps of reasoning from norms to actions, are large building projects that are alleged to be sustainable while not seriously including reuse of existing buildings as an option, the electrification of the Norwegian oil and gas extraction industry, and 'zero-emissions airplanes'. In all these cases, architects, planners, designers, and engineers are in positions to reveal and correct biased reasoning. By using these roles to increase awareness of and give more value to nature, we can influence what is to be built and thereby also the impacts on nature.

'Ecosophy T' and 'Deep Ecology'

In accordance with his 'pyramid of reasoning', Næss formulated a set of norms and hypotheses of what he called 'an ecosophy'. By the term "ecosophy", he links his work to philosophy and positions himself in a broader context than 'ecology', which he considered too closely bound to the natural sciences. He further termed the framework 'Ecosophy T', where the T is said to be an abbreviation of the name of his cottage Tvergastein. By this, he identified 'Ecosophy T' as his own framework, indicating that others, based on their own personal knowledge and experience, are welcomed to formulate their

own versions of Ecosophy. The norms [N] and hypotheses [H] for 'Ecosophy T' are listed below.²⁴

N1: Self-realization!

H1: The higher the self-realization attained by anyone, the broader and deeper the identification with others.

H2: The higher the level of self-realization attained by anyone, the more its further increase depends upon the self-realization of others.

H3: The complete self-realization of any one depends on that of all.

N2: Self-realization for all living beings!

H4: Diversity of life increases self-realization potentials.

N3: Diversity of life!

H5: Complexity of life increases self-realization potentials.

N4: Complexity!

H6: The life resources of the Earth are limited.

H7: Symbiosis maximizes self-realization potentials under conditions of limited resources.

N5: Symbiosis!

To posit 'self-realization' as a primary norm might appear like a lightweight slogan. Proceeding the reasoning (see the list above) and stating that this self-realization counts not only for humans but also for other living beings (N2), Næss argues in favour of diversity (N3), complexity (N4), and symbiosis (N5), which, unlike egocentric self-realization, comprise care, mutuality, and shared responsibility for life and resources on Earth.

In the 1980s, Næss, together with George Sessions and others, developed the setup for an ecosophy into what they called the 'The Platform Principles of the Deep Ecology Movement' as listed below.²⁵

1. All living beings have intrinsic value.
2. The richness and diversity of life has intrinsic value.
3. Except to satisfy vital needs, humans do not have the right to reduce this diversity and richness.
4. It would be better for humans if there were fewer of them, and much better for other living creatures.
5. Today, the extent and nature of human interference in the various ecosystems is not sustainable, and the lack of sustainability is rising.

6. Decisive improvement requires considerable changes: social, economic, technological, and ideological.
7. An ideological change would essentially entail seeking a better quality of life rather than a raised standard of living.
8. Those who accept the aforementioned points are responsible for trying to contribute directly or indirectly to the realization of the necessary changes.

Similarly to Ecosophy versus ecology, 'deep' indicates that taking care of life on Earth requires more thorough and radical approaches than common or 'shallow ecology'. While ecology is generally regarded as a natural science,²⁶ Ecosophy, as well as Deep Ecology, is founded on a critique of the natural sciences for missing the value of the lives of nonhuman beings in themselves.²⁷

While rooted in Western philosophy, Arne Næss pointed out the need for broader approaches, approaches that may help us to grasp more aspects of nature and of life, to give more value to living beings besides us humans, and to grasp the interconnectivity of all living on Earth better than what we do

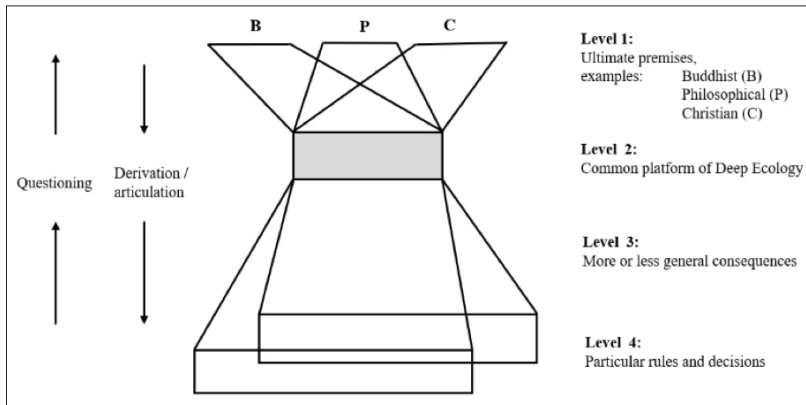


Figure 5: Næss's 'apron diagram' based on the pyramid of reasoning (fig. 4) and positioning Deep Ecology in a framework of reasoning between ultimate premises that may have different origins, and actions in terms of particular rules and decisions.²⁹ Diagram: the author

by common Western scientific traditions. Many of the statements defining Ecosophy and Deep Ecology are identical to key concepts in Eastern religion and philosophy. With the 'apron diagram' shown in figure 5, Næss positions the Deep Ecology platform within a broader framework of reasoning. The figure illustrates that the Deep Ecology platform is derived from and can be explained by the norms or ultimate premises of different cultures, where the cultures pointed out are Buddhism, Christianity, and philosophy. In the next section, presenting the works of Imanishi, we will see that Næss and Eastern thinking have several concepts in common.²⁸

These setups by Næss addressing Ecosophy and Deep Ecology, respectively, are scarcely referred to in discussions on sustainability in Norway. There might be several explanations for this. One is that Næss worked across disciplines and avoided to position himself within any particular established discipline. In accordance with this, the scholarly disciplines may in return see him as a generalist bridging different fields of knowledge rather than as a reference in the particular discipline. A second reason may be that several of his ideas have been absorbed in commonly accepted theories about sustainability and concern for nature and the environment, making it unnecessary to look back and trace links to Næss through formal references. However, as exemplified by the case of current highway construction and the 'green shift', looking into the works of Arne Næss in the original is still inspiring and useful.

Arne Næss and Identification with Nature

Arne Næss passionately identified himself with nature in many respects. In the 1930s, when he attended research on learning at the University of California, Berkeley, he reportedly found more interest in playing with the rats and studying the thinking of the researchers than vice versa. He also strongly identified with non-living nature. This is most recognizable when he describes Hallingskarvet, the monumental mountain range where his cabin is located, as his father. To understand this version of identifying with nature is challenging if not feeling at home in harsh mountains in winter, which may exclude people from identifying with some of Næss's thinking. Besides this, Næss' take on nature has at least two challenges today.

The first is about the addiction to 'wild nature' and human presence in this nature. During the fifty years since Næss wrote *Økologi, samfunn og livsstil*,

the amount of 'wild nature', or nature appearing somewhat undisturbed by human activities, has decreased dramatically, which might make care for 'wild nature' marginal compared with the need to care for all the 'no-longer-totally-wild nature'. Næss was very optimistic on behalf of the Norwegian tradition of simple leisure-life in nature, typically hiking and climbing and staying in a tent or in a simple cabin detached from technical infrastructure. What we see in Norway today, is a weekend and holiday culture very different from Næss's ideal of simple life in nature. Instead, we have a culture of extensive construction of single-family-house-like cabins and highways for travelling to these cabins, two phenomena that mutually enforce one another, and a leisure culture that, by its presence in nature and by all its indirect effects on nature, represents a key threat to the remaining pieces of nature not yet dominated by human activities. Contradictory to the ideals of Arne Næss, living and staying in city-like environments is likely more sustainable than suburban or rural life and leisure activities in nature.

The second challenge is about valuing nature. According to Næss, reasoning from norm to action implies choosing which aspects of the issue in question to consider and also what value to assign to these aspects.³⁰ Given that we should take more care of nature, what aspects of nature should we today care for the most? As pointed out by Hverven,³¹ Arne Næss's way of identifying with nature implies giving priority to the 'human-like aspects' of nature also when it comes to 'wild nature', while the most important elements of the remaining 'wild nature' (or: the remaining nature still not fully dominated by human activities) are its 'not-human-like aspects' of complexity, diversity, and synergies of life-forms beyond control of us humans.

To summarize the relevance of Næss today, this section has pointed out three elements of his work that are applicable for thinking about impacts on nature from the perspective of architecture and construction today. The two first, the elaborations of the role of values in reasoning and the principles of Ecosophy and Deep Ecology, are still relevant in their original forms as presented by Næss. The third one, the identification with nature, including the non-living nature and focussing on identification with the mountains, is still inspiring, but if we aim to increase the commitment to care for nature, this aspect of Næss's thinking can benefit from being supplemented with the more living-nature-focussed thinking of Imanishi.

2. KINJI IMANISHI AND 'NATURE AS THE WORLD OF LIVING THINGS'

Kinji Imanishi (1902–1992) was born in Kyoto, where he lived most of his life and had his academic career in biology, primatology, and anthropology. After studying agriculture and doing a PhD on mayflies in the rivers of Kyoto, he studied semiwild horses and Japanese monkeys as well as primates in other countries. Throughout his work, he was interested in the lives of living entities; he studied 'nonhuman societies' rather than looking at insects and animals from the traditional approaches of biology. When he, at the beginning of the Second World War, was called for duty in the Japanese army, he understood that his life and career might soon be over and decided to write down his main thoughts in what became the book entitled *Seibutsu no Sekai* (生物の世界), or *A Japanese View of Nature: The World of Living Things* when later translated into English.³² Luckily for Imanishi and for academia, he survived the war and was able to proceed with his scholarly work as well as having an exciting life besides this. Like Næss, Imanishi passionately enjoyed climbing. He founded the Academic Alpine Club of Kyoto and did numerous adventurous climbs, first in Japan, later in the Himalayas and Kenya. The key contents of *The World of the Living Things* can be regarded as threefold: the first is about 'the living thing' as an individual entity, the second about what is 'to live' or what it is 'to be alive', and the third about the individual living thing in relation to its species and its environment.

The 'Living Thing'

After studying insects and animals with great interest, Imanishi was convinced that traditional biology was insufficient for grasping the essence of life in nature. He criticized biology for missing the basics of what it means to be alive and stated that common biology was more about the dead than it was about the living. In line with and inspired by the thoughts on nature of Kitaro Nishida (1870–1945) who criticized science for fragmenting the world into parts and losing the whole,³³ Imanishi's concept of nature is about living things that are individual entities and at the same time united together into one. According to Imanishi, what characterizes a living thing, whether this living thing is a plant, an insect, or an animal, is not to be a unity of parts, nor to be a mechanism of cells, but to be a particular entity at a particular place at a particular time.³⁴ He describes an animal as a unified self, where the significance of the legs, mouth, and other parts cannot be properly understood without the parts being united in the inseparable whole of the animal.

³⁵ When we as humans recognize such a living thing, this is not a mechanical

process where we analyse the form and behaviour of what we have in front of us and from that deduct what kind of thing we see. What we do, is instead a simultaneous and relational act of perception of similarities and differences among things, and this is something we do intuitively as an inborn attribute of being humans. This is something that even a small child can do³⁶ and something humans did long before we discovered cells and atoms as parts that any living thing consists of.³⁷ A dead fish is still a fish, but it is not a 'living thing'. It is the dead body of a fish.³⁸

What is life, what is 'the living'?

Going into more detail, Imanishi describes a living thing as a complete entity with an external appearance that can be termed 'outer form', and an 'interior' with a particular order and arrangement that can be called 'inner form'.³⁹ He further introduces the terms 'structure' and 'function', where structure is the body, while function is the activity of being alive. Together, outer form and inner form are the structure of the living thing and inherit its particular function for life, and the structure and the function of a living thing are inseparable.

... living things, as they actually live, are neither existence with only structure, nor existence with only function. Structure and function are closely associated; they do not exist separately. Structure is nothing but for function and vice versa; such an existence is called a creature.⁴⁰

... living things exist with *body* and *life* as an inseparable set.⁴¹

While he focussed on the life of living things, Imanishi also ascribes life to non-living things; this is because what we know as living things have emerged from a world of non-living things, implying that the world of non-living things, in some way or another, contains the living things or at least holds the potential for living things to emerge from the non-living.⁴²

He further describes life as a process of growth and development of both structure and function and points out that this is a process where the living thing throughout its life, from being one cell to its death, and despite all cells during the lifetime of the living thing being replaced by other cells by exchange with the non-living world, is one entity, an entity in which all the cells together constitute a wholeness in terms of the body. For any living thing,

this growth and development is not random, but has a certain directedness that is inherent in the living thing, and the aim of the living thing is 'to live itself'.⁴³

... cells reproduce cells and individuals reproduce individuals such that they can be reconstituting elements of this world that create and maintain the world as it is. Living things maintain themselves and what is created in turn becomes a creator, if this process is called living, then living itself is the leading principle in this organic integrated body. In other word, for living things, to live itself must be the ultimate objective.⁴⁴

Imanishi thus identifies 'life' and 'to live' as a kind of nonconscious 'directedness' present in the entity, in the living thing. This holds true for a tree as well as for human beings. This description of the objective of life, or one could say the 'meaning of life', is close to what Næss points out as the need for self-realization for all living beings, formulated as a norm of Ecosophy T. (See the section about Næss above.)

The Environments and Societies of 'Living Things'

After elaborating on 'living things' and 'to live', Imanishi broadens the scope and sees the 'living thing' in relation to its species and its environment. The basis for this was his studies of the lives of insects and animals, in which he regarded animal societies as cultures. Unlike biological taxonomy, which looks for physical attributes to identify and distinguish species, he looked for patterns of living within a species. His studies can therefore be considered an 'anthropology of nonhuman societies'.

First, he points out the mutuality and contradictions between the life of the individual living thing and the life of its species. While the objective of a living thing is its particular life, its termination by death and being replaced by new generations are conditions for the life and development of its species. By this, the death of the individual living thing is inseparable from its species' life and evolution. The two, the living thing and its species, are inseparable, and in accordance with the nonduality of Eastern thinking⁹ Imanishi states that they are one.

He then describes how the living thing is also united with its surroundings or its environment, an environment that includes both the living and the non-living and in which the society within a species is a key element. Accord-

ing to Imanishi, the environment for a living thing is not a particular area or space, it is a selection of adjacent non-living things and living things, a selection particular to each individual living thing. When eating, a living thing concretely brings the environment into itself. Food is the environment that becomes part of living things. Hence, eating can be regarded as the environment being assimilated by the living thing, and the environment can be seen as an extension of the living thing. The environment could thus also be termed the living thing's 'field of living'.

The environment for a living thing is such that the organism's recognition of the environment is to recognize what is necessary for life.⁴⁵

To something making a living, the distinction between subject versus object, or self versus the outside world, is not so important as we expect. ... the environment is nothing but the world of the living thing, there it finds its subsistence and it could as well be called its field of living.⁴⁶

Through its physical presence in space and time, a living thing is an entity that negates other living things from occupying the same place at the same time. This is not the case for the living thing's 'field of living'. Instead, for different living things, the 'fields of living' overlap and do so in complex patterns of interdependencies. Since individuals of the same species share interests regarding food, climate, breeding within the species, and protection from the same enemies, their preferred 'fields of living' include the same elements of the environment, and they therefore tend to gather in societies in places where the environment possesses these elements. ('The environment' here consists of living as well as non-living things.) Across different species, even when living in the same physical area, the 'fields of living' differ; different species living in the same area, share some elements of the environment, while other elements of the same environment are included in the 'field of living' of some species while not in the 'field of living' of other species. By symbioses and interdependencies between the 'fields of living' of all living things and of all different species, nature on Earth is connected into one thing.

When Imanishi in the final section titled 'On History' addresses species, he is critical about evolution being driven primarily by the fittest in natural selection as stated by Darwin. Imanishi argues that the evolution of species is

about the development of a 'directedness' of the average of the diversity present in the entire species as a society of mutually dependent individuals, rather than being driven by selection of a more fit individual occurring at random.⁴⁷ This critique has parallels to remarks by Næss on the importance of symbioses and mutuality for nonhuman life-forms, a part of Næss's critique of social Darwinism that first misinterpret nonhuman lives as being characterized by violence and then legitimate conflicts and the ideal of the survival of the fittest in numerous domains.⁴⁸

The Value of a Life – The Value of a 'Living Thing'

A key element in Næss's critique of science and politics concerns the role of values in reasoning. (See the section about Næss above.) When following contemporary discussions on building and construction projects being in conflict with care for nature, and also seeing what is built, it must be stated that current practice of valuing nature does not serve nature well. In Norway, the planning and design behind any project like those shown in figures 2 and 3, include reports about negative impacts on nature, but these concerns are not given sufficient value to hinder the current rapid loss of nature caused by building and construction. Following the reasoning of Næss, for something to be cared for by actions in real life, this something must be sufficiently valued throughout the process of reasoning from norm to action. To achieve the required change in favour of nature, we must therefore ascribe more value to nature in itself.⁴⁹

To illustrate how thinking about nature in contemporary building and construction practice assigns little value to nature in itself, it can be useful to pay some attention to the practice of 'compensating actions',⁵⁰ which is an approach to justify buildings and infrastructure destroying a particular piece of nature. In simplistic versions, 'compensating action' implies that demolishing nature at one place can be compensated for by planting trees somewhere else. The reasoning behind such 'compensating actions' is to accept the termination of some specific lives and compensate for this by supporting other lives to develop. Despite being commonly accepted and at first glance making sense, further consideration reveals that this logic ascribes little value to nature in itself, or if put in Imanishi's terms: it reveals that we assign little value to nonhuman living things living their particular lives and having the opportunity to proceed these lives as individual entities that are parts of complex systems in synergies, and as individuals in relation to their species

in evolution. This point becomes clear if we imagine the logic of ‘compensating actions’ applied in the case of human beings. All over the world, with the exceptions of wars, there is a consensus that we shall not kill; that people who are alive have the right to continue their particular lives, and that we as individuals as well as societies and nations have obligations and responsibilities regarding other people’s lives not to be terminated. When human lives are in danger, such as miners being trapped in a collapsed mine or tourists being lost in the mountains in a winter storm, huge efforts are made to save the particular persons’ lives; to help the life of those under threat to proceed rather than being terminated. If we instead choose to follow the logic of ‘compensating actions’ that we consider fair vis-à-vis nonhuman beings, we could imagine letting the miners perish in their collapsed mine and use the cost of rescue operations to support other people in having more children, and the same for the cost of searching for tourists in the mountains. The reason why such compensating actions are unacceptable in the case of humans, is the value that we ascribe to the life of each human being as a particular living entity; we consider a human being a living thing with its individual right to continue and develop its particular life, and we as other human beings and as society have and feel obligations and responsibilities to support this particular life. One lost human life is one lost human life. In the case of humans, killing one in combination with making one new life is not regarded as minus one life plus one life being equal to no change. Our valuing of nonhuman lives in the case of building and construction is thus fundamentally different from how we think about the lives of humans. To assign value to life in nature more similarly to how we think of humans, would provide a foundation for caring more for nature.

Some of the originality of both Næss and Imanishi lies precisely in this; in thinking about life in nature more similarly to how we usually think of humans, even though they address this slightly differently. While Næss argues for identification with nature in a very broad sense and personally identifies with nature even in the case of harsh mountains in winter, Imanishi approaches the issue by first pointing out the individual ‘living thing’ as a particular and living ‘self’ and proceeds by elaborating on nature as the world of these individual ‘living things’ living together in societies that in mutual interconnectivity with other societies of ‘living things’ constitute life on Earth as one thing. For experiencing and identifying with nature, which according to Næss is key to ascribing value to nature in itself, Imanishi’s take, starting

from the individual 'living thing' and what it means to be alive, is eye-opening and inspiring. By specifying 'the living things' and 'the living things' field of living' and, in accordance with Japanese philosophy, both distinguishing and uniting 'the living things' and 'the living things' field of living', Imanishi has provided terms and concepts that are more applicable for raising concern for life in nature in discussions about architecture and in designing architecture than Næss's more general approach of identifying with nature at all.

3. NATURE, 'LIVING THINGS', AND ARCHITECTURE

To summarize the thoughts about nature presented in this text into some points applicable for architects, I will first, with reference to Næss, remind about the potential contribution of architects due to our roles in the processes of building and construction. Then, after pointing out some characteristics of architectural design, I will suggest how the concepts of Imanishi can be applied to thinking about nature in the processes of architectural design.

As argued in the introduction, architects and engineers have particular responsibilities for the impacts on nature from building and construction, and for two reasons: one is that architects and engineers are the professions that design what is to be built, the other, and this applies especially to architects, is that we participate in many phases of the planning and design processes, from early conceptual ideas to the completion of construction. According to Næss and his pyramid model of reasoning from overall norms to actions, this provides potentials to contribute to caring for nature not only at a particular step in the development of a project, but throughout the process until the project is built and the impacts on nature are fully carried out. By possessing roles that allow for contributing to awareness of nature and ascribing value to nature across the many steps from conceptual ideas to actions in terms of building construction, architects have particular opportunities to make a difference in favour of nature.

The demands, requests, and wishes for a building are numerous and often contradictory, and the planning and design involve many disciplines. A task assigned to architects in particular, is to bring everything together in the form of a site-specific proposal for a building. The core of architectural design is therefore to develop a proposal for a building on a particular site, a building not known in advance and preferably becoming appreciated for being useful, meaningful, beautiful, or otherwise interesting; architecture is about

making building proposals that respond to context-specific conditions and opportunities. Here at end of this text, with the aim of inspiring to architecture in favour of life in nature, I suggest a way to think about nature along the lines of Imanishi in architectural design and exemplify this by some projects that in different ways have paid particular attention to nature.

I initially described five kinds of connections between architecture and nature. Of them, the most direct relationship between architecture and nature is about land use, including the detailed layout of the building on its plot (number ii of the five kinds). In a particular case of architectural design of a building on a plot, which often involves to rearrange the entire land of the plot, the impacts on nature can be addressed by thinking of the plot by a 'two-step approach' that applies Imanishi's concepts of 'living things' and 'living things' field of living'.

The first is to think of '*the living things on the plot*': What 'living things' are present on the plot, and how might alternative versions of the project impact them? At worst, the project demolishes the entire nature on the plot, which often is the case. At best, the project supports nature to develop in diversity and complexity.⁵¹ One example of thinking of particular 'living things' on the site and also making this into a key element of the architectural concept, is the project Sohlbergplassen (fig. 1). Retaining the trees was chosen as a condition for the design, subsequently determining the shape and positions of openings and curvatures, which are key architectural characteristics of the project. The second is to think in terms of '*fields of living*'. This implies to see the plot as the 'field of living' not only of the 'living things' present on the site (such as in the case of trees at Sohlbergplassen), but also, and often more importantly, to see the plot as a part of the 'fields of living' for 'living things' that usually spend their time elsewhere than on the plot. The latter may be anyone from a bumblebee visiting the site to collect nectar from a flower, a hedgehog catching a mouse, a deer passing through the plot on the way to its favourite grassland, or a bird having a light meal of insects and resting safely in a big tree. Common actions of gardening like fencing a plot or cutting a tree thus impact the lives of nonhuman beings far beyond the particular plot.⁵²

In the case of the building Atelier Tenjinyama by Ikimono Architects, the only area of land where the building neglects nature, is the foundations of the outer walls (see fig. 6 b). The floor is soil, which allows trees to grow naturally

inside the house. Regarding the potential for building plots to be ‘field of living’ for living things also from outside the plot, birds regularly nest in the largest of the indoor trees in this building.⁵³ Another project that pays particular attention to the plot as ‘field of living’ is the Akeno Raised Floor House by Fuminori Nousaku Architects (see fig. 7). By means of innovative foundations constructed by slender steel-plates standing on gravel instead of concrete, the entire fertile layer of soil on the site is kept alive.⁵⁴

The twofold approach just described, which is thinking of the building plot by seeing nature as (I) ‘living things’ and (II) ‘living things’ field of living’, is also relevant for large-scale projects. In the case of highways, the construction first impacts nature by terminating the lives of all ‘living things’ at the large areas of nature destroyed for becoming roads. Then, and this may damage life in nature even more, highways, by their physical presence and by their traffic, become barriers that fragment and limit the ‘field of living’ for innumerable ‘living things.’⁵⁵

Besides land use (type ii in my list of links between architecture and nature), also building materials (type i in the list) have huge and direct impacts on nature. Fuminori Nousaku suggests what he calls a ‘multi-sited mentality’.⁵⁶ By this, he means to extend architects’ concern for the building site to include not only the plot on which the building is placed, but also the many other sites



Figures 6 a and 6 b: Atelier Tenjinyama, office of Ikimono Architects, Arch: Ikimono Architects (2011)
a (left): South facade. Photo: the author, b (right): Section drawing: Ikimono Architects

that are impacted by what is built, such as the forests from which the trees for wooden cladding are cut, the factory sites where building components are produced, as well as other places where the materials that eventually become the building are extracted and processed. By this way of tracing the building materials back to their sites of origin and production, thinking of nature as ‘living things’ and ‘fields of living’ as described above, can be applied to ascribe value to the local as well as remote nature impacted by the design choices that determine kinds and amounts of building materials used in a particular building.

Thinking of architecture and nature from partly an Eastern perspective, which is the framing of this article, one approach worth mentioning is *Satoyama*.⁵⁷ *Satoyama* is a term for the landscapes of traditional Japanese villages, where farmland is woven into the natural landscape by terraced rice fields providing irrigation and at the same time serving as flood protection, and where the forests used for wood-coppicing provided energy for cooking and heating. The wetland of the rice fields together with the cultivated nearby forests

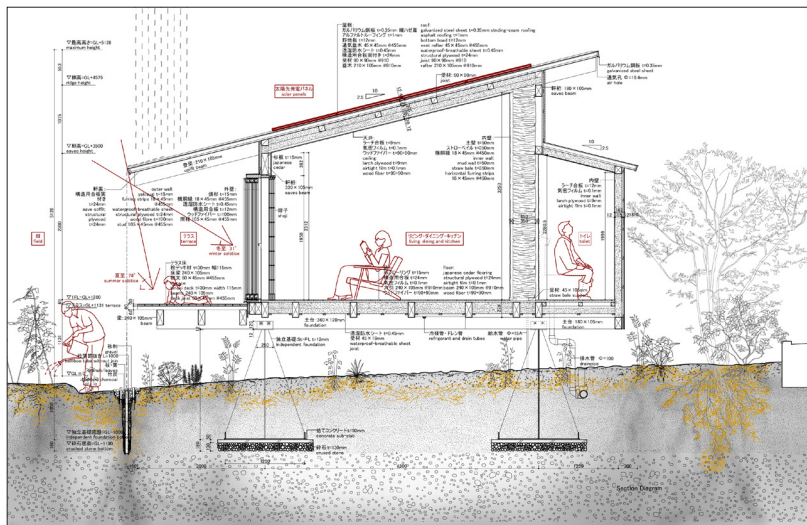


Figure 7: Akeno Raised Floor House, Fuminori Nousaku Architects (2021). Drawing: @HOLES / m.tsuneyama@studio-mnm.com

resulted in a rural landscape that served people's needs while also having extensive biodiversity.⁵⁸ In the Okagami Winery Village Project (fig. 8), Nori Architects applied knowledge about *Satoyama* when planning and designing the plot and the buildings for a winery based on local grape production.

Besides the wine production facilities, the project includes a store, café, workshop, coworking spaces, and rental houses. The buildings are inspired by traditional Japanese carpentry and timber construction, and the farming activities are based on traditional methods using organic materials that ensures healthy air and water flows underground, thus benefitting living things on and around the site and likely also influencing the quality of the wine to be produced on the site. The project is now (in 2026) under construction.⁵⁹ Besides caring for nature on the specific sites, the design of the projects showed in figures 6 to 8 are guided by care for nature as 'multiple sites' in the meaning that choice of building materials, ways of construction, and many other aspects of the architectural design are carried out with care for nature



Figure 8: Okagami Winery Village Project, Okagami, Japan. Nori Architects
Model photo from the exhibition *Towards an Architecture with Nature: Norihisa Kawashima Exhibition*
| Works by Nori Architects + Meiji University Nori Laboratory. Prismic Gallery, Tokyo, 2023
Model: Nori Architects. Photo: the author

in other places than only the building plot. In some cases, such choices are based on general knowledge, such as using timber instead of concrete, and reducing energy demands for cooling as well for heating by layouts letting sunshine in during winter, but offering shade from the sun in summer. In other cases, it is about issues very specific to the design task. One example of the latter is the Morinha Office Building designed by Tsubame Architects. By combining traditional knowledge and innovation, local industry and crafts in Hida Furukawa make business out of ‘non-industrial forestry’ that uses local timber from naturally growing forests where the trees usually are too curved to be efficiently handled by industrial sawmills. Since the timber anyway is unsuitable for long structural elements, the logs are in the forest cut into pieces of about three meters in length. This allows for handling and transportation by lighter vehicles than in the case of regular forestry, which reduces the impacts on the landscape. After being sawn in thicknesses appropriate for various kinds of woodworks, the materials are dried and sold for further manufacturing. Due to the high quality wood, the materials are particularly



Figure 9: Morinha Office Building, Hida Furukawa, Tsubame Architects (2022). Photo: the author

attractive for furniture. Though achieving a higher price per volume of wood than for common timber, the business is profitable despite the extra work per volume of timber. By furniture manufacturers in the next step making high quality products made in Japan from Japanese materials, there are mutual



Figure 10: Morinha Office, wall and roof structure. Photo: Mooto Chiba, Tsubame Architects

benefits along the entire chain from the cutting of trees in the forests to the manufacturing and retail of furniture (see fig. 12).



Figure 11: Morinha Office, sawdust insulation. Photo: the author

In the office building (figs. 9–11), a large share of the wood elements is made from local timber. The structural members are less manufactured than usual (they are not sawn into rectangular cross sections), giving an interesting ‘tree like appearance’ (fig. 10), and the insulation is sawdust from the sawing and planing in the adjacent sawmill (fig. 11). The office building along with the business and the crafting of the wood all the way from the trees in the forest to high-end furniture are all elements in an innovative sort of contemporary *Satoyama*.

Regardless of the scale and sorts of buildings and infrastructure, architects and engineers are in positions planning and designing the proposals for what to build. As just shown by the example of furniture (fig. 12), we can also include the professions involved in designing artefacts smaller than buildings. The more we all understand nature and the better we include this understanding when we develop and evaluate proposals for projects, buildings, and products, the better we can contribute to development in favour of life in nature. To summarize the relevance of Næss and Imanishi for this, the work of Næss on values in reasoning and on the importance of ‘self-realization for all’



Figure 12: HIDA Furniture Shop, Shinsakae, Nagoya (2025). Photo: the author

and thereby diversity and synergy, is a useful framework for thinking about nature from the perspective of architecture and construction; for revealing biased reasoning in discussions on impacts on nature, and for helping us to give more priority to nature. What is key to giving priority to nature is to value life in nature in itself, which means valuing nonhuman living things for simply being alive. To do so, it is useful to supplement Næss' identification with 'nature at all' with thinking of nature as the 'world of living things' as elaborated by Imanishi.

To see nature as 'living things' and think of land and building sites as 'fields of living' for 'living things', provides an awareness of nature that can help us to improve conditions for life in nature when we influence nature through planning and design. For architectural design practice, this concerns the disposition of buildings on plots of land, the kinds and amounts of building materials and where these materials come from, and the habits and lifestyles supported or hindered by what we build. For large-scale projects, where the 'green shift' has become a common argument for diminishing nature, it is about bringing real concern for life in nature into the agenda and ensuring that value is ascribed to nature in the discussions and evaluations leading to actions of building and construction. Across all scales of building and construction, we can improve the conditions for the diversity of future living on Earth through awareness and care for nature when planning and designing where, what, and how to build.

NOTES

¹ Gro Harlem Brundtland, *Vår felles framtid* (Oslo: Tiden Norsk Forlag, 1987). In English: *Our Common Future* (Oxford: Oxford University Press, 1987).

² IPCC, 'Climate Change: The IPCC 1990 and 1992 Assessments' (1992).

³ 'The biosphere, upon which humanity as a whole depends, is being altered to an unparalleled degree across all spatial scales. Biodiversity – the diversity within species, between species and of ecosystems – is declining faster than at any time in human history.' IPBES, *Global assessment report of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*, ed. E.S. Brondizio, J. Settele, S. Díaz, et al. (Bonn: IPBES secretariat, 2019), p. 10.

⁴ IPCC, 'Sixth Assessment Report, Synthesis Report' (2023).

⁵ In Norwegian: Miljøverndepartementet. Since 2014: Klima og miljødepartementet.

⁶ Timothy Morton comments on the problem of the responsibility of the individual human by the example of private car driving: 'While car driving is a substantial contributor to global warming, me driving my car or not, makes no difference.' Timothy Morton, *All Art is Ecological* (Dublin: Pinguin Books, 2018), p. 24. Our problem regarding how to act wisely in the Anthropocene is the 'non-oneness of humanity'; '... there has never been a one "we" of humans.' Dipesh Chakrabarty, *One Planet, Many Worlds: The Climate Parallax* (Waltham, MA: Brandeis University Press, 2023), pp. 14, 78.

⁷ The 1971 first edition of this book was titled *Økologi og filosofi*. In 1974, it was extended and titled *Økologi, samfunn og livsstil*. The editions referred to in this text are Arne Næss, *Økologi, samfunn og livsstil* (Oslo: De norske bokklubbene, 1999) and the English edition, Arne Næss, *Ecology, Community and Lifestyle: Outline of an Ecosophy*, trans. David Rothenberg (Cambridge: Cambridge University Press, 1991).

⁸ For an overview of thinking about nature from the approach of Western philosophy, see Arne Johan Vetlesen, *Animal Lives and Why They Matter* (London: Routledge, 2022).

⁹ 'Nonduality' is a key topic in studies on the originality of Japanese thinking. On the philosophy of Kitaro Nishida, see for instance Gereon Kopf, 'Between Identity and Difference: Three Ways of Reading Nishida's Non-Dualism', *Japanese Journal of Religious Studies* 31, no. 1 (2004), pp. 73–103. In a paper addressing the need for unitary concepts of nature in the field of landscape architecture (unitary concepts as opposed to traditional Western dualism), Martin Prominski points out that Japanese anthropologists are particularly relevant, and presents the two scholars Kinji Imanishi and Tetsuro Watsuji. Martin Prominski, 'Andscapes: Concepts of nature and culture for landscape architecture in the Anthropocene', *Journal of Landscape Architecture* 1 (2014), pp. 6–19. For more on the writings of Watsuji, see for instance Erin McCarthy, 'Watsuji Tetsurō: The Mutuality of Climate and Culture and an Ethics of Betweenness', in Bret W. Davis, ed., *The Oxford Handbook of Japanese Philosophy* (Oxford: Oxford University Press, 2017), pp. 503–22; and David W. Johnson, *Watsuji on Nature: Japanese Philosophy in the Wake of Heidegger* (Evanston, IL: Northwestern University Press, 2019). Inspired by and also criticizing Heidegger (1889–1976), Watsuji elaborated on mutuality between place and culture and between individuals and culture, and presented thoughts about place, nature, and architecture that have much in common with the later 'Genius Loci' theory of the Norwegian architectural theorist Christian Norberg-Schultz (1926–2000).

¹⁰ The Kyoto School of Philosophy is a term used for a Kyoto-based group of scholars including Kitaro Nishida (1870–1945), Hajime Tanabe (1885–1962), Keiji Nishitani (1900–1990), Tetsuro Watsuji (1889–1960), and Kiyoshi Miki (1897–1945).

¹¹ Regarding the role of humans in relation to nature in the Anthropocene, Masatake Shinohara, a philosopher at Kyoto University who has worked with contemporary Japanese architects in several projects, argues that the emerging environmental crisis of the Anthropocene forces us humans to realize that we are integrated in and inseparable from an unstable world

beyond our control. Masatake Shinohara, 'Rethinking the Human Condition in the Ecological Collapse', *The New Centennial Review* 20, no. 2 (2020), pp. 177–203. See also Morton, *All Art Is Ecological* and *Hyperobjects: Philosophy and Ecology After the End of the World* (Minnesota: University of Minnesota Press, 2013), and Chakrabarty, *One Planet, Many Worlds*.

¹² For the same motif by Sohlberg, see <https://www.nasjonalnmuseet.no/samlingen/objekt/NG.M.01185> [all URLs here accessed in January 2026].

¹³ Rachel Carson, *Silent Spring* (Greenwich, CT: Fawcett Publications, Inc., 1962).

¹⁴ For the photo by Leif Magne Flemmen, see for instance David Rothenberg, *Arne Næss. Gjør det vondt å tenke?* (Oslo: Dreyer, 1999).

¹⁵ Arne Næss, *En del elementære logiske emner* (Oslo: Universitetsforlaget, 1947).

¹⁶ Arne Næss, *Økologi, samfunn og livsstil*, pp. 99–102.

¹⁷ Næss, *Økologi, samfunn og livsstil*, p. 26.

¹⁸ Næss, *Økologi, samfunn og livsstil*, pp. 28–60.

¹⁹ Næss, *Økologi, samfunn og livsstil*, p. 100.

²⁰ United Nations, 'THE 17 GOALS', <https://sdgs.un.org/goals>

²¹ Which can be seriously questioned unless specifying the conditions for driving electric cars to reduce fossil fuel consumption, for instance: Does the electric car replace the same distance driven by a fossil fuel car, or does it replace walking, commuting by bike, or public transport?

²² Which is a step including multiple biased simplifications, for instance regarding the energy mix behind producing electricity and for neither including the impacts from car manufacturing nor from the construction and maintenance of roads.

²³ Emissions from an electric car are typically lower than from a fossil fuel car, but they are far from zero. For more on this, see Johannes Buberger, et al. 'Total CO₂-equivalent life-cycle emissions from commercially available passenger cars', *Renewable and Sustainable Energy Reviews* 159 (2022), and Lola Rousseau et al., 'Norway's Electric Vehicle Revolution: Unveiling Greenhouse Gas Emissions Reduction and Material Use of Passenger Cars across Space and Time', *Environmental Research Letters* 20, no. 8 (2025).

²⁴ This version in English by Alan Drengson, 'The Life and Work of Arne Naess: An Appreciative Overview', *The Trumpeter* 21, no. 1 (2005), p. 37.

²⁵ Originally presented by Arne Næss and George Session, 'Basic Principles of Deep Ecology', *The Trumpeter* 3 no. 4, (1986), p. 14, and later modified in several versions. This version is from Drengson, 'The Life and Work of Arne Naess', p. 31.

²⁶ Ecology is commonly defined as a natural science, as a branch of biology that studies life-forms in nature and their conditions: 'Ecology is the scientific study of the interactions that determine the distribution and abundance of organisms.' Charles J. Krebs, *Ecology: The Experimental Analysis of Distribution and Abundance* (Essex: Pearson Education Limited, 2014), p. 14.

²⁷ A contemporary scholar who addresses the limitations of science for understanding life in nature is Timothy Morton, stating for instance: 'The more data we have about lifeforms, the more we realize we can never truly know them' (Morton, *Hyperobjects*, p. 56). He criticizes sciences dealing with the environment for ignoring the *quality* of living for nonhuman lifeforms (Morton, *All Art is Ecological*, p. 48), and he argues for an 'ecological awareness' based on 'intimacy' with nonhuman lifeforms (Morton, *Hyperobjects*, p. 139).

²⁸ Besides the similarity to Imanishi in the thinking about nature, there is also an interesting correspondence between Næss and Watsuji in their thinking about 'betweenness', stating that connections between things are more important than the things in themselves. See Næss, *Økologi, samfunn og livsstil*, p. 44, and McCarthy, 'Watsuji Tetsurō', pp. 503–22.

²⁹ The figure exists in different versions. This version is based on David R. Keller, 'Deep Ecology', in John Baird Callicott and Robert Frodeman, eds., *Encyclopedia of Environmental Ethics and Philosophy*, vol. 2 (Farmington Hills, MI: Gale Cengage / Macmillan Reference USA, 2008), pp. 206–11, fig.1, p. 208.

³⁰ Næss, *Økologi, samfunn og livsstil*, pp. 26, 64–70.

³¹ Sigurd Hverven, *Ville verdier* (Oslo: Dreyer, 2023), p. 118.

³² Kinji Imanishi, *A Japanese View of Nature: The World of Living Things*, ed., Pamela J. Asquith (New York: Routledge Curzon, 2002). Japanese original: *Seibutsu no Sekai* (1941).

³³ 'The world described by physicists, like a line without width and a plane without thickness, is not something that actually exists. In this respect, it is the artist, not the scholar, who arrives at the true nature of reality.' Kitaro Nishida, *An Inquiry into the Good* (New Haven and London: Yale University Press, 1990), p. 49.

³⁴ Imanishi, *The World of Living Things*, p.17.

³⁵ Imanishi, *The World of Living Things*, p. xxxvi.

³⁶ Imanishi, *The World of Living Things*, pp. 3–4.

³⁷ Imanishi, *The World of Living Things*, p. 10.

³⁸ My extract of Imanishi's elaborations on 'structure'. Imanishi, *The World of Living Things*, pp. 12–13.

³⁹ Imanishi, *The World of Living Things*, p. 11. This distinction between 'inner form' and 'outer form' is an interesting parallel to the concept of Bötticher (1806–1889) regarding 'Kunstform' versus 'Kernform' in architecture. Karl Bötticher, *Die Tektonik Der Hellenen* (Berlin: Ernst & Korn, 1874); Bendik Manum and Dag Nilsen, 'Engineers and the Role of Structures in Architecture', in Paulo J. S. Cruz, ed., *Structures and Architecture* (Boca Raton, FL: CRC Press, 2013), pp. 1727–734.

⁴⁰ Imanishi, *The World of Living Things*, p. 14.

⁴¹ Imanishi, *The World of Living Things*, p. 17, italics by the author.

⁴² Imanishi, *The World of Living Things*, pp. 7, 19–20.

⁴³ The description of life as a 'directedness' of the individual living thing is very similar to what the Indigenous Potawatomi people who lived around the Great Lakes termed 'Puhpowee', a term translated into English as 'the force which causes mushrooms to push up from earth overnight'. Robin Wall Kimmerer, a biologist and member of the Potawatomi people, was astonished when she learned about this word in her own language and writes: 'In the three syllables of this new word I could see ... the formulation of a theory for which English has no equivalent. The makers of this word understood a world of being, full of unseen energy that animates everything.' From Chakrabarty, *One Planet, Many Worlds*, p. 104, referencing Robin Wall Kimmerer, *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teaching of Plants* (Minneapolis: Milkweed Editions, 2013), p. 101.

⁴⁴ Imanishi, *The World of Living Things*, p. 25.

⁴⁵ Imanishi, *The World of Living Things*, p. 26.

⁴⁶ Imanishi, *The World of Living Things*, p. 27.

⁴⁷ Imanishi, *The World of Living Things*, pp. 72–76.

⁴⁸ Næss, *Økologi, samfunn og livsstil*, pp. 327–28. Contemporary evolutionary biology defines natural selection as differences in reproduction between individuals in a population of a species. Those better adapted to their environment will be favoured by leaving a higher rate of offspring in the next generation. Douglas J. Futuyma, *Evolution* (Sunderland, MA: Sinauer Associates, 2005.) The role of random mutations versus the role of mutuality and diversity in the evolution of the species is an interesting topic not followed up on here. In the framework of the contemporary state of politics and power around the world, it is worth noticing that the strong conquering the weaker is far from the sole explanation of the development of life on Earth.

⁴⁹ How to assess value to nature is an issue in any model aiming to include the impact on nature in evaluations of building and construction projects. One approach to this, is to regard nature as 'ecosystem services', extending the utility of nature to include human wellbeing, health, and recreation, and assigning monetary value to this. While this may increase care for nature in practice, it does not solve the problem of the value of nature being ascribed only to those aspects of nature that directly favour or disfavour humans. The method does not work well for assigning value to the lives in unpolluted deep Norwegian fjords or to biodiversity in forests not attractive for recreation or tourism. For more on this, see Hverven, *Ville verdier*. A way to overcome this, is to value life in nature in itself, regardless of its utility for humans, as argued for by Næss, Vetlesen, Hverven, and many others. See Næss, *Økologi, samfunn og livsstil*; Vetlesen, *Animal Lives and Why They Matter*; and Hverven, *Ville verdier* and *Naturfilosofi* (Oslo: Dreyer, 2018). An alternative approach suggested by Morton in *All Art is Ecological*, p.103, is 'indifference' in the meaning of 'not caring'; we care too much, we should instead let life in nature simply be and allow things to exist for no reason. The latter represents an interesting critique of landscape architecture and gardening that will not be followed up on here.

⁵⁰ In Norwegian: 'kompenserende tiltak'.

⁵¹ One example is landfills returned to nature, such as Freshkills Park, the largest landfill in New York, a project that was exhibited in the exhibition *Mierle Laderman Ukeles on (Re)Imagining Freshkills Park*, MoMA, New York, 2023. See <https://www.moma.org/magazine/articles/925>.

⁵² For this 'thinking of nature' to make a difference from common practice, the thinking must imply paying serious attention to nature. Thinking about a tree regarding whether to cut it down or not, must encompass more than considerations about the effects on views from inside the house and shade in the garden. How far-reaching or how in-depth to proceed on this, is a question of knowledge and interests. It is possible to include the myriad insects living in the tree, insects that spend their lives there and at the same time provide food for larger insects and birds (or 'insects becoming the bird' or 'insect and bird becoming nature as one thing', according to Imanishi, *The World of Living Things*, p. 54), but less detailed considerations can also make a difference. Any increased awareness along these lines of Imanishi will likely help to ascribe more value to the tree, both for the value of the life of the tree itself (How old is that tree? Maybe more than two hundred years? How old can it become?) and for the value of the tree as part of the 'fields of living' for insects and birds, which are all in the tree for their respective good reasons. A slight increase in the values ascribed to the lives of living things, can alter the final actions to favour nature.

⁵³ For a further description of the project, see 'Atelier Tenjinyama / Ikimono Architects', *ArchDaily*, 27 June 2011, <https://www.archdaily.com/145462/atelier-tenjinyama-ikimono-architects>.

⁵⁴ The Akeno Raised Floor House is a result of paying attention to nature in numerous respects, including shape of building, technical equipment, and building materials. For more on this and

other works by Fuminori Nousaku and Mio Tsuneyama, see Fuminori Nousaku, *Edifice of the Wild* (Tokyo: LIXIL Publishing, 2021). See also the websites of Fuminori Nousaku Architects: <http://fuminori-nousaku.site/>, the exhibition at TOTO Gallery, Tokyo, 2024: https://jp.toto.com/gallerma/ex240118/index_e.htm; and the exhibition at AA, London, 2025: <https://www.aaschool.ac.uk/publicprogramme/whatson/urban-fungus-architecture-is-a-complex-mesh>.

⁵⁵ The diversity of life in nature, and particularly the likeliness of the existence of larger animals, does not rely solely on the total amount of land available for the species (land being available by not being damaged by humans to too great an extent), but also very much on the size of *continuous* parcels of such land. For more on this, see the section 'Island on Dry Land' in Elisabeth Kolbert, *The Sixth Extinction: An Unnatural History* (Dublin: Bloomsbury Publishing, 2014), pp. 173–92). In Norway, the wild reindeer is a species particularly vulnerable to having its habitats being fragmented by roads or even by paths.

⁵⁶ Nousaku, *Edifice of the Wild*, p. 69.

⁵⁷ The word *Satoyama* (里山) derives from *yamasato* or *yamazato*, meaning mountain-village, (*yama* (山): mountain, and *sato* (里): village).

⁵⁸ Kazuhiko Takeuchi, ed., *Satoyama: The Traditional Rural Landscape of Japan* (Tokyo: Springer, 2003).

⁵⁹ For more on the works and ideology of Nori Architects, see <http://norihisakawashima.jp/>, and Gro Lauvland, *Nagoya Satoyama: The Interactions Between Humans and Nature. A Conversation with Architect Nori Kawashima* (Trondheim: NTNU, 2025).

EXPLORING EMBEDDED HERITAGE KNOWLEDGE AND ITS ROLE IN THE DEVELOPMENT OF PLACE QUALITY

Vignir Freyr Helgason

ABSTRACT

The municipality of Lørenskog, adjacent to the Norwegian capital, Oslo, has undergone an extensive transformation from a landscape characterized by farming to an area with an increasingly urbanized one. The development processes, which have intensified since the 1980s, have influenced the inhabitants' experience of place identity, leading to a demand for a halt in development. The article questions an urban-centred understanding of place qualities in planning and traditional approaches to managing cultural heritage, which may overlook a deeper and more intricate relationship between heritage, landscapes, and the inhabitants. The following question is thus explored: How can inhabitants' experiences inform our understanding of cultural heritage and its relation to place quality and place identity? The article presents a case study of heritage management, as well as urban planning and development processes. A transdisciplinary approach is adopted to explore and discuss the inhabitants' relationally embodied and embedded heritage experiences. The methods include qualitative interviews and mapping activities conducted with inhabitants of Lørenskog, in a collaboration between researchers, the local planning authority, and students of architecture and landscape architecture. The research reveals a disconnect between officially designated heritage and the participants' lived experiences. The findings show that Lørenskog is not perceived as a city, but more as a cultural landscape rich in natural heritage. By accessing and utilizing the inhabitants' relational heritage knowledge and incorporating their insights on place quality and identity, it is possible to cultivate a deeper connection with cultural heritage in planning and development.

KEYWORDS

Embedded heritage knowledge, place quality, qualitative interviews, reflexive thematic analysis

LØRENSKOG – A FOREST OR A CITY?

‘Lørenskog was, after all, as the name suggests: It is a forest. It was a forest. Lots of forest. Just forest.’¹ The quote is a part of a response from a fifty-four-year-old man (Interview 29), a resident of Lørenskog for thirty years, when interviewed about the municipality’s heritage. The interviews were conceived to investigate how the intense densification and urban development process has impacted the heritage and identity of the inhabitants of Lørenskog. The municipality, located near Oslo, the capital of Norway, has been experiencing a rapid population growth in recent years, with an annual growth of 3.8 per cent as of March 2025.² At the same time, Lørenskog is one of the most ethnically diverse municipalities, with 40 per cent of its inhabitants having an immigrant background.³ As the introductory quote suggests, the forest that surrounds and is woven into the urbanized landscape of Lørenskog (fig. 1) plays an important role for most of the thirty inhabitants interviewed in the



Figure 1: Lørenskog, a municipality neighbouring Oslo, is characterized by the surrounding forest, which is also reflected in the second part of its name, ‘skog’. © The author, Kartverket, Nibio og Statens vegvesen, 2023.

study. However, the erosion of the forest and other green spaces amidst the current densification processes has caused concern.

The current development features a newly constructed urban centre in Skårer(sletta), which was previously an open agricultural landscape. The densification in the area is also affecting previously undeveloped patches of woodland and increasingly obstructing the view of the surrounding forest. Due to these developments, residents called for a halt to the development, which led to a political shift during the 2023 municipal elections. These concerns have since led to a political project discussing the identity and position of Lørenskog within the capital region of Oslo. In light of the inhabitants' response, all political parties agreed to discuss the municipality's past, present, and future identity from both local and regional perspectives.⁴ This article explores and relates the participants' experiences concerning place identity and place quality, both prominent concepts in Norwegian planning and heritage management.

In heritage and planning research, identity is recognized as one of the main concerns.⁵ The loss of identity in Lørenskog felt by many of the inhabitants, and exemplified by the quote above, alongside the rapid transformation of the landscape, necessitates deeper examination of how the diverse population understands heritage. This includes how inhabitants identify with the place and what their aspirations for Lørenskog's future place qualities are. This article builds on an earlier one, which revealed that the municipal authorities had used a narrow object-focussed interpretation of heritage in the municipal heritage plan (prioritizing material aspects over lived experiences).⁶ Lørenskog's heritage plan categorizes and provides a list of valuable heritage objects and zones, with an emphasis on 'representativity', a concept that heritage theorist Laurajane Smith has criticized for being both patriotic and defined from an authoritative heritage perspective.⁷ The narrow and top-down focus of the existing local heritage plan leaves open the question of what constitutes heritage from the perspective of Lørenskog's inhabitants. This article thus uses the concept of place identity to explore what heritage is and what it means for the participants of the study (as embodied knowledge). Place quality opens the way to exploring how these experiences are related (as embedded knowledge).

Place quality is both a theoretical and an operational urban design and planning concept shared across disciplines such as environmental psychology,

cultural heritage, and urban planning.⁸ However, differences arise regarding how it is understood and applied in the heritage and planning sectors, and the results of the application of the concept across planning systems and practice can vary.⁹ In Norway, the heritage sector tends to relate place quality to intrinsic values of cultural significance, the historical, material, natural context, and community identity.¹⁰ Such an understanding is inherently relational and similar to urban planner and theorist Patsy Healey's contribution to the theory surrounding the concept of place quality in planning.¹¹ The Norwegian planning sector, by contrast, is informed by urban theorist Richard Florida's socioeconomic lens, and typically frames place quality as a collection of amenities aimed at attracting residents and businesses.¹² This socioeconomic view is still influential and present in amenity-focussed developments in Lørenskog, such as the Snø indoor ski slope and the house of culture, Lørenskog Hus. Later contributions in the field of urban design have broadened the concept of place quality and what it constitutes.¹³ The advancements in theorizations surrounding place quality therefore call for further research within a Norwegian context. This article contributes by exploring the concept from the perspective of cultural heritage and inhabitants and is guided by the following question: How can inhabitants' experiences inform our understanding of cultural heritage and its relation to place quality and place identity?

The following section introduces the theoretical background for the study, presenting key relational and critical heritage concepts pertinent to this article. A methodological section explains how in-depth qualitative interviews made it possible to explore the topic reflexively. The results section presents the participants' experiences related to cultural heritage, place identity, and place quality. The discussion section identifies themes and subthemes developed through interpreting the interviews, revealing new knowledge of Lørenskog's cultural heritage. Before concluding, I subsequently discuss themes for developing an understanding of the embodied and embedded heritage knowledge of Lørenskog.

THEORETICAL BACKGROUND

In the opening quote, one of the inhabitants interviewed in the study asks a question about what type of place Lørenskog is. So, is it a forest or is it a city? It is therefore important to clarify my understanding of the place. To avoid categorical understandings, I approach Lørenskog as a landscape through the 'in-between city' concept, derived from Thomas Sievert's idea of the 'Zwis-

chenstadt'.¹⁴ Sievert describes places such as Lørenskog as existing on their own terms between the established understandings of the countryside and the city.¹⁵ Such an understanding makes it possible to explore places on more diverse grounds, transcending conventional categories.

The research question, 'How can inhabitants' experiences inform our understanding of cultural heritage and its relation to place quality and place identity?', necessitates a social and relational approach, recognizing the dynamic interactions between individuals and their environments. This article builds on the understanding that the development of a place like Lørenskog is shaped by a dynamic interplay between the landscape, the built environment, and the social environment, where each part influences and is influenced by the others in an ongoing relational process.

Social and relational construction theories inform the overarching theoretical framework and positioning. Social construction posits that our understanding of reality, including concepts of identity, place, and heritage, is shaped by social processes, interactions, and cultural narratives.¹⁶ Relational constructionism builds on social construction, but instead of focussing on individual processes, it emphasizes the relational and dynamic interactions between individuals and their social, cultural, and material contexts.¹⁷

The concepts of 'place identity' and 'place quality' inform the formation of the interview questions and gathering of heritage-related experiences, which were then interpreted and developed into themes. Place identity and place quality are constructs that have been widely discussed across different disciplines and incorporated into planning theories and practices.¹⁸ Place identity is linked to social construction and used to gather findings on embodied relationships to places and cultural heritage. In this article, place quality is understood as a relational construction. It is used to develop a broader understanding of how cultural heritage is embedded as spatial and relational experiences of inhabitants.

I analyse and discuss the findings, the interview themes, using the concepts 'embodied knowledge', 'embedded knowledge', and 'authorized heritage discourse'. The concept of 'authorized heritage discourse' focusses on how heritage is shaped by discourse and power, and can be used to explore and discuss who plays a role in defining the cultural heritage of the municipality.¹⁹ The concept also inspired the methodology and the decision to

use qualitative interviews with inhabitants to obtain knowledge about the cultural heritage of Lørenskog. In this article, 'embodied knowledge' refers to knowledge gained through direct experience and physical engagement. It often manifests in practices, skills, and sensory experiences and can play a part in identity formation.²⁰ The concept is used here to explore whether and how individuals link their identity to cultural heritage, as 'embodied heritage knowledge'. The discussion builds on an understanding of embedded knowledge, a type of knowledge that exists in material artefacts (such as buildings and objects) and relationally in individuals and communities.²¹ I draw on my spatial-relational understanding of how material and social understandings of heritage are intertwined, which is prominent in critical heritage studies.²² I also draw on social scientist and geographer Doreen Massey's approach to relating the concept of embedded knowledge to spatial production.²³ I will therefore refer to the concept as 'embedded heritage knowledge' in the discussion, which is also informed by my own research. Together, the concepts facilitate a critical examination of the relationships and processes surrounding how the community perceives cultural heritage and how inhabitants' understanding of heritage can enrich the knowledge of place qualities in planning and development.

QUALITATIVE INTERVIEWS AS A REFLEXIVE AND COLLABORATIVE METHOD

I have employed qualitative interviewing to gain rich material from which to explore both place identity and place quality as it relates to the inhabitants of Lørenskog. The interview process facilitated an in-depth examination of the participants' experiences and relationships with local heritage management and development processes. I find conducting the study this way to be purposeful in exploring those relationships based on previously introduced theoretical concepts. The interview data was collected from 11 September 2023 to 3 October 2023. Seventy-four students contributed to the process as part of a module in a third-year foundational course in the architecture and landscape architecture programmes at the Oslo School of Architecture and Design (AHO).²⁴ The module involved a collaboration with Lørenskog municipality. A year before the interview process, in the fall of 2022, I established informal contact with the municipality with the aim of initiating a partnership. A more formal collaboration was established in May and June 2023 to prepare for the interview process. The author and Eystein Talleraas, along with two representatives from the municipality, participated in training the students to conduct the interviews.²⁵ Thirty inhabitants, also

referred to in the article as participants, were interviewed in the study. The students were divided into groups of two to four to conduct interviews with one participant. Of the thirty participants, the student groups interviewed twenty-nine, and I interviewed one.

The number of participants needed for research can vary. As qualitative methodology experts Virginia Braun and Victoria Clark argue, when data collection should be stopped cannot be determined before analysis, as it is situated and subjective.²⁶ After engaging with the data through analysis, I deemed the thirty interviews sufficiently beyond 'data saturation', a concept commonly employed to estimate how many samples are needed in a qualitative study or when further observation and analysis would reveal no new themes.

When selecting the participants, it was important to consider the diversity of the population of this municipality, which, at the time of the interviews, counted 140 nationalities.²⁷ Approximately one-third of the participants had a mixed or other cultural background than Norwegian. Additionally, collaborators from the municipality provided insights into the discrepancy often found in community engagement work related to municipal planning processes, where the demographics are generally skewed with respect to age, with older participants being overrepresented. To achieve a diverse pool of participants, my collaborators and I emphasized various demographic factors to ensure a varied group reflecting the municipality's diversity, factoring in variations based on age, gender, nationality, occupation, and a mix of new and long-term residents. The collaborators recruited participants by inviting people from local community networks to participate. Previously agreed-upon aims for diversity guided the final selection. Table 1 shows the diversity of the recruited participants. An interview lasted seventy-seven minutes on average, with the shortest interview lasting twenty minutes, and the longest 126 minutes.

The recruitment process involved written information that openly and explicitly explained the purpose of the study, why inhabitants were asked to participate, and who was responsible for the research and the data handling and for safeguarding ethical and privacy concerns.²⁸ The invitation presented the concept of 'place quality' and how management, planning, and the development of places can affect the quality of life.²⁹ The municipality provided feedback on the information used in the recruitment processes, which

helped ensure that the participants understood the type of research they were contributing to and its purpose.

The author, Eystein Talleraas and the students co-developed the interview guide, which included open-ended questions to avoid a yes-and-no-answer situation and facilitate a richer discussion. The author created a draft of the interview guide based on a previous guide from a similar course module, but now included questions specific to this study. During the first week of the course in September 2023, suggestions from students were gathered before the construction of the final interview guide.

Questions about heritage were asked in various ways and with different terminology, using cultural monuments ('kulturminner') and cultural heritage ('kulturarv') to encompass both singular objects and heritage in broader terms, as well as concerning social practices. They were asked questions such as, 'Do you know of any cultural monuments ('kulturminner') in the municipality? Which ones?' but to broaden this question, it was followed by: 'What do you experience as important cultural heritage in Lørenskog?' In this way, enough material was gathered to meaningfully interpret participants' experiences of value and their relationships to local heritage.

One example of a place identity question was 'What is Lørenskog's identity for you?', followed by a question like 'Is Lørenskog a part of your identity?' The findings were further enriched by asking the participants to draw important places on maps.

In terms of place qualities, the participants were asked, 'What qualities in Lørenskog are important for you?', followed by follow-up questions relating to the future: 'Are there any qualities in Lørenskog that are missing?', and to the past: 'What do you think about the changes?', followed by: 'Are there any areas, buildings or uses that have disappeared and you miss?', which encompasses past and future relationships simultaneously.³⁰

The interview process resulted in an extensive dataset that served two purposes. Some questions, such as those regarding transport and mobility, parks, and public spaces, gave insights that the students used in shaping their own landscape architecture and planning projects. This article is primarily based on the questions and resulting part of the dataset which offered insights into cultural heritage, place quality, and place identity.

Table 1

The table provides an overview of the interview participants, including their occupation, gender, age, cultural background, place of residence, and duration of their residence in Lørenskog. © The author

Inter- view #	Occupation	Gender	Age	Cultural background	Place of residence	Has lived in Lørenskog (years)	Other
1	Student	Female	18	Norwegian/ American	Røykås	10	Bul- garian parents
2	Student / Youth politician	Male	20	Spanish/ Norwegian	Bårli	10	
3	Culture advisor	Male	31	Norwegian/ South American	Skårersletta/ Finstadjordet	22	
4	Barista	Male	40	Norwegian	Fjellhamar- skogen	–	
5	IT-consultant	Male	31	Other	Røykås	0.2	
6	Communi- cation advisor	Female	44	Norwegian	Fjellhamar	8	
7	Journalist	Female	42	Norwegian	Røykås	11	
8	Media and communication advisor	Male	46	Norwegian	Rasta	8	
9	Graphic designer	Female	45	Norwegian	Vallerud	1	
10	Social worker	Female	27	Norwegian	Skårer	27	
11	Teacher	Male	-	Norwegian	Skårer	10+	Lived as a kid and later as an adult
12	Electrician	Male	41	Norwegian	Fjellhamar	8	
13	Landscape architect	Female	40	Norwegian	Skårersletta/ Finstadjordet	21+	Lived as a kid and later as an adult
14	Communi- cation advisor	Female	41	Norwegian	Røykås/Rasta	10	
15	IT-consultant	Male	40	Norwegian	Røykås/Rasta	8	
16	Freelancer	Male	36	Romani	Oslo (Lived on and off in Lørenskog)	–	Lives outside of town
17	Pensioner / Volunteering work	Female	61	Norwegian	Finstad	61	
18	IT-consultant	Female	49	Norwegian	Finstadjordet	24	
19	Lawyer	Female	45	Norwegian	Kjenn	15	

Inter- view #	Occupation	Gender	Age	Cultural background	Place of residence	Has lived in Lørenskog (years)	Other
20	IT-consultant	Male	61	Norwegian	Centrum (by Metro shopping centre)	25	
21	Pensioner	Female	70+	Norwegian	Kjenn	40	
22	CEO	Male	38	Norwegian	Røykås	5	
23	-	Male	35	Other	Fjellhamar	–	
24	Pensioner	Male	67	Iranian	Finstadjordet	40	
25	Social worker	Female	25	Norwegian/ Vietnamese	Born and studied in Lørenskog	–	
26	Economist / Business advisor	Male	37	Vietnamese	Finstadjordet	9	
27	Social worker	Male	49	Syrian	Centrum	7	
28	Subway conductor	Male	49	Pakistani	Finstadjordet	23	
29	IT-consultant	Male	54	Norwegian	Løkenåsen	30	
30	Pensioner (for- mer engineer)	Male	66	Norwegian	Centrum (near the Metro shop- ping centre)	39	

FINDINGS: EXPERIENCES OF HERITAGE, IDENTITY, AND PLACE QUALITY

I approached the material with a reflexive thematic analysis and theoretical reflection on the data from the qualitative semi-structured interviews.³¹ This approach embraces the researcher's subjective skills.³² The thematic coding process was open and performed iteratively and reflexively without a coding framework.³³ Three themes and subthemes were developed from the responses. The first theme is 'Cultural heritage – understanding and relationships', with the subthemes 'Heritage of Lørenskog', 'Heritage as landscape and nature', and 'Heritage as objects'. The second theme, 'Place identity – experiences in relation to time, people, and place', encompassed the subthemes 'Identity and orientation markers', 'Lack and loss of identity', and 'The multicultural identity of Lørenskog'. The third, 'Place quality – preference and anticipation in terms of development', included 'Place quality and development' and 'Place quality and nature' as subthemes. The fact that a third of those interviewed were cultural minorities, reflecting the diversity of Lørenskog, provided the study with enriching perspectives when dealing

with heritage questions. The questions were answered in a rich, honest, and often unexpectedly and contradictory way, hinting at changes in perception and personal discoveries in their relation to heritage through the interviews.

CULTURAL HERITAGE – UNDERSTANDING AND RELATIONSHIPS

When asked about their knowledge of and relationship to cultural heritage, the responses from the participants were rich and diverse. For some, Lørenskog does not have a unique heritage, but there is an acknowledgement that not enough attention was given to the subject in prior planning and development (Interviews 4, 30). Participant 2, one of the younger participants, talked about how heritage is for the older generation and not important for young people, although he acknowledges that that might change. Participants of the older generation have closer ties to more traditional notions of heritage. They are active users of heritage, as many engage in happenings associated with cultural heritage and the society for local history (Interviews 1, 7, 13,



Figure 2: The Skårer farm ("Skårer gård") is located in the middle of the Skårer(sletta) area, but is perceived as being out of place due to new development. © The author, 2023

17). They often attend events with families with younger kids. According to Participant 7, the activities do not attract people with a non-Norwegian background.

The heritage listed in the municipal heritage plan is frequently referenced in the interviews. Some participants express regret for not mentioning all the heritage components included in the cultural heritage plan, as if it memorizing them were mandatory.³⁴ The findings are linked to a lack of awareness amongst the participants that they can play a role in defining heritage, a topic which requires further exploration.³⁵ Many point to the importance of the remaining farmlands and agricultural buildings as an example of history that is disappearing (such as Skårer farm ['Skårer gård', fig. 2], which houses the Lørenskog's Museum of Rural Culture) and Losby Manor ('Losby gods'), which many have a fond relationship to. One of the heritage sites often mentioned by the participants, which is also listed in the heritage plan, is a waterwheel ('Vasshjulet') associated with the farmlands of Losby. Participant 9 points out that the waterwheel is a part of the municipality's logo (fig. 3), exemplifying how a relationship with a cultural monument can be forged through graphic measures. The fact that a copy of the wheel was raised outside the Triaden shopping centre in Skårersletta (around 2018) also influenced the relationship to the monument, as Participant 10 points out. According to her, the physical distance to the current site of the real monument (as it is located in the middle of the surrounding forest) makes it less likely that she thinks about it.

When analysing the data, it struck me that when the participants refer to cultural monuments, their relationship to heritage seems distant. Examples are when heritage is referred to as archaeology and something from the past



Figure 3: The logo of Lørenskog kommune is based on a waterwheel ('Vasshjulet'), which is a well-known cultural monument © Lørenskog kommune

(Interview 4) or when participants are not active users of heritage (Interviews 1, 2, 3, 6). The experiences related to the waterwheel imply that heritage needs to be in the participants' consciousness, experienced visually, and/or actively used by the participants in order for them to deem it valuable. When Participant 19 is asked what she believes is the most important cultural heritage of Lørenskog, she replies, 'Yes, that's a good question. I'm not that engaged in cultural heritage. Not that engaged, not that knowledgeable, but I would probably answer the forest.'³⁶ This is one of many indications that heritage in Lørenskog is understood beyond the monuments listed in the local heritage plan.

PLACE IDENTITY – EXPERIENCES IN RELATION TO TIME, PEOPLE, AND PLACE

In many of the interviews, the heritage of Lørenskog is associated more closely with contemporary social practices, such as sports activities at and around the Rolvsrud Arena, which are at the same time acknowledged as a part of the identity of place (Interview 30). Another example is from the youngest participant (Interview 1), who, when asked if there is any place that she misses, mentions 'Gigagøy', a commercial activity centre aimed at kids in one of the existing industrial heritage buildings on Skårersletta, which operated from 2007 to 2012.³⁷ The same participant explains that the school and the immediate surroundings are important meeting places. Others describe their relationship to the local house of culture, 'Lørenskog hus', erected as a monumental building, whose architectural concept draws inspiration from the Roman Colosseum.³⁸ Many speak about the importance of the building for culture and social activities (Interviews 2, 6, 9, 30), although some do not believe it has gained – or will gain – status as a cultural monument.

These and other places mentioned in the interviews are also amongst the identity and orientation markers that the participants use to navigate their surroundings. Many participants say they do not need orientation markers, as they know Lørenskog well from years of walking, biking, and driving in the area. Other individuals discuss the parks and lakes ('Rådhusparken' and 'Langvannet') as important markers for identifying and moving around Lørenskog.

At the same time, Lørenskog's identity is described by many as being multi-cultural (Interviews 1, 2, 3, 5, 6, 7, 9, 11), which is appreciated. However, the generic appearance of the new buildings and commodified spaces at

Skårersletta conceals this multicultural identity. Still, when one look closer and moves into the surrounding area, one can experience many cultures at play in between the buildings (such as between existing ones at Skårersletta, part of fig. 6).

Participant 11 spoke of the identity of Lørenskog as undergoing rapid transformation, and Participant 12 spoke of the identity as related to growth. However, many find that the developments are not just positive – as the next theme will show – as they have negatively affected some experienced qualities. Regarding development, many participants discuss the loss of rural identity and a lack of urban identity. Others have searched for an identity – a personal relationship with the place – but not found it (Interview 30). In some of those interviews, I interpret many of the participants' identities as more related to the surrounding forest than to the urban environment. Many participants emphasize their appreciation, use, and enjoyment of the forest in multiple ways, and continue to return to it during the interviews. Some discuss Lørenskog's identity as being fleeting (Interview 2) or as a mix between the urban and the forest (19), an aspect that I associate with the geographical character, which I have previously described as being in-between.³⁹

PLACE QUALITY – PREFERENCE AND ANTICIPATION IN TERMS OF DEVELOPMENT

Many participants raise concerns about safety and inequality in the municipality, which assumes a spatial form (Interviews 1, 2, 3, 6, 30). This aspect is related to two places, one for the middle class and one for the lower class (Interviews 1, 2, 3, 4, 6, 14, 30). Participant 4 calls Skårersletta 'hood' Lørenskog, while Participant 5 does not have an impression of this division. Participant 1 describes the division by referring to the traditional division in Oslo between the working-class east side ('Østkanten') and the upper-class west side ('Vestkanten'). In Lørenskog, the divide experienced is between the northern and the southern area, which includes Skårersletta (see fig. 1).

Some speak of 'wannabe-gangsters' hanging around the shopping centres (Interviews 1, 7, 30) or of gangs and criminality that are on the rise around the area of Skårersletta (Interviews 10, 14, 15). Participant 8 speaks of this as an issue related to safety, which has caused him to move neighbourhoods away from the city centre. Participant 30 has experienced living centrally above the Metro shopping centre. With thirty-nine years of experience living

in Lørenskog, he speaks of how he has followed the development from when rural farming landscapes characterized the area. In his view, the origins of today's problems started with the modernist blocks on top of Skåreråsen, and he talks about witnessing drug dealing in the parking garages under the city centre and how this problem seems complicated for the municipality to tackle. He explains the lack of cultural integration and emphasizes the importance of meeting places and activities for people of all ages and cultures so as to deal with the issue. The city's densely populated, newly built parts conceal a reality of low-income groups behind glossy facades (Interview 6).

Some of the participants describe Lørenskog as a suburb of Oslo. Many commuters amongst the interviewees have a positive relationship with the motorway that runs through the city's centre. The motorway provides easy access to the neighbouring cities of Lillestrøm and Oslo and eases the commute to cabins on weekends. The motorway runs from east to west, cutting the northern and southern parts of the municipality in two.

In the less densely populated parts of the municipality, most of the participants seek proximity to green areas within and outside the boundaries of the municipality. In more densified areas, the participants raise concerns about the place changing its character from 'Lørenskog' ('Lørenforest') to 'Lørenby' ('Lørencity') (Interview 1). Participant 8 mentions that there are differences in how this process is perceived. Within the municipality, it can be an identity related to ambitions to become a city, and outside Lørenskog can be perceived as a suburb ('drabantby'). The results of the densification have been described as too dark and dense (Interview 5), and there is a call for a halt in development (Interviews 1, 5, 30), concerns echoed in Lørenskog's participatory planning process concerning the new municipal plan.

Many speak of a loss of nature in the municipality. In one of the interviews, Participant 7 advocates for protecting the cultural landscape as a sustainable source of food production, relating the potential future Lørenskog to its agricultural heritage. There is a concern about the lack of nature and leisure activities in densified areas (Interviews 2, 30). Some also explicitly say they prefer nature over shopping centres (Interviews 3, 5, 13). Participant 4 says the change is incremental, suggesting the municipality takes 'just a little bit here and there'. In response to this practice, Participant 1 proposes a stop to construction and preserving nature.

One of the most significant divisions amongst the participants is how they relate to consumer culture. This division follows a generational divide, where the younger generation embraces the culture of consumption (Interview 1) and the older generation contests it by stating that the shopping centres are not for them (Interview 30). The youngest participants (Interviews 1 and 2) are more prone to acknowledge newer developments as potential heritage, through their appreciation of the qualities of the Skårersletta development (which is likened to Bjørvika in Oslo [Interview 2]), Snø (the indoor skiing arena), and the importance of the shopping centres – Metro and Triaden – as meeting places. Some also use these buildings to navigate in the city. Participant 2 acknowledges that the lack of association and knowledge of local history may arise from the fact that it cannot be experienced spatially. Participant 5 talks about the development being only business-focussed and deriving from an Americanized system. Participant 3 is optimistic about the new development but believes there is room for improvement.

Interview Participant 30 advocates for the potential of cultivating cultural heritage, such as Skårer gård and Losby gods, as meeting places, and proposes their further management and development as attractions for inhabitants and visitors. Some of the findings indicate an awareness amongst the participants of the relationship between heritage, nature, and potential social activities, which simultaneously ties into place identity and wishes for place quality.

In terms of use, the participants simultaneously wish and hope for more meeting places and room for activities in future development beyond the shopping centres (Interviews 1, 3). Some argue that there are enough kebab places in Skårersletta, and call for cafés with outdoor seating options. At the same time, the participants express a desire for the preservation of nature within the urbanized environment. Participant 5 speaks about Lørenskog as two places, the city and the countryside. He and Participant 4 emphasize a lack of green and ask for a new strategy for the municipality's development that includes nature and parks. Similarly, Participant 11 speaks of what he likes best about Lørenskog, which is the mix between the urban and the rural character.

Many raise concerns about the rapid urbanization of Lørenskog. Participant 1 raises concerns about how the current development is making Lørenskog ('Lørenforest') into 'Lørenby' ('Lørencity'). Interview Participant 17 still uses the term 'countryside' ('bygda') when talking about Lørenskog. She proposes

that instead of talking about Lørenskog as a city (as many have ambitions for), one should rather speak of Lørenskog as a municipality. Participant 15 believes the future development will lead the municipality to extinction through engulfment by Oslo. Participant 16, who used to live in Lørenskog but now lives in Løren (a peripheral neighbourhood in Oslo), speaks of how the development has negatively influenced his experienced quality of life. He used to live where the Thon Hotel was being built next door to him in the northern part of town, next to the Snø indoor ski complex:

And they kept building, building, and building, and we submitted complaints – which we, as residents, actually have the right to do. But it wasn't respected, and they just kept going and kept going. As I told you, now that park down below is gone, too. Because half of it is gone and taken for the hotel. And the small one will also be built over, so all the beautiful nature is disappearing. In the end, you lose quality – quality of life – when you don't have proper air quality. So, I was treated that way as a resident, and we were troubled in that way. But I can say to them, well done, nicely executed, but ... there should be a limit to what is acceptable and what isn't. If you try working against that mechanism, it doesn't work. If the mechanism is faulty, the result will be a failure. [Looks clearly concerned.]⁴⁰

Later, Participant 16 comes with a warning. He warns that if the municipality keeps building at the same pace, Lørenskog will end up like Oslo. Participant 13 shares a similar concern. She criticizes the sameness of the buildings constructed in Skårersletta and how the outdoor areas are designed. She acknowledges that they are of increasingly better quality, but is concerned about their lack of diversity. It seems that the participants suggest that such structures (as experienced in Løren) work better in settings that are already urban (like Oslo), where there is an established acceptance of such a character (fig. 4). In Lørenskog – referring to the in-between character of the place – some of the participants in the study experience such structures as being out of context. The words the different actors use to describe Lørenskog is important to reflect on. The interviews reveal many ways of describing the place amongst the inhabitants (whether as a forest, as a city, or as something else). These descriptions often differ from the municipality's heritage and development narratives, which it is also important to reflect on, and I will therefore return to this later in the discussion.

The interviews reveal a consensus amongst the participants that Lørenskog's unique qualities are related to nature, not only surrounding but also within the municipality. In sum, the findings from the interviews strongly suggest that nature is recognized as cultural heritage by the participants and is tied to the quality of the place they wish for in future development.

DISCUSSION: THE RELATIONAL HERITAGE AND PLACE QUALITIES OF LØRENSKOG

Based on the participants' experiences, this study's findings showcase the complex interplay between cultural heritage, place identity, and place quality in Lørenskog. This discussion thus weaves together the themes identified through the qualitative interviews, while grounding the analysis in the theoretical frameworks introduced earlier in the article.

DISCUSSION OF 'CULTURAL HERITAGE – UNDERSTANDING AND RELATIONSHIPS'

The findings related to the theme 'Cultural heritage – understanding and relationships' show many indications that heritage in Lørenskog is understood to be more than the list of monuments officially designated in the local heritage plan. One such example is found by looking not at what is mentioned, but what is omitted from the interviews. When reading through the interview transcripts, I found it interesting that almost none of the participants (apart



Figure 4: Photos of recent developments in the urban environments of Løren, Oslo (image on left © The author, 2025), and Skårersletta, Lørenskog (image on right © The author, 2023), show that although built in different settings, the structures share a likeness with respect to materiality, scale, and form.

from one, Interview 20) mentions the officially listed cultural monument ‘Svenskefurua’ (Swedish pine tree), which is located in the park next to the city hall (‘Rådhusparken’) near Lake Langvannet (fig. 5). It is a tree that portrays part of a story related to the Great Nordic War (1700–21) between Sweden, Denmark, and Norway. In 1716, the war reached Lørenskog, and the story describes Swedish soldiers resting under the pine tree.⁴¹ The municipality makes an effort to take care of it, as exemplified by the erection of a protective picket fence. I was therefore expecting it to be mentioned by many of the interview participants, but, surprisingly, this was not the case. When Participant 29 was asked about the tree, he did not remember where it was, which signifies a lack of connection between the cultural monument and the place where it is located. This omission exemplifies participants’ lack of a relationship to some of the listed cultural heritage in Lørenskog.



Figure 5: Svenskefurua, located in the park near Lørenskog's city hall (Rådhusparken), exemplifies how heritage is zoned in and protected, turning it into an object rather than an integrated part of the park. © The author, 2023

The way in which the tree is protected, with a fence, exemplifies parts of the relationship that Lørenskog's planning and heritage management discourse has to heritage. It is something to be protected by the municipality and zoned in. It is thus made less accessible to those who want a closer and more embodied experience. The lack of emphasis of Svenskefurua in the findings reveals an absence in participants' awareness of this particular example of heritage. It also demonstrates how authorities care for history and nature, which might point to challenges in relating to heritage. The pine tree serves as a typical example of how established cultural heritage management often selects objects and ascribes values to them that may not be readily understood or recognized by the majority of people. Similarly, Laurajane Smith criticizes the emphasis on material heritage in heritage management and how it overlooks the social relations that make heritage relevant for people.⁴² Smith argues that cultural heritage and planning disciplines have yet to move beyond the reduced understanding of heritage as a discourse and towards acknowledging it as embodied performance.⁴³ This sentiment is echoed in the interviews, in which participants refer to textbook examples of heritage to which they have little to no personal connection, often overlooking the heritage they have actually experienced.

During many of the interviews, the relationship between formally established heritage and understanding heritage as a broader concept seems to change. The participants seemed to become aware of heritage beyond material objects when they explained their close relationship to and uses of the surrounding nature and forestscapes. In those answers, an awareness of the qualities they associate with nature within the urban environment became clear when reading the interviews (Interviews 2, 3, 5, 7, 9, 13, 30). The awareness is amplified when the participants voice their disapproval of the loss of these spatial experiences as a result of development (Interviews 1, 2, 3, 4, 5, 7, 9, 13, 30). For Participant 9, Lørenskog is green and characterized by trees, which aligns with the views of Participants 19 and 29, whom I refer to in the quote that begins this article. When asked about important heritage in Lørenskog, many participants advocate preserving as much of the forest as possible instead of building a sprawling urban environment. The participants' responses illustrate that cultural heritage is perceived not merely as a collection of monuments and sites, but as an active and relational process deeply embodied and embedded in residents' lived experiences and their relationship to the immediate and surrounding landscape.

DISCUSSION OF 'PLACE IDENTITY' AND 'PLACE QUALITY'

The findings show that the community's preferences and concerns with respect to development reflect a significant apprehension among residents about the ongoing densification of Lørenskog. While one might anticipate a generational divide in attitudes towards development, with younger residents more likely to embrace change, the interviews reveal a surprising intergenerational uniformity. Both younger and older participants express equal concern for preserving Lørenskog's unique local identity and preserving qualities that they associate with nature.

The theme 'Place identity – experiences in relation to time, people, and place' showcases how heritage and identity can be understood relationally. The interviews reveal a much more complex relationship to heritage beyond what is officially designated. In many participants' views, Lørenskog's place identity is multicultural and defies a uniform understanding. They are concerned simultaneously about the lack of urban identity and the loss of rural identity. The participants' views informed my further questioning of how cultural heritage is defined, and by whom.

Findings related to the theme 'Place quality – preference and anticipation in terms of development' show how many of the participants are concerned about an ongoing segregation experienced between those who can afford to live in areas with direct access to nature, and those who live in the centre at Skårersletta (or in the 'hood', as Participant 4 calls it). The developers active in constructing the new centre of Skårersletta seem to be aware of this attraction to green spaces, as expressed by Participant 13. This participant also raises concerns about the name of an ongoing development project, 'Lørenskog hageby' ('Lørenskog Garden City') in Skårersletta (fig. 6). As she passed by it, she encountered a proposal for a twelve-storey structure. 'Where's the garden?' she asked. Given the previous open farmland context, she highlights opportunities to authentically create a garden city (examples of which can be found in other parts of Skårersletta [fig. 6]).

Participant 17, whose family roots lie on a local farm and is actively engaged in local history associations, raises critical points connected to the above themes. She criticizes 'Skårer Syd' being used as a made-up name for the southern part of Skårersletta, since the plots used to be a part of Løken farm. She underscored the importance of preserving historical place names associ-

ated with the old farmlands and argues that 'Løkengården' ('Løken farm') or 'Løken' should be used instead. This process of renaming contributes to the erosion of heritage narratives. It exemplifies how developers disengage from the site's intangible heritage, reinforcing Smith's critique of 'authorized heritage discourse' – which often marginalizes such intangible heritage aspects. Smith's critique primarily focusses on the role of authorities in defining heritage. However, the findings from the interviews reveal that in Lørenskog, the heritage narratives are not determined solely by local, regional, and national governmental bodies, but also by the developers themselves.

The findings show that heritage management bodies should not be perceived as the sole authority over heritage preservation and development. The developers, perhaps unknowingly, also play a role in defining heritage and constitute part of the authorized heritage discourse. The findings of this article broaden Smith's perspective by emphasizing her critique of officially recognized material heritage and how developers influence such definitions. As the example of urban development driven by the garden city concept shows, the narratives also affect the physical shaping of the place.



Figure 6: The in-between character of Lørenskog (from other parts of Skårersletta) (image on the left, © The author, 2023) and the announced development of 'Lørenskog Hageby' ('Lørenskog Garden City') shows an example of how new development refers to existing qualities in its concept, but fails to deliver the experience in reality (image on right, © The author, 2023).

EXPLORING EMBEDDED HERITAGE KNOWLEDGE AND ITS ROLE IN PLACE QUALITY

Earlier in this article, I introduced place identity and place quality as perspectives that inspired the formation of the research questions and the development of themes. This section now argues that embedded heritage knowledge challenges conventional notions of heritage as static and object-oriented, instead promoting an understanding that emphasizes the continuous production of heritage through spatial and relational processes. Furthermore, I discuss and argue how embedded heritage knowledge can be used to broaden the understanding of place quality in planning.

As the themes ‘Cultural heritage – understanding and relationships’ and ‘Place identity – experiences in relation to time, people and place’ show, the meaning of heritage emerges from how people engage with these spaces and from their memories, stories, and activities. This ongoing place production in locations such as Lørenskog is evident in how the participants connect with spaces, sharing memories, stories, and activities – processes explored in the study’s interviews. Harrison argues for this perspective in his book *Heritage: Critical Approaches* (2013), which states that heritage’s spatial and material dimensions allow for the transmission of embedded knowledge.⁴⁴ When people engage with spaces, such as through living and working in them, they perpetuate the knowledge embedded in those spaces.

The findings from the theme ‘Place quality – preference and anticipation in terms of development’ require an assessment of the relationship between place quality and cultural heritage. The interviews reveal that heritage consists of individuals’ relationships to their environments over time. I draw on Harrison’s conceptualization of heritage, which emphasizes the emergence of meaning through such interactions, with communities engaging spatially and contextually with their surroundings.⁴⁵ The interviews illustrate how the municipality communicates conventional notions of heritage as static and material objects (or monuments) to the interview participants. However, their experiences, as portrayed, are more dynamic, relational, and intertwined with the cultural landscapes and their experiences with other people and places.

Furthermore, in ‘Beyond “Natural” and “Cultural” Heritage: Toward an Ontological Politics of Heritage in the Age of the Anthropocene’ (2015), Harrison argues against the traditional dichotomy of natural and cultural

heritage, advocating instead for an integrated view that critically examines how these concepts intersect in contemporary practice.⁴⁶ Such an integrated view is important here, as the participants' perceptions of cultural heritage in Lørenskog are rooted in their understanding of cultural landscapes. Insights from the interviews indicate that future developments should prioritize integrating natural spaces alongside built environments. The concept of 'Lørenforest' versus 'Lørencity' articulated by participants in the subtheme 'Lørenforest becomes Lørencity', with accompanying examples, highlights the community's desire for a distinct character that is neither a forest nor a city, but one that harmonizes urban development with cultural and natural heritage. Understanding the heritage of Lørenskog as relational is essential to overcoming the separation between natural and cultural heritage.

The interviews reveal that urban developers play a significant role in determining which narratives are included or omitted in conceptually driven development projects, showing that they also play a part in the authorized heritage discourse. The developers play a role when they choose to ignore local place names, contributing to the erosion of heritage narratives tied to the cultural landscape. The findings imply that cultural heritage should not remain a sectoral concern within cultural heritage management. Cultural heritage should also be understood by actors involved in planning and development as a social concern. A question thus arises regarding who is responsible for the overall heritage narratives that guide development: Is it the developers, the municipality, or the inhabitants? There is thus a need for a dialogue that facilitates defining and redefining what heritage is and means for the inhabitants of Lørenskog. Working more relationally with heritage can contribute to forging more place-specific planning and development strategies.

From a spatial and material perspective, the theme related to place qualities indicates that the transition from agricultural landscapes to urban environments has led to the emergence of structures that many participants perceive as generic and disconnected from their cultural context. In contrast, parks and green spaces near residential areas contribute to residents' identities and signal qualities they desire. As argued by Healy, urban planners and developers should consider the multifaceted relationships between spaces, societal values, and community needs.⁴⁷ A relational understanding of how place quality impacts individuals' sense of wellbeing and identity is needed to rectify the issues brought forward by Lørenskog's residents. As the interviews

reveal, a broader understanding of cultural heritage can contribute to shaping more meaningful heritage and development narratives in future planning.

CONCLUSION

The research poses the question: How can inhabitants' experiences inform our understanding of cultural heritage and its relation to place quality and place identity? Regarding heritage, the interviews highlight a disconnection in the perception of heritage between the officially designated heritage and the cultural heritage connections experienced by the participants. An overarching sentiment amongst them is the importance of nature as an integral aspect of their cultural heritage, and they envision Lørenskog not merely as a city but also as a cultural landscape. The interview process revealed that the participants were unaccustomed to being asked about their connections to cultural heritage, place quality, and place identity. Incorporating such questions into other participatory planning processes can help break the traditional and limiting boundaries often put on cultural heritage in planning.

Regarding place qualities, the interview findings show that the participants value and wish for qualities associated with both urban and rural aspects of development. Some even go as far as to warn that Lørenskog will become part of the city of Oslo and thus cease to exist. To remedy the sense of loss of identity, the further planning and development of Lørenskog and other places with a similar 'in-between' character can cultivate their local qualities and identity rather than importing ideas of qualities and character from elsewhere. The article shows how embedded heritage knowledge can be accessed by asking inhabitants questions about place identity and place quality. Such a process of gathering information can help inform future planning and development strategies.

The quote that opens this article points to the importance of nature. As the interview participants' lack of a relationship to the protected Svenskefurua shows, Lørenskog's landscape is characterized not only by one but by many trees, which relates somewhat to the shared identity of the place. Exploring the experienced heritage and place identity in Lørenskog revealed a notion and understanding of nature as heritage and the municipality as a cultural landscape rather than a city. The findings call for further exploration of relational thinking regarding heritage within planning research and practice. In terms of planning practice, it calls for a broader acknowledgment of cultural heritage, in which planning authorities, in collaboration with developers and

others actors, can foster a deeper connection between inhabitants and their lived experiences in future planning and development.

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NOTES

¹ 'Lørenskog var jo som det er i navnet, det er skog. Det var skog. Masse skog. Bare skog.' (Interview 29).

² Kristian Olav Hvesser, 'Befolkningssammensetning', Lørenskog kommune, 27 March 2025, <https://www.lorenskog.kommune.no/postliste-og-innsyn/kommunens-planer/folkehelseoversikt-2024-2027/befolkningssammensetning/> [all URLs here accessed in January 2026].

³ Hvesser, 'Befolkningssammensetning'.

⁴ Based on information from the head of development in Lørenskog municipality. The issues that the municipality was facing spurred a research collaboration connected to my PhD research project and fellowship at the Oslo School of Architecture and Design (AHO). The partnership was between the municipality, me, and the third-year foundational studio (GK5) for architecture and landscape architecture students at AHO. I contributed as a researcher, guest teacher, and coleader, with Eystein Talleraas, of the module 'Social Practices'.

⁵ Eva Stegmeijer and Les Veldpaus, eds., *A Research Agenda for Heritage Planning: Perspectives from Europe* (Cheltenham: Edward Elgar Publishing, 2021), pp. 13–14.

⁶ Vignir Freyr Helgason, 'Rethinking the Place Qualities and Cultural Heritage of In-between Cities', in *Creation of New Knowledge: Dialogues Inside and Between Disciplines*, ed. Anne Elisabeth Toft and Magnus Rönn, Proceedings Series 1 (2025) (Nordic Academic Press of Architectural Research, 2025), pp. 127–51.

⁷ Laurajane Smith, *Uses of Heritage* (London: Routledge, 2006), pp. 11–43, <https://doi.org/10.4324/9780203602263>. See also Lørenskog kommune, 'Kulturminneplan – Del 1 (Plandel)' (Cultural Heritage Management Plan, Lørenskog municipality, 2021); Lørenskog kommune, 'Kulturminneplan – Del 2 (Delområder Med Kulturminner)' (Cultural Heritage Management Plan, Lørenskog municipality, 2021); Lørenskog kommune, 'Kulturminneplan – Del 3 – Vedlegg' (Cultural Heritage Management Plan, Lørenskog municipality, 2021).

⁸ Place quality is found in heritage and planning-related theories and policies such as: John Eyles and Allison Williams, *Sense of Place, Health and Quality of Life*, Ashgate's Geographies of Health Series (London: Ashgate, 2016); Mel Burton, 'Quality of Place', in *Encyclopedia of Quality of Life and Well-Being Research*, ed. Alex C. Michalos (Dordrecht: Springer Netherlands, 2014), pp. 5312–14; Patsy Healey, *Urban Complexity and Spatial Strategies: Towards a Relational Planning for Our Times*, 1st ed. (London: Routledge, 2007); Riksantikvaren, 'Riksantikvarens strategi og faglige anbefalinger for by- og stedsutvikling' (Policy document, Riksantikvaren, Oslo, 2021); Richard Florida, *The Rise of the Creative Class: And How It's Transforming Work, Leisure, Community and Everyday Life* (New York: Basic Books, 2002), pp. 231–34.

⁹ An argument made in Healey, *Urban Complexity and Spatial Strategies*, p. 5.

¹⁰ As exemplified in a definition put forward in Riksantikvaren, 'Riksantikvarens strategi og faglige anbefalinger for by- og stedsutvikling', p. 49.

¹¹ Healey, *Urban Complexity and Spatial Strategies*.

¹² Even Smith Wergeland, 'Richard Florida i medvind og motvind', *Plan* 56, no. 4 (2025), pp. 6–15. See also Are Kristiansen, Liv Kaasen, Silje Sørle Hammershaug, et al., *Fortetting Og Transformasjon Med Bykvalitet i Bybåndet – Oppfølging Av Regional Plan for Areal Og Transport i Oslo Og Akershus* (May 2019); Florida, *The Rise of the Creative Class*, pp. 231–34; Knut Vareide, Lars Ueland Kobro, and Hanna Nyborg Storm, *Programteori for attraktivitet*, TF-notat (23 May 2013).

¹³ Matthew Carmona, 'Place Value: Place Quality and Its Impact on Health, Social, Economic and Environmental Outcomes', *Journal of Urban Design* 24, no. 1 (2018), pp. 1–48.

¹⁴ Thomas Sieverts, *Cities without Cities: An Interpretation of the Zwischenstadt* (London: Spon Press, 2003).

¹⁵ Sieverts, *Cities without Cities*. A further examination of this concept in connection with the topic of this article and the case study can be found in Freyr Helgason, 'Rethinking the Place Qualities and Cultural Heritage of In-between Cities', pp. 127–51.

¹⁶ Peter L. Berger and Thomas Luckmann, *The Social Construction of Reality: A Treatise in the Sociology of Knowledge* (London: Penguin Group, 1991).

¹⁷ Sheila McNamee and Dian Marie Hosking, *Research and Social Change: A Relational Constructionist Approach* (London and New York: Routledge, 2012), pp. xiv, 1.

¹⁸ These concepts are found in theoretical contributions and planning and heritage policies, such as: Kim Dovey, *Becoming Places: Urbanism / Architecture / Identity / Power*, 1st ed. (London and New York: Routledge, 2010); Gregory John Ashworth and Brian J. Graham, eds., *Senses of Place: Senses of Time* (London and New York: Routledge, 2005); Eyles and Williams, *Sense of Place, Health and Quality of Life*; Healey, *Urban Complexity and Spatial Strategies*; Florida, *The Rise of the Creative Class*, pp. 231–34; Riksantikvaren, 'Riksantikvarens strategi og faglige anbefalinger for by- og stedsutvikling'; and Tim Cresswell, *Place: An Introduction*, 2nd ed. (Chichester: John Wiley & Sons Ltd., 2015).

¹⁹ I draw here on Laurajane Smith's theorization of the concept in Laurajane Smith, *Uses of Heritage*, and Laurajane Smith, *Emotional Heritage: Visitor Engagement at Museums and Heritage Sites*, 1st edition (London and New York: Routledge, 2021), pp. 19–21.

²⁰ Informed by the definition of 'embodied knowledge' as 'knowledge that resides in the actions of individuals, learnt and refined through practice and training. This is somatic tacit knowledge, related to the "the nature of the human body and brain"'. Presented by TACK Communities of Tacit Knowledge, 'Embodied Knowledge', *TACK Publishing Platform*, 2024, https://tacit-knowledge-architecture.com/object/?tacit_knowledge=embodied-knowledge.

²¹ Informed by the definition of 'embedded knowledge' as 'knowledge that cannot be made fully explicit because it exists in objects, buildings, artworks, or other material artifacts; or, because it exists sub- or unconsciously within individuals and/or communities'. Put forward by TACK Communities of Tacit Knowledge, 'Embedded Knowledge', https://tacit-knowledge-architecture.com/object/?tacit_knowledge=embedded-knowledge.

²² I draw here on critical heritage theories, such as: Rodney Harrison, *Heritage: Critical Approaches* (London and New York: Routledge, 2013); Rodney Harrison, 'Beyond "Natural" and "Cultural" Heritage: Toward an Ontological Politics of Heritage in the Age of Anthropocene', *Heritage & Society* 8, no. 1 (2015), pp. 24–42; Rodney Harrison, Caitlin DeSilvey, Cornelius Holtorf, et al., *Heritage Futures: Comparative Approaches to Natural and Cultural Heritage Practices* (London: UCL Press, 2020).

²³ Doreen Massey, *For Space* (London: Sage Publications, 2005).

²⁴ To make the interview participants feel that their participation was meaningful, they were invited to an exhibition and an event showcasing the students' work. The exhibition ran from December 2023 to January 2024 and culminated in a course presentation and discussion on 10 January 2024.

²⁵ Key readings were: Lene Tanggaard and Svend Brinkman, 'Interviewet: Samtalen Som Forskningsmetode', (2020), pp. 33–63, and Marit Ekne Ruud, Ingar Brattbakk, Per Gunnar Røe, and Guri Mette Vestby, 'Sosiokulturelle Stedsanalyser. Veileder' (Akershus Fylkeskommune, Husbanken, KRD, MD, NIBR, 2007).

²⁶ Virginia Braun and Victoria Clarke, 'To Saturate or Not to Saturate? Questioning Data Saturation as a Useful Concept for Thematic Analysis and Sample-Size Rationales', *Qualitative*

Research in Sport, Exercise and Health 13, no. 2 (2021), pp. 201–16.

²⁷ Statistics Norway, 'Table 09817', 9 March 2023.

²⁸ As a part of the preparation, an application was sent to SIKT, the Norwegian Agency for Shared Services in Education and Research, the national body that aids in ensuring that ethical concerns and personal information are safeguarded in the research process. I created a data management plan and had it assessed through an application. Based on Norwegian national guidelines, I considered ethical concerns and practicalities surrounding the interviewing process. See NESH – The National Committee for Research Ethics in the Social Sciences and the Humanities, *Guidelines for Research Ethics in the Social Sciences and the Humanities* (2021).

²⁹ The interview participants were presented with the following definition: 'Stedskvalitet har tidligere blitt forklart som de fysiske egenskapene til samfunnet og hvordan måten det planlegges, utformes, utvikles og vedlikeholdes påvirker livskvalitet.' The definition built on Mel Burton, 'Quality of Place', pp. 5312–314.

³⁰ As part of the interview, the participants drew spatial relations on a map and were asked how they orient themselves in Lørenskog and what qualities they appreciate. The process opened for spatial engagements, although the interviews were done in a static, seated setting. The method and the material produced were used to interpret the interview data. This part of the method and the material produced has been further discussed in another article by the same author: Vignir Freyr Helgason, 'Engaging with Citizens' Heritage Knowledge in Urban Research and Planning: The Case of Lørenskog, Norway', in *Regenerative Landscapes – Designing the Transition: Selected Proceedings of the ECLAS 2024 Conference*, ed. Ellen Fetzer, 1st ed. (Göttingen, Germany, 2025), pp. 209–17.

³¹ The structure and content of this qualitative-interview-based article are informed by Journal Article Reporting Standards for Qualitative Research (JARS-Qual). The standard guides writers and reviewers in writing papers based on qualitative data and ensures a common understanding of what it entails: see Heidi M. Levitt, Michael Bamberg, John W. Creswell, et al., 'Journal Article Reporting Standards for Qualitative Primary, Qualitative Meta-Analytic, and Mixed Methods Research in Psychology: The APA Publications and Communications Board Task Force Report', *American Psychologist* 73, no. 1 (2018).

³² My approach builds on Virginia Braun and Victoria Clarke, 'One Size Fits All? What Counts as Quality Practice in (Reflexive) Thematic Analysis?', *Qualitative Research in Psychology* 18, no. 3 (2021), pp. 328–52.

³³ The interviews were uploaded and processed in the program NVIVO 14. As explained earlier, the coding process was reflexive and built on Clarke and Braun's approach for reflexive thematic analysis. After uploading the interview transcripts, the interviews were first skimmed through and then manually coded in the program. I took notes on the side and engaged with the interviews spatially by examining the spatial data, maps, and images collected during the interview process. The themes were developed through this process.

³⁴ Lørenskog kommune, 'Kulturminneplan – Del 1 (Plandel)' (2021); Lørenskog kommune, 'Kulturminneplan – Del 2 (Delområder Med Kulturminner)' (2021); and Lørenskog kommune, 'Kulturminneplan – Del 3 (Vedlegg)' (2021).

³⁵ This is amongst the aspects explored in the article: Freyr Helgason, 'Engaging with Citizens' Heritage Knowledge in Urban Research and Planning', pp. 209–17.

³⁶ 'Ja, det er et godt spørsmål. Jeg er ikke så opptatt av kulturarven. ... Ikke så opptatt, ikke så god på det. Da vil jo jeg svare på skogen, liksom.' (Interview 19).

³⁷ Thor Fremmerlid. 'Tapte millioner på lekeland', *Romerikes Blad*, 23 May 2012.

³⁸ A reference to the Roman Colosseum is also used by the municipality in Lørenskog kom-

mune, 'Et moderne Colosseum', *Lørenskogs storstue fyller 10 år – Jubileumsmagasin for Lørenskogs hus* (Lørenskog kommune, 2021), pp. 12–13.

³⁹ Informed by Thomas Sievert's concept of the 'Zwischenstadt' (In-between City), further unpacked in Freyr Helgason, 'Rethinking the Place Qualities and Cultural Heritage of In-between Cities', pp. 127–51.

⁴⁰ 'Og det ble bygget, og bygget, og bygget og vi sendte inn klager, som vi som beboere har rett til. Men det ble jo ikke respektert, og det bare kjørt på, og kjørt på. Som jeg sa til deg, så er parken nedenfor borte nå også. Fordi halvparten er borte og inngår nå i hotellet. Så skal den lille også bygges på, så alt av den fine naturen blir borte. Til slutt så mister man kvalitet – livskvaliteten – når du ikke har god luftkvalitet. Så jeg ble behandlet på den måten jeg, som beboer, og vi var plaget på den måten. Men, jeg kan si til dem, flott gjort, vel utført, men ... de bør være en grense på hva som faktisk går og ikke går, men hvis man prøver å motvirke den mekanismen, så går det ikke. Hvis mekanismen er feil, går det feil. [Ser tydelig betenkt ut]' (Interview 16).

⁴¹ Lørenskog kommune, 'Svenskefurua', 6 October 2023, www.lorenskog.kommune.no/tjenester/kultur-idrett-og-fritid/kultur/kunst-museum-og-kulturminner/kulturminner/kulturminner-i-lorenskog/svenskefurua.121737.aspx.

⁴² See Smith, *Uses of Heritage*, and Smith, *Emotional Heritage*, pp. 19–21.

⁴³ *bid.*

⁴⁴ Harrison, *Heritage*.

⁴⁵ Harrison, *Heritage*, pp. 114–39.

⁴⁶ Harrison, 'Beyond "Natural" and "Cultural" Heritage'.

⁴⁷ Healey, *Urban Complexity and Spatial Strategies*.

THE LANDSCAPE OF DANISH ARCHITECTURAL HERITAGE: EXAMINING SUSTAINABILITY IN CURRENT CONSERVATION PRACTICE

Birgitte Tanderup Eybye

ABSTRACT

Architectural heritage contributes to sustainable development, yet it is ambiguous to what extent sustainable concerns are part of recent conservation work in Denmark. As a logical consequence, the aim of this article is to investigate the current landscape of Danish architectural heritage and how different aspects of sustainability influence approaches to architectural conservation.

To achieve its objective, the article begins by introducing the theoretical and analytical framework, including architectural conservation and sustainability. Next, a survey is conducted in order to generate an overview of current Danish conservation practice and identify examples of conservation works that have included sustainable aspects. In terms of method, the survey draws on a systematic mapping study with a view to being transparent and replicable. One of the main outcomes of the survey is a systematic map displaying how various themes and aspects of sustainability appear among different categories of heritage buildings. Based on the survey, the medieval buildings of Ørslev Kloster are selected as an explanatory case so as to elaborate conditions that promote sustainability in Danish conservation practice. The findings of the survey and the case study frame the discussion.

The main results of the article comprise the state of the art in the intersection between recent conservation works and sustainability and indicate that the listing of a building is not an impediment to working extensively with sustainability in architectural conservation.

KEYWORDS

Danish architectural heritage, architectural conservation, sustainability in conservation, survey

1. INTRODUCTION

With climate change, scarce resources, and loss of biodiversity, there is an urgent need for transition to sustainable development. Agenda 2030 comprises seventeen Sustainable Development Goals (SDG) and 169 associated targets, with a focus on social, environmental, and economic development within planetary boundaries as well as peace and partnership.¹

Building is an important factor in the search for a sustainable future, as it is responsible for circa 39 per cent of global carbon emissions² and accounts for an enormous use of (virgin) resources. Hence, multiple approaches to sustainable building are being investigated, for example, biogenic materials, Zero Energy Building, and regenerative architecture, to name but a few. Other essential strategies are adaptive reuse and heritage conservation. From an environmental perspective, existing buildings and structures are material resources that hold embodied energy, and research shows that, in most cases, energy renovation has a lower carbon impact than new construction, also with regard to preservation-worthy buildings.³ Just as importantly, existing buildings and structures often have social and cultural values that can be preserved through continued use in line with SDG target 11.4 (protection of natural and cultural heritage).⁴ In urban regeneration, architectural heritage is recognized as increasing local identity, public wellbeing, and social inclusion,⁵ yet adaptive reuse and architectural conservation are complex. For instance, the different types of values of the building in question may conflict, there are no standard solutions (new construction may be more economically viable), and there are legal requirements that must be met.

In Denmark, new construction is subject to regulations related to sustainability, for example, energy consumption demands in the operational phase, and, in 2023, the requirement for Life Cycle Assessments (LCA) became mandatory. The latter are implemented stepwise, with gradually reduced emission limits, and include more and more buildings. Similarly, existing buildings are also subject to regulations, for instance relating to energy consumption in the case of renovations. Listed buildings are principally exempted from these requirements and, in certain cases, the same applies to preservation-worthy buildings.⁶ Relatedly, The European Union has revised its Energy Performance of Buildings directive, which aims to reduce the energy consumption of the building stock, mainly by renovating the buildings with the worst energy performance.⁷ As renovation with an exclusive focus on energy performance would be detrimental to architectural heritage, Article 5c is intended to

protect the significance of preservation-worthy buildings whether they have officially been designated as such or not.⁸ Based on current developments, it is likely that sustainability requirements will become mandatory in the conservation and renovation of Danish preservation-worthy buildings in the foreseeable future. Such an approach will be in accordance with the 'Policy Document for the Integration of a Sustainable Development Perspective into the Processes of the *World Heritage Convention*', which calls for 'conservation and management strategies ... aligned with broader sustainable development objectives'.⁹

To summarize, preserving heritage is sustainable, but how is sustainability addressed specifically in conservation work in Denmark? New construction must meet specific regulations, whereas the regulations for designated heritage buildings are fewer and less precise, probably because heritage buildings and their attributed values differ to a large extent.¹⁰ Moreover, there seems to be a considerable focus on measurable aspects of sustainability such as energy consumption and the reduction of emissions (without jeopardizing the significance of heritage buildings,¹¹ even though social and cultural sustainability are no less important.

2. OBJECTIVE AND METHODS

Based on the above, it seems relevant to investigate how the immense focus on sustainability in buildings in general impacts Danish conservation practice and influences approaches to conservation work. Such knowledge is important in order to understand the current landscape of architectural heritage, which leads to the following research questions:

1. How does sustainability influence current Danish conservation practice (in other words, the planning and execution of conservation work on heritage buildings)?
2. How can this knowledge contribute to future conservation practice, particularly in connection with sustainability?

The article is structured around these two research questions. First, the theoretical and analytical framework of the study is established, including the clarification of central concepts such as architectural heritage, architectural conservation, and sustainability in architectural conservation. In order to provide an overview of the field, a survey of the current Danish landscape of architectural conservation is then conducted. The survey examines relevant

sources in order to identify exemplars of architectural heritage that have been subject to conservation work and involve sustainable concerns. Subsequently, the findings of the survey form the basis of the case selection. Next, sustainability in conservation practice is investigated through a single case study. The discussion that follows addresses the methods and findings, and, lastly, the conclusion sums up the study and the main results.

Regarding the delimitation, the study focusses on architectural heritage that has been subject to recent conservation work so as to ensure the topicality of the investigation. Thus, the term 'current' in research question one concerns conservation works completed between 2022 and 2024.¹² Geographically, the study is limited to Denmark.

The main sources applied encompass general literature on architectural conservation, architectural heritage, architectural history and theory, sustainability, research methodologies, and other relevant material. Regarding the case selected, the sources include an interview, literature, drawings, photos, and empirical studies.¹³

The methods applied are both quantitative and qualitative, comprising a survey and case study research. The survey draws methodically on the systematic mapping study (SMS), as such a study 'collates, describes and catalogues available evidence ... relating to a topic of interest'.¹⁴ SMS are well suited to provide an overview in the form of a 'systematic map',¹⁵ and identify gaps or clusters of knowledge, among other aspects. Moreover, SMS are executed following a strict, transparent, and objective method, and are used, for instance, in the fields of social sciences, medicine, software engineering, and environmental science.¹⁶ Case study research is applied, as this method aims to produce in-depth information on a contemporary phenomenon (sustainability in current conservation practice) through exploring one or more cases (architectural heritage that has been subject to recent conservation works).¹⁷ Since Ørslev Kloster registers the highest number of sustainable aspects in the survey, it was chosen as a single case study as a result of its being 'unusual'.¹⁸ The choice also reflects 'information-oriented selection',¹⁹ as the objective of this strategy is to 'maximize the utility of information from small samples and single cases'.²⁰ Lastly, the examination of Ørslev Kloster is carried out as an 'explanatory case',²¹ so as to investigate what conditions promote sustainability in conservation practice.

3. THEORETICAL AND ANALYTICAL FRAMEWORK

This section elaborates the theoretical and analytical framework of the study with a view to operationalizing central concepts for use in the subsequent investigations.

3.1 Architectural Heritage

Architectural heritage comprises buildings and cultural environments, that is, 'a geographically limited area that ... reflects significant traces of social development.'²² According to Article 1 of the International Charter for the Conservation and Restoration of Monuments and Sites (the Venice Charter), built heritage ranges from monuments to vernacular architecture and has '... acquired cultural significance with the passing of time.'²³ Following the Burra Charter, 'Cultural significance means aesthetic, historic, scientific, social or spiritual value for past, present or future generations.' Furthermore, it '... is embodied in the place itself, its fabric, setting, use, associations, meanings, records, related places and related objects.'²⁴ The Nara Document of Authenticity elaborates on cultural diversity and authenticity, expanding the latter to include both tangible and intangible aspects.²⁵

In Denmark, architectural heritage can be categorized in three groups. Firstly, World Heritage Sites are nominated by UNESCO, while the Agency for Culture and Palaces is responsible for the Danish and Greenlandic World Heritage Sites. Secondly, the listed buildings are protected on national level through the Act of Building Preservation, adopted in 1918, and are statutorily agreed on as inalienable. Anything beyond 'ordinary maintenance' (for instance, painting the windows in the existing colour) in both the exterior and the interior requires permission from the Agency of Culture and Palaces,²⁶ and conservation work on listed buildings is usually initiated after careful preliminary examinations. Thirdly, preservation-worthy buildings are nominated and administered by the municipalities under heterogeneous and somewhat inadequate legislation, as some municipalities are more interested in the subject than others. Preservation-worthy buildings are assessed with respect to their exterior and their interaction with their surroundings, often with the so-called 'SAVE' method (Survey of Architectural Values in the Environment). SAVE assesses environmental (that is, the surroundings), culture-historical, and architectural values as well as originality and technical condition on a scale from 1 (best) to 9 (worst). These five parameters (with emphasis on the first three) are then summarized to arrive at the conserva-

tion value.²⁷ It is important to note that there is a large, unreported number of preservation-worthy buildings, since surveys have mainly focussed on urban areas and buildings constructed before 1940. Moreover, the nomination of preservation-worthy buildings is not legally binding until the nominations are incorporated into a municipality or a district plan.²⁸

In summary, there is a notable difference in approaches to World Heritage and listed buildings on the one hand and to preservation-worthy buildings on the other. Work on the former two groups calls for the values-based method approach (see section 3.2).

3.2 Danish Conservation Practice

In the international field of architectural conservation, the term ‘restoration’ generally denotes an approach in which a historic site or building is reconstructed into its original or even an ‘ideal’ appearance – sometimes based on limited evidence. However, in the Danish context, the comprehension of restoration (*restauration*) has developed into many sorts of dealings with architectural heritage, including maintenance, repairs, preservation, renewal, and restoration.²⁹ In this sense of the word, it is pivotal that the intervention (of whatever type) is substantiated in the values-based method with a view to safeguarding the significance of the building or site through a rigorous process.³⁰ Relatedly, conservation architects tend to define themselves as such due to the application of the values-based method rather than the type of buildings or sites that they deal with.³¹

The values-based method as applied by Danish conservation architects generally comprises six steps: 1) registration (for instance, measurements, surveys, structural analyses, building archaeology, and historic paint investigations, usually in collaboration with other fields), 2) documentation (the compilation of the data gathered in a report), 3) values assessment, 4) conservation strategy, 5) programme, and 6) the execution of the conservation project.³²

For many years, architectural conservation in Denmark has been considerably influenced by the modernist approach as implied by the Venice Charter, and also the conservation of Koldinghus Castle executed by Inger and Johannes Exner from 1972 to 1995, including the related conservation strategy that the Exners formulated as part of their work on the ruined castle. The strategy introduced so-called ‘keys’, which aim to bring about a deeper understanding of the specific building, namely ‘originality’, ‘authenticity’, ‘identity’, and

‘narrativity’.³³ Today, Koldinghus is still among the most prominent conservation projects in Denmark and the ‘keys’ continue to frame discussions of approaches to architectural conservation. Within the last decade, tendencies towards less dogmatic approaches to conservation have arisen. For instance, in connection with the much-discussed delisting of the Brutalist Viking Ship Museum in Roskilde, Søren Vadstrup suggested demolishing the damaged parts of the building and rebuilding it based on the original drawings by Erik Christian Sørensen, but with improved construction and materials.³⁴

With a view to avoiding confusion in the international and Danish comprehension of restoration, this article applies the terms ‘architectural conservation’ to denote management of architectural heritage with the aim of preserving its significance, and ‘conservation work’ to denote interventions. ‘Conservation practice’ comprises approaches to architectural heritage as executed by architects in this field. All such approaches are substantiated by or apply the values-based method. Lastly, it is important to emphasize that architectural heritage finds itself in the area of tension between continued use as the best means of preservation,³⁵ and the strict concerns posed with respect to architectural conservation due to, for instance, significance or rarity.

3.3 Sustainability and Architectural Conservation

Architectural heritage is linked to sustainable development on both an international³⁶ and a national level.³⁷ Relatedly, there are numerous definitions of sustainability, and also more approaches to sustainable architecture that influence and apply to a greater or lesser extent to architectural heritage.³⁸

At present, Life Cycle Assessments (LCA) are gaining currency in Denmark, also in the case of heritage buildings. For instance, Serrano et al. compares two LCA scenarios for a heritage building: energy refurbishment and ‘traditional’ conservation. The latter tends to perform equally well or slightly better than the former, while it also retains the significance of the building.³⁹ The philanthropic foundation Realdania has supported more research into building culture and climate, for example, LCA calculations of energy renovations with regard to conservation values.⁴⁰ Additionally, Realdania has conducted retrospective LCA calculations on the conservation work executed in its approximately sixty buildings (representing various types from the last five hundred years) and arrived at the overall conclusion that the climate impact of conservation and adaptive reuse is smaller compared to new construction.⁴¹ LCA provide exact data on the environmental impact of the extrac-

tion, production, and transportation of building materials (A-stage), whereas the modules of the B-stage (for instance, user behaviour) can be criticized for being 'scenarios based on qualified guesses'.⁴² Moreover, LCA do not include sustainable aspects such as daylight, accessibility, or facilities for the common good, which thus argues in favour of a wider approach to sustainability.

In 2001, Simon Guy and Graham Farmer published an influential article titled 'Reinterpreting Sustainable Architecture: The Place of Technology', in which they brought into focus the many different aspects related to sustainability. The authors identified six so-called 'logics' of sustainable architecture, each representing 'a specific sample of ideas, concepts and categorizations that are produced, reproduced and transformed in a particular set of practices ...'.⁴³ Though the field has indisputably developed a great deal since then, these logics still represent different issues connected with sustainability, with the notion now seen rather as the whole of them and not just the approach of one single logic. For the purpose of this study, these multifarious approaches to sustainability are considered an appropriate starting point for the elaboration of sustainability in architectural conservation.

The eco-technical logic aims to solve environmental challenges by means of science, and it focusses mainly on (energy) efficiency.⁴⁴ Even though listed and preservation-worthy buildings are not subject to the rigorous standards imposed on new construction, energy improvements executed in accordance with the significance of the heritage building in question are common and also necessary for reasons of comfort, economy, and climate.⁴⁵ The conservation of Poul Henningsen's own house (carried out in 2015–16) is a fine example of this issue, as the choice of aerogel enabled the house to be heated with the economy of an average household without compromising the significance of the building.⁴⁶

In contrast, the eco-centric logic emphasizes biodiversity and thus strives to thoroughly reduce the ecological footprint of buildings.⁴⁷ Today, tools like LCA calculate the environmental impact of buildings and, with regenerative architecture, the aim is now not just to reduce impacts, but also to affect ecosystems in a positive manner.⁴⁸ In the last few years, there have been major developments in architecture with regard to reused and biogenic materials, which also influence architectural heritage. For instance, the pilot project on the listed Kirkehøjgaard investigates two approaches to architectural conservation: 'conventional' versus low-emission (for example, biogenic) materials

in an LCA perspective and without compromising the significance.⁴⁹ Reduced climate impacts are also expressed in adaptive reuse (see the introduction) and considerations of lifespans, durability, and choice of energy source.⁵⁰

The eco-aesthetic logic concerns building design within an ecological worldview that aims 'to break free from strictly formative interpretations of architecture ... with an anthropocentric attitude to nature.'⁵¹ Hereby, there seems to be an antithesis between the eco-aesthetic logic and heritage buildings. It can, however, be argued that aesthetic aspects are always included in the comprehension of architecture (with reference to, for example, Vitruvius's definition of architecture). Furthermore, the Venice and Burra Charters stress the significance of architectural heritage in which aesthetic values are included (see section 3.1). Since the objective of the values-based method is to safeguard the significance of architectural heritage in the process of conservation, aesthetics is implicitly taken into consideration in this.

Among the core values of the eco-cultural logic are authenticity, culture, and so-called bioregions, in other words, territories combining cultural and ecological aspects.⁵² Additionally, this logic 'emphasizes both the preservation and conservation of the variety of built cultural archetypes that already exist'.⁵³ Thus, architectural conservation is part of the eco-cultural logic in line with target 11.4 of the Sustainable Development Goals (SDG), and, according to ICOMOS, studies of heritage may promote climate adaption.⁵⁴ Solutions in conservation work that particularly aims to preserve the old or original fabric or identity are also regarded as cultural sustainability.

The eco-medical logic stresses the health of individuals,⁵⁵ which corresponds to people's right to live in a healthy environment.⁵⁶ In construction, this concerns daylight, natural ventilation, organic surface treatments, and natural materials.⁵⁷ Unfortunately, it is not unusual for heritage buildings to be challenged with respect to, for example, ascending soil moisture and mould, for which reason indoor climate,⁵⁸ including comfort, daylight, and (natural) ventilation, is important in order to ensure the continued use of such buildings. For instance, one of the main issues in the conservation work on Rudersdal Town Hall was the indoor climate.⁵⁹

Lastly, the eco-social logic regards the ecological crisis as brought about by large-scale social issues and sees democracy as the solution. Moreover, it highlights the need for decentralization, self-sufficient societies, building

in accordance with local conditions, and shared construction technologies.⁶⁰ The eco-social logic agrees with more of the SDGs, for instance, goal numbers 11 and 16.⁶¹ In architectural heritage this translates into participatory democracy, accessibility for the public, and the establishment of shared facilities.

3.3.1 Summary

Based on the above, sustainability in architectural heritage concerns many different matters: improving energy performance (with different solutions carried out with respect to the significance), renewable energy sources (for example, wind, solar, or geothermal energy), or district heating, biogenic and reused materials, durability and life spans, special solutions that particularly preserve historic and/or original fabric, or the identity of a building, indoor climate, comfort, daylight, ventilation, acoustics, participatory democracy, (public and/or disabled) accessibility, flexibility, and shared facilities. Furthermore, the study remains open to other sustainable aspects that may appear.

4. SURVEY: THE CURRENT DANISH LANDSCAPE OF ARCHITECTURAL CONSERVATION

A SMS usually includes four to six stages,⁶² which is why this survey comprises the planning, searching, screening, and reporting stages. It is important to note that a SMS usually maps research articles and reports from databases, whereas this survey targets conservation projects, for which publication is not a necessity. Consequently, it is very unlikely that the survey will generate an exhaustive list of conservation projects, and the aim is thus to produce a sample with a thematically satisfactory dispersion for further investigation.⁶³ Lastly, this survey was carried out by one person.⁶⁴

4.1 Conducting the Survey

The scope of the study concerns the intersection between current Danish conservation practice and sustainability, which is operationalized with the following two research questions: 1) Which heritage buildings have been subject to conservation work? and, 2) What types of sustainability were addressed in this conservation work? The criteria for inclusion comprise reflections on sustainability (see section 3.3.1.) and moreover, the conservation work must have been completed in 2022 or later. Figure 1 shows the survey method, including the number of projects identified, incorporated, and included.

The search consisted of database selection, in other words, a journal and webpages, since these sources are considered best suited to identifying exemplars of recent conservation work on heritage buildings.⁶⁵ The search terms were defined⁶⁶ and data from the search was manually entered in an Excel file.⁶⁷ For temporal reasons, the survey attempted to focus on projects within the time delimited, yet some websites do not feature the year of completion. A total of 118 unique projects were identified in the search.

The screening process included several steps, with the first step based on the primary inclusion criteria, that is: 1) completion in 2022 or later, and, 2) type of project. Consequently, projects finished before 2022 or lacking the year of completion were excluded. Projects assessed as not being architectural conservation were also removed from the list.⁶⁸ Since the Danish understanding of *restauration* is rather broad, each project was carefully considered and, if necessary, an additional search was carried out.⁶⁹ As the screening process concerns conservation works, it does not follow the typical title, abstract, and full text approach. Instead, the incorporated project descriptions were scrutinized for references to sustainability.⁷⁰ Examples include straightforward terms like 'daylight' or new, technical installations carefully fitted into existing routes or cavities (entered as 'preserve historic fabric'). Some descriptions mention improvements to the energy performance and others energy optimization. Both are categorized as 'improved energy performance'. It is important to note that sustainability-related issues were registered as stated in the descriptions and only those mentioned.⁷¹ The first part of the screening incorporated thirty-one projects, nine of which mention sustainable aspects and were thus included.

As part of the screening, 'snowballing' was carried out.⁷² The first stage was conducted on the websites of firms that were not included in the original list of conservation firms, but nevertheless appeared in the search results. The second stage comprised the systematic examination of all the projects from the years 2022, 2023, and 2024 recommended on the website of *Renovoverprisen*, since recommended projects had to include descriptions of fixed assessment criteria relating to sustainability.⁷³ Three projects from the initial search were then included, since the recommending descriptions mention sustainable aspects. The final stage of the snowballing was the examination of the websites of firms that appeared in the second stage of snowballing. Finally, two of the projects included were identified based on other sources.

To summarize, a total of 304 projects were identified, twenty-five of which were repetitions, thus resulting in a total of 279 unique projects. Fifty-seven projects were incorporated as conservation works, of which twenty-eight were included as they describe sustainable aspects.

The reporting stage comprised the data extraction, systematic map, and analysis. Of the twenty-eight projects, twenty-three concern listed buildings, four

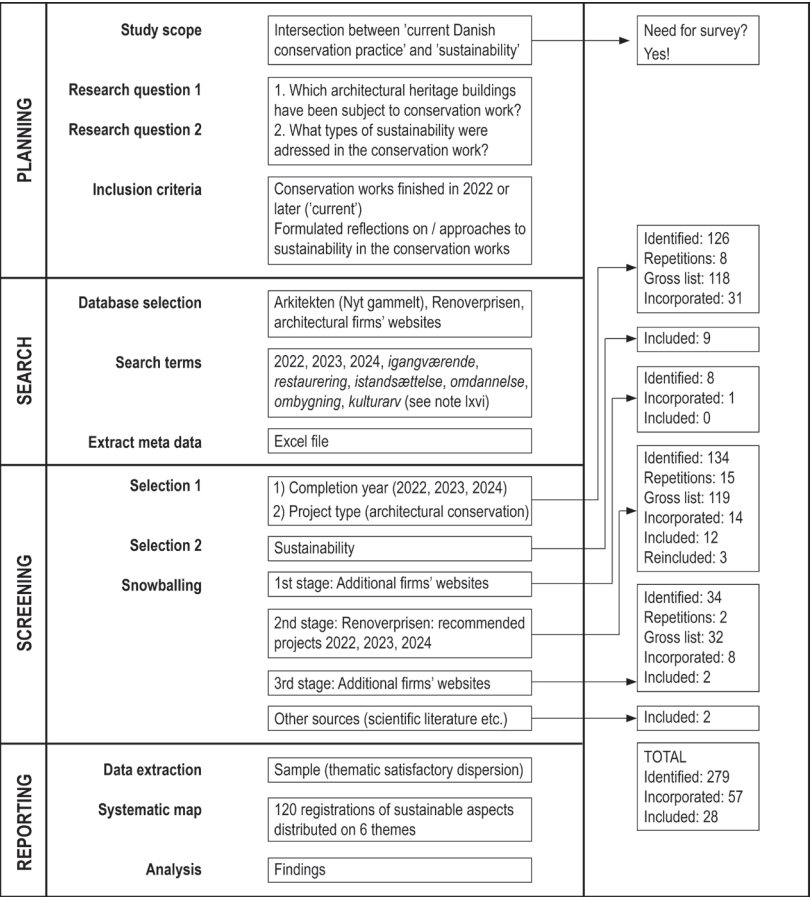


Figure 1: Survey method: stages (left), approach (middle), and track of identified, incorporated and included projects (right). Figure: the author

concern preservation-worthy ones and one concerns a church.⁷⁴ The twenty-eight projects included were carried out by more than twenty different firms (including the Agency for Culture and Palaces), and are distributed in seven categories: housing (6), housing and other (5), hotel, conference facilities, etcetera (3), offices, commerce, and public administration (5), culture and churches (3), teaching and research (4), and libraries (2). Building owners range from the State of Denmark (for instance, Rigsarkivet [the National Archive] in Viborg) to large companies (such as Home of Carlsberg) to small idealistic projects (for example Ragnhilds Gård). In terms of time, the buildings range from the Middle Ages (Sorø Klosterkirke was completed in 1201⁷⁵) to the late twentieth century (Paustians Hus from 1987). Hence, it can be argued that there is a satisfactory dispersion of various parameters amongst the projects included and that these projects constitute a sample for further investigation. In total, the projects comprise 120 references to sustainability, see the systematic map in figure 2. The thematic distribution of the sustainable aspects is as follows: energy (14), environment (22), health (37), cultural-historical aspects (15), social aspects (30), and other (2).⁷⁶

4.2 Analysis

First of all, health aspects occur remarkably more frequently than other themes, as health constitutes circa 31 per cent of all the registrations and appears in twenty different projects within all building categories. Indoor climate usually includes a larger number of elements such as air quality, moisture, temperature, draughts, daylight, and acoustics. Therefore, it can be argued that there is such a large number of health-related registrations due to the division into subtopics. Yet, daylight, acoustics, or ventilation are approached very differently in architecture, thus making the number appear reasonable. Conservation work in heritage buildings often include attention to a well-functioning indoor climate, as dwellings, offices etcetera must be habitable for people or suited to their purpose, such as the safekeeping of documents (Rigsarkivet in Viborg). It is probable that with the Building Regulations from 2011 and later attention to indoor climate has increased, as concrete requirements with respect to 'thermal indoor climate' were posed.⁷⁷ For instance, the description of Paustians Hus specifically mentions 'requirements' regarding indoor climate as challenging, since the overall values of the listing must be sustained in the conversion into an office building.⁷⁸ There are highly likely more decades between the execution of extensive conservation work on a heritage building,⁷⁹ and it is probable that the heritage buildings included in this survey not have been subjects to such work after 2011 and

up until today, which explains the presence of health-related concerns. Relatedly, some of the firms in the survey also have large divisions designing new buildings (with a focus on health), which might influence their approach to heritage, or it may be necessary to involve indoor climate specialists in

	Sustainable aspect / Category and building	Housing																Housing + other				Hotel / conf. etc.		Culture / Office / trade / pub- lic administration				Teaching / research				Library		Total
		● Improve energy performance	● New energy source	● Durability / Life span	● Reuse / recycling	● Biogenic materials	● Reduce construction waste	● Optimise / save resources	● LCA calculations	● Comfort	● Daylight	● Acoustics	● (Natural) ventilation	● Indoor climate	● Preserve historic fabric	● Arch. specialised solutions	● Improve cultural environment	● Accessibility (public / disabled)	● Users' / residents' needs	● Shared facilities	● Flexibility	● Dissemination	● Social sust. / Non-profit	● Increased fire safety	● Security	● Other								
Housing	Bakkehusene (L)	●								●																	4							
	Nyboder (etape II) (L)	●							●			●			●												9							
	Kunstnerkollegiet (L)			●																				●			2							
	Amalgården (L)	●			●				●	●	●														●		7							
	Lærtingenes Hus (4)	●			●	●	●	●								●						●	●				9							
	Kirkehøjgaard (L)					●		●																			2							
Housing + other	Ragnhilds Gård (2)														●			●			●	●			●	5								
	Nybrog. / Snareg. (L)			●	●							●								●		●	●			3								
	Stormgården (L)				●									●		●										6								
	Volden 18-20 (3)								●						●		●					●	●			3								
	Nørre Sødam (L)	●	●						●				●													4								
	Herning Højskole (L)	●			●		●		●						●											5								
Hotel / conf. etc.	Ørsløv Kloster (L)	●	●		●		●		●					●	●		●	●					●	●		12								
	Carlsberg Academy (L)											●														1								
Culture / Office / trade / pub- lic administration	Lyngby Rådhus (L)										●		●						●							3								
	Stellings Hus (L)				●							●														2								
	Paustians Hus (L)										●	●		●			●									5								
	Det gl. Æggepakkeri (3)	●			●				●	●	●	●				●		●								7								
	Nordre Toldbod 3-7 (L)	●							●			●										●				3								
	Sorø Klosterkirke (C)															●	●									2								
Culture / Office / trade / pub- lic administration	Home of Carlsberg (L)										●	●	●			●										4								
	Medicinsk Museion (L)				●							●										●				3								
	Ole Rømer Obs. (L)				●	●						●	●			●	●				●					7								
	Riber Kjærgaard (L)	●									●		●													3								
	Observatoriebyggn. (L)												●		●											1								
	Krogerup Højskole (L)				●									●												2								
Library	Rigsarkivet, Viborg (L)	●			●							●														3								
	Eksercerbygget (L)											●	●		●											3								
Total		11	3	2	10	4	2	2	5	5	6	8	13	6	7	2	6	7	1	2	6	5	2	1	2	10								

Figure 2: The systematic map showing the distribution of registered sustainable aspects among the included conservation work. The colours denote different themes among the aspects. Energy (blue), environmental aspects (green), health (yellow), culture-historical aspects (claret), social aspects (red), and other (grey). (L) Listed building, (X) preservation-worthy building with conservation value x, (C) church. Figure by the author

conservation work on buildings with a poorly functioning indoor climate in order to ensure their continued use.

With respect to energy, only fourteen examples were registered. Since the oil crises of the 1970s, there has been a major focus on buildings' energy consumption, including in the field of architectural heritage. Consequently, such buildings may already have been subject to improvements of their energy performance. This conclusion is also reached by Steffen Petersen et al. in their investigation of connections between heritage buildings and LCA.⁸⁰

Environmental aspects generated twenty-two hits and they were identified particularly in the category of housing. Lærtingenes Hus distinguishes itself with five aspects in this theme. In the current construction sector, there is a large focus on reuse and recycling (of high-quality materials), and, accordingly, this survey registered ten examples of such a focus. They include: 1) reused materials and components purchased from another building,⁸¹ 2) reused materials of no significance taken from one part of the building and used in another,⁸² 3) removed materials and components sold on for reuse,⁸³ and, 4) 'reuse' that equals mandatory preservation. In listed buildings, the building fabric is principally inalienable, from which it follows that historical building materials or components are preserved in the original (or in special cases, a new) position, as they are significant to the identity and authenticity of the building. Hence, the maintenance and repair of original windows, the reuse of existing fabric in its original position, or the relocation of a historic door from one room to another is not regarded as reuse in conservation practice. This highlights reflections on the baseline and, relatedly, greenwashing.

With respect to the cultural-historical theme, fifteen examples were identified. Interestingly, such aspects are mainly found in the categories of housing, housing and other, hotel, conference etcetera, and teaching and research, amounting to a total of thirteen. It is also remarkable that no example was registered in the category of culture and churches. As mentioned in section 3.3, it is very difficult to distinguish between architectural conservation as acts of cultural sustainability and specific dealings within architectural conservation as examples of cultural-historical sustainability. This might thus offer an explanation.

The study surveyed thirty cases of social aspects are distributed amongst all the categories apart from libraries. The significant number (25 per cent)

underscores that attention to these conditions is important in order to sustain the use of heritage buildings.⁸⁴

Overall, the categories with the highest average of registrations distributed amongst the number of buildings are housing ($33/6 = 5.5$) and hotel, conference etcetera ($18/3 = 6$), the latter of which was raised considerably by Ørslev Kloster. It is noteworthy that eighteen of the projects describe one to four different sustainability aspects, seven projects comprise five to seven aspects, and three projects (Lærilingenes Hus, Nyboder, and Ørslev Kloster) include nine to twelve different sustainability aspects. The medieval Ørslev Kloster (VMB Arkitekter A/S) and Nyboder (Fogh & Følner Arkitektfirma A/S) from the seventeenth and eighteenth century are both listed, whereas Lærilingenes Hus of 1887 is preservation-worthy (conservation value of 4). It is owned by Dansk Håndværk (Danish Craftmanship),⁸⁵ and the conservation work was carried out by apprentices in different crafts, with the aim of promoting Danish craftmanship, showing the potentials in renovation and increasing cooperation between different trades.⁸⁶ As previously mentioned, LCA calculations examined the pros and cons of renovation versus conservation of Lærilingenes Hus,⁸⁷ and the work was executed as architectural conservation. Moreover, three projects each registered seven aspects; Amaliegården from 1750–87, Ole Rømer Observatoriet from 1911, and Det gl. Æggepakkeri from 1923. The first two are listed and the latter is preservation-worthy (conservation value of 3) and the work was executed by three different firms unique from the three firms mentioned above.

4.3 Sources of Error

Beforehand, it was acknowledged that the survey would not be able to map all Danish conservation projects in the selected period. Explanations comprise unreported work, lack of information on firms' webpages, or no webpage at all. It was also not possible to predict what types of conservation work would come to the surface. Articles in *Arkitekten* are often chosen to represent a particular theme or hold a particular topicality, and, similarly, the projects recommended on the website of Renoverprisen are likely to target its specific assessment criteria. It can nonetheless be concluded that the sample shows a thematically satisfactory dispersion amongst the projects included.

The search was conducted in Danish and translated into English, which may result in some inaccuracy. Manual screening, assessment, and entries

performed by one person may also lead to mistakes inadvertently, though the choice of a strict, scientific method was intended to avoid such a problem.

The findings depend on the quality of the project descriptions, and it is possible that sustainable aspects were omitted in deficient descriptions.⁸⁸ The aspect of reuse highlights the baseline in architectural conservation and indicates that some descriptions appear to greenwash their conservation work.

4.4 Main Findings of the Survey

The survey identified twenty-eight projects that included sustainability and registered 120 aspects of such. Interestingly, circa 31 per cent of the registrations concerned health and 25 per cent social aspects.

Based on the analysis, it appears that being designated as listed is no obstacle to sustainable approaches. This conclusion is supported by the six best-ranked buildings and the diversity among their age, category, and the firms involved in the conservation work.

5. CASE STUDY: ØRSLEV KLOSTER

With a view to investigating how sustainability may be promoted in conservation practice, a case study was executed. The selected case is Ørslev Kloster (see fig. 3), since this building has the highest number of registered sustainable aspects in the survey. Moreover, these aspects are distributed amongst five sustainability themes (see fig. 2). To obtain data on the conservation process, an interview was carried out with Garry Keyes, an archaeologist, academic employee, and communicator at Ørslev Kloster. Garry Keyes took part in the planning and execution of the conservation work, including archaeological registrations, construction meetings, demolition, and keeping track of palletized materials, and is therefore a primary source on the conservation process.

5.1 Introduction of Ørslev Kloster

The convent of Ørslev Kloster was presumably founded in the twelfth century. The convent church (now parish church) was probably built around 1150 and the other three existing wings of the convent were likely constructed in the fourteenth, fifteenth, and early sixteenth century. After the Reformation, the convent was phased out, and the buildings were turned into a manor house and rebuilt in the Baroque style in the eighteenth century. Decline in the

nineteenth century led to wide-scale decay, which is why the National Museum undertook necessary restoration works in the early twentieth century. With the Act of Building Preservation, Ørslev Kloster, in 1918, was amongst the first listed buildings in Denmark. The site was sold to Olga Sponneck in 1933, and after her death, in 1964, the three convent buildings were converted into a work retreat at her request.⁸⁹

Ørslev Kloster is among the oldest listed buildings in Denmark and thus contains many historic traces which had to be taken into account before and during the conservation work. The limits of the conservation work were quite fixed and all decisions had to be approved by the authorities. Circumstances are further complicated as the site is an ancient monument. Consequently, excavations under existing floors would affect historic layers from the manor and convent periods. All destructive interventions during the conservation process had to be documented and registered, as they may reveal important information on former layouts, materials used, etcetera.⁹⁰



Figure 3: Ørslev Kloster seen from the south. Photo by the author

5.2 Interview with Garry Keyes

The interview was based on the following three questions; 1) How did you work with sustainability in the conservation work?, 2) Which aspects of sustainability did you focus on?, and, 3) What has been difficult with respect to sustainability?⁹¹

Garry Keyes (GK) started the interview by introducing the overall frame and major complexity of the project. Preliminary examinations were executed from the 2000s onwards as a prelude to the recent conservation work in 2020 to 2023. The project comprised an overall plan for the site as well as comprehensive conservation work and the refurbishment of the three convent buildings and adjacent porter's lodge.

Regarding question 1, GK stated that sustainability concerns many different matters and, here, it is defined by local conditions. In this case, economic, environmental, social, and cultural aspects were all included. GK mentioned 'integrated construction' (dialogue between the owner, the consultant, and the Agency for Culture and Palaces) as a key factor for success, both in order to complete the project within an economical frame and also with respect to sustainability. For instance, reuse was formulated as an objective of the conservation work. Hence, demolition was carried out by the employees of Ørslev Kloster, but using the machines of the contractor, which presupposes trust with respect to responsibility etcetera.

Concerning question 2, GK outlined continued use, atmosphere and materials, energy consumption, indoor climate, reuse, and nonprofit use. The main objective of the work was to safeguard the buildings and the sustainability of the work retreat, in other words, to ensure that the site would be self-supporting in future. A related aim was to preserve and restore the particular atmosphere of the convent as an ongoing site for contemplation, tranquility, and work. Consequently, traditional building materials were chosen and, similarly, the concrete applied in the 1930s was removed to improve the indoor climate. Existing routes for sewage were reused to preserve the historical fabric. With respect to the demolition, all the removed materials were palletized and records of them kept, with the aim of reusing as much as possible, which also helped in balancing the budget. Some materials were rebuilt into furniture. Another main objective concerned the source of energy. For many years, the buildings had been heated by an oil-fired boiler. This and other options were available, yet the decision was made to establish

a small straw-fired district heating plant.⁹² In order to maintain the social accessibility of the work retreat, the decision was made not to offer board to guests and, thus, to keep prices as low as possible with the aim of a nonprofit



Figure 4: Photos of Ørslev Kloster. 1) The gate to the work retreat with the east wing (left) and the apse of the church (right). 2) Floor tiles from the west wing corridor are now reused in the basement. The dining table (in the room with the red tiles) is made of reused floor boards from one of the living rooms. 3) The new kitchen with the old fireplace. The flooring comprises original tiles (upper left), reused stones in front of the fireplace (purchased from Østre Landsret [Danish Eastern High Court]), surplus stock purchased from Falkenløve (the quadratric tiles), and reused tiles from the building itself to the right of the fireplace. Photos: the author

stay. Equally important, fitting in a modern production kitchen was avoided, as it would have been detrimental to the old buildings.

Lastly, with reference to question 3, GK highlighted the need for a consistent line in the conservation process as well as the importance of cooperation and daily presence on the construction site so as to achieve sustainable solutions. The use of relatively untested limecrete – opposed to bricks and lime that have been used in Danish construction for many centuries – caused some uncertainty. The exchange of knowledge with similar medieval complexes may possibly have improved the conservation work at Ørslev Kloster (that is, resulting in savings of time and money). Retrospectively, GK would have further improved the planning with respect to sustainability and also organized the reused materials in a more suitable manner.⁹³

5.3 Data Analysis

The analysis examines the data from the interview in order to identify the factors that promoted sustainability in the conservation work. Beforehand, the building owner had obtained in-depth knowledge of Ørslev Kloster through investigations of the historical building and had a clear notion of the significance of the building in line with good conservation practice.⁹⁴ Additionally, prior to beginning the conservation work, a new scheme had been developed for the site and additional objectives on sustainability formulated such as a new energy source, extensive reuse, removing concrete to improve the indoor climate, and ensuring social accessibility. Good collaboration and trust (integrated construction) and the building owner's daily presence on the site contributed to completing the work within the economic and temporal framework as well as the realization of the sustainable initiatives.⁹⁵

5.4 Findings of the Case Study

The extensive preliminary work promoted sustainability. Sustainable objectives were established by the building owner and then executed in cooperation with the consultant and the Agency for Culture and Palaces. The age and complexity of the building combined with the requirements related to the listing and location on an ancient monument highlight that such conditions are no impediment to achieving sustainability in architectural conservation.

6. DISCUSSION

Architectural heritage is essential to sustainable development due to its social and cultural values, material resources, and the embodied energy and carbon.

Moreover, each individual conservation project ought to comprise sustainable concerns.⁹⁶ In the context of Denmark, however, the latter is complicated by the fact that there is no overall information on sustainability and few legal requirements. Recent studies from England, Norway, and Denmark, among other countries, underscore the major focus on LCA, carbon emissions, and architectural heritage, and have clarified the potential of architectural conservation from the perspective of carbon emissions.⁹⁷ Nonetheless, and as already pointed out, LCA does not cover sustainability related to health, social, and cultural matters. Since this study intended to apply a broad understanding of sustainability, it drew on the six logics developed by Guy and Farmer. All the logics seem to concern themes that are topical in current conservation practice and beyond, and also correspond with the SDGs, which supports the choice as well as the relevance of the analytical framework.

As a means to generate an overview of the intersection between current Danish conservation practice and sustainability, a survey was carried out. The study identified fifty-seven conservation projects, twenty-eight of which included sustainable aspects (the sample). Due to the difficulties described with respect to publication, the share of conservation works comprising sustainability should arguably be higher. Yet, it is interesting to note that seventeen of the projects included were identified via the website of Renoverprisen, which, among other things, focusses on sustainability and, thus, the recommended projects are possibly more inclined to feature such aspects. Relatedly, the aspect of reuse has been revealed as greenwashing even more projects. Sustainability is recognized as one of W.B. Gallie's 'essentially contested concepts',⁹⁸ and 'it signifies or accredits some kind of valued achievement'.⁹⁹ Corresponding to this and with the present focus on sustainability, including greenwashing, sustainable aspects are likely to be emphasized rather than ignored. Consequently, this indicates that working with sustainability only happens to a somewhat limited extent in current Danish conservation practice, despite the recommendations of UNESCO. This conclusion is underscored by the fact that eighteen of the conservation works included in the survey comprise one to four sustainable aspects and only three projects comprise nine or more.

It is also interesting to note that 70 per cent of the aspects surveyed concern ones other than energy and the environment. The number confirms that circumspection is necessary when applying LCA as the only 'sustainability tool' in conservation practice, since such an approach may be detrimental to

sustaining other qualities of architectural heritage that make the buildings attractive to residents, users, and (local) society. The result suggests increasing the focus on social, cultural, and health aspects in line with the SDGs.

Regarding the three conservation projects with nine to twelve sustainable aspects, two are listed and the third is treated as such. Besides that, there is heterogeneity amongst these projects with respect to age, building category, and the firms executing conservation work, which was supported by the three buildings with seven aspects each. A main conclusion is that a listing is not an obstacle to sustainability in architectural conservation and that sustainable concerns are not rejected by the Agency for Culture and Palaces. Such a conclusion is supported by the recent low-emission conservation of Kirkehøjgaard carried out by the Agency for Culture and Palaces.

Since firms and the Agency for Culture and Palaces are no hindrance to sustainability in conservation practice, the owners of buildings appear to hold the overall responsibility for these ambitions. The explanatory case of Ørslev Kloster underscores this supposition, as this building owner had formulated sustainable objectives before the conservation work began,¹⁰⁰ and the building registered the highest number of sustainable aspects in the survey. Relatedly, among the findings of the survey were a total of thirty-seven (circa 31 per cent) registrations of health aspects, which is regarded as an outcome of the Building Regulations of 2011 onwards, which now influence conservation practice. This indicates that more legislation may be needed to increase other sustainable aspects in conservation practice. Legislation is, however, difficult, because heritage buildings and their values differ to a great extent. As conservation work on listed buildings is subsidized by the Agency for Culture and Palaces, it makes sense to recommend mandatory requirements for sustainable approaches in order to obtain subsidies. Sustainable initiatives could be examined as part of the preparation and in parallel to investigations of historic buildings, as in the case of Ørslev Kloster.

Ørslev Kloster encompasses twelve different sustainable aspects distributed amongst five different themes, which is why this building was chosen as a case study for further investigation of sustainability in conservation practice. The study elaborated on approaches to sustainability in the conservation process. Learnings from Ørslev Kloster comprise cooperation and integrated construction, the importance of planning sustainability initiatives beforehand, and the exchange of experience with similar building typologies.¹⁰¹

Initially, the case was selected as being unusual due to the large number of sustainable aspects, and was used as an explanatory case with reference to the 'information-oriented' strategy for maximizing information.¹⁰² Yet, in light of the investigation, it turned out to be a critical case. Such cases are particularly suited to verifying or falsifying information, as they allow for logic deduction as follows: 'If it is (not) valid for this case, then it applies to all (no) cases.'¹⁰³ Ørslev Kloster is characterized by an exceptional situation: it goes back to the Middle Ages, is amongst the oldest listed buildings in Denmark, with extensive restrictions on the building fabric and furthermore, and is built on top of an ancient monument. Despite all these circumstances, the conservation work was thoroughly informed by sustainability. Given that such an approach was possible at Ørslev Kloster, with its many restrictive conditions, and did not compromise the building or overrun the budget, then it should be possible in most heritage buildings.

Lastly, a methodical outcome of this study concerns the survey. It shows that the scientific, transparent, and replicable method of SMS can be 'transposed' to architectural research and building surveys. The method seems to perform particularly well in keeping track of metadata and generating a systematic map that provides an easily understandable overview of a subject matter.

7. CONCLUSION

This study investigated the influence of sustainability in current Danish conservation practice and how this knowledge may contribute to future conservation work. This article has thus presented a survey that created an overview of recent conservation work and how the buildings included have dealt with sustainability. In connection with this, the website of Renoverprisen proved to be an important source of information. The data was compiled into a systematic map highlighting sustainable aspects with respect to building categories. For the purpose of illustration, a case study was carried out to elaborate further on sustainable conservation.

By way of a quantitative and a qualitative study, this article sheds light on the state of the art in sustainability and conservation practice. Unfortunately, sustainability is not as prevalent in current Danish conservation practice as expected, despite the recommendations that it be included in conservation and management strategies.¹⁰⁴ Further outcomes are the identification of a small number of fine examples in which building owners work comprehen-

sively with sustainability (in some cases, despite being very complex buildings) and that listings are no obstacle to doing so. Based on the survey and with the aim of safeguarding architectural heritage, conservation practice should work with sustainability in a broad sense. Lastly, it is highly likely that the development of a sustainability approach and more (legal) requirements may promote sustainability in architectural conservation even further, while nevertheless not jeopardizing the significance of heritage buildings.

NOTES

¹ United Nations, 'Transforming our world: The 2030 agenda for sustainable development', n.d., <https://sdgs.un.org/2030agenda> [all URLs here accessed in January 2026].

² Matthew Adams, Victoria Burrows, and Stephen Richardson, *Bringing Embodied Carbon Upfront: Coordinated action for the building and construction sector to tackle embodied carbon* (London and Toronto: World Green Building Council, 2019), p. 7.

³ Selamawit Mamo Fufa, Cecilie Flyen, and Christoffer Venås, *Grønt er ikke bare en farge: Bærekraftige bygninger eksisterer allerede* (SINTEF, 2020); Rambøll, *Analyse af CO₂-udledning og totaløkonomi i renovering og nybyg* (Copenhagen: Rambøll Management, 2020); Steffen Petersen et al., *Bygningskultur og Klima* (Realdaia, 2021).

⁴ United Nations, 'Transforming our world'.

⁵ Bie Plevoets and Koenraad van Cleempoel, *Adaptive Reuse of the Built Heritage: Concepts and Cases of an Emerging Discipline* (London and New York: Routledge, 2019), p. 52.

⁶ Bygningsreglementet, '§ 274 – § 279 Energikrav ved ombygninger og udskiftning af bygningsdele' (§ 278, subsections 2 and 3), n.d., <https://byggningsreglementet.dk/Tekniske-bestemmelseser/11/Krav>.

⁷ European Commission, 'Commission welcomes political agreement on new rules to boost energy performance of buildings across the EU', 2023, https://ec.europa.eu/commission/press-corner/detail/en/ip_23_6423.

⁸ European Parliament, 'P9_TA (2023)0068. Energy performance of buildings (recast)' (specifically 5b and 5c), 2023, https://www.europarl.europa.eu/doceo/document/TA-9-2023-0068_EN.pdf.

⁹ UNESCO, 'Policy Document for the Integration of a Sustainable Development Perspective into the Processes of the World Heritage Convention', 2015, <https://whc.unesco.org/en/compendium/55>.

¹⁰ According to BR18 (the current Building Regulations) article 13, subsection 5, relaxation of or exemption from requirements in the Building Regulations may be given to listed buildings if the demands are irreconcilable with the preservation values. See Bygningsreglementet, '§ 7 – § 15 Ansøgning om byggetilladelse' (§ 13, subsection 5), n.d., <https://byggningsreglementet.dk/Administrative-bestemmelser/Krav>.

¹¹ Slots- og Kulturstyrelsen, 'Energiforbedring af fredede og bevaringsværdige bygninger', n.d., https://slks.dk/fileadmin/user_upload/SLKS/Omraader/Kulturarv/Bygningsfredning/Gode_raad_om_vedligeholdelse/13.1_Energiforbedring_af_fredede_og_bearingsvaerdige_by.pdf.

¹² Concerning the temporal delimitation, the search and associated snowballing were conducted from May to August 2024, see notes no. 64 and 71, meaning that the conservation work had to have been completed and published between January 2022 and July 2024 in order to be surveyed.

¹³ Some of this material was retrieved through right of access to documents in the archives of the Agency for Culture and Palaces.

¹⁴ Katy L. James, Nicola P. Randall, and Neal R. Haddaway, 'A methodology for systematic mapping in environmental sciences', *Environmental Evidence* 5, no. 7 (2016), p. 3, <https://doi.org/10.1186/s13750-016-0059-6>.

¹⁵ Toni Taipalus, 'Systematic Mapping Study in Information Systems Research', *Journal of the Midwest Association for Information Systems* 1 (2023), pp. 9–22, esp. p. 17, <https://urn.fi/URN:NBN:fi:jyu-202401161329>.

¹⁶ Kai Petersen, Robert Feldt, Shahid Mujtaba, and Michael Mattsson, 'Systematic Mapping Studies in Software Engineering', *12th International Conference on Evaluation and Assessment in Software Engineering (EASE)*, June 2008, pp. 1–10; James et al., 'A methodology for systematic mapping in environmental sciences'.

¹⁷ Bent Flyvbjerg, 'Five Misunderstandings about Case-Study Research', *Qualitative Inquiry* 12, no. 2 (2006), pp. 219–42, <https://doi.org/10.1177/1077800405284363>; Robert K. Yin, *Case Study Research* (Los Angeles: SAGE, 2014).

¹⁸ Yin, *Case Study Research*, pp. 51–56.

¹⁹ Flyvbjerg, 'Five Misunderstandings about Case-Study Research', p. 230.

²⁰ Flyvbjerg, 'Five Misunderstandings about Case-Study Research', p. 230.

²¹ Yin, *Case Study Research*, p. 238.

²² Slots- og Kulturstyrelsen, '2. Hvad er kulturarv?', 2023, <https://slks.dk/omraader/kulturarv/bevaringsvaerdige-bygninger-og-miljoer/lokalplaner-og-kulturarv-en-guide/2-hvad-er-kulturarv>. [Quote translated by the author].

²³ ICOMOS, 'International Charter for the Conservation and Restoration of Monuments and Sites (The Venice Charter 1964)', 1964, <https://www.icomos.org/en/participer/179-articles-en-francais/ressources/charters-and-standards/157-thevenice-charter>.

²⁴ Australia ICOMOS, 'The Burra Charter (The Australia ICOMOS Charter for Places of Cultural Significance)', 2013. <https://australia.icomos.org/wp-content/uploads/The-Burra-Charter-2013-Adopted-31.10.2013.pdf>.

²⁵ ICOMOS, 'The Nara document on authenticity (1994)' 1994, https://publ.icomos.org/publicomos/jlbSai?html=Bur&base=technica&ref=44119&file=2817.pdf&path=International_Charter_for_Conservation_and_Restoration_chap10.pdf.

²⁶ Slots- og Kulturstyrelsen, 'Almindelig vedligeholdelse' (2024), <https://slks.dk/omraader/kulturarv/fredede-bygninger/bygningsarbejde-eller-vedligehold/almindelig-vedligeholdelse>.

²⁷ Kulturarvsstyrelsen, *SAVE – Kortlægning og registrering af bymiljøers og bygningers bevaringsværdi* (Copenhagen: Kulturarvsstyrelsen, 2011).

²⁸ Slots- og Kulturstyrelsen, 'Bevaringsværdige bygninger – metode' (2021). <https://slks.dk/omraader/kulturarv/bevaringsvaerdige-bygninger-og-miljoer/bevaringsvaerdige-bygninger-metode>.

²⁹ Lars Nicolai Bock, 'Transformation', *Arkitektur DK* 55, no. 3 (2011), pp. 4–7, esp. p. 5.

³⁰ Birgitte T. Eybye, 'Danish Vernacular Architecture: Sustainability as A Preservation Value', in C. Mileto, F. Vegas, V. Cristini, and L. Garcia, eds., *Architectural and Archaeological Heritage: Management and New Technologies* (ISPRS, 2020), pp. 211–18, esp. p. 212, <https://doi.org/10.5194/isprs-archives-XLIV-M-1-2020-211-2020>.

³¹ Arne Høi, 'Enzymet i den arkitektoniske kulturarv', in Dorthe Bendtsen, ed., *Eftertanker: om enzymet i den arkitektoniske kulturarv* (Aarhus: Forum for Arkitektonisk Kulturarv, 2013), pp. 14–19.

³² Lars Nicolai Bock, 'Arkitektonisk Kulturarv – uddannelsen og forskningen', in Dorthe Bendtsen, ed., *Eftertanker: om enzymet i den arkitektoniske kulturarv* (Aarhus: Forum for Arkitektonisk Kulturarv, 2013), pp. 20–31.

³³ Johannes Exner, 'Den historiske bygnings væren på liv og død', in Ellen Marie Braae and

Maria Fabricius Hansen, eds., *Fortiden for tiden: Genbrugskultur og kulturgenbrug idag* (Aarhus, Arkitektskolen Aarhus, 2007), pp. 56–73, esp. pp. 60–64.

³⁴ Søren Vadstrup, 'Bevar Roskildes brutale mesterværk', *Politiken*, 7 January 2017.

³⁵ Kulturarvsstyrelsen, 'Vejledning: Vurdering af fredningsværdier', n.d., https://slks.dk/file-admin/user_upload/SLKS/Omraader/Kulturarv/Bygningsfredning/Fredninger/Dokumenter/Vejledning_til_vurdering_af_fredningsvaerdier.pdf.

³⁶ UNESCO, 'Policy Document for the Integration of a Sustainable Development Perspective into the Processes of the World Heritage Convention'; United Nations, 'Transforming our world'.

³⁷ Det Særlige Bygningssyn, 'Beretning om synets virke 2019–2023', 2023, https://slks.dk/fileadmin/user_upload/SLKS/Omraader/Kulturarv/Bygningsfredning/Det_Saerlige_Bygningssyn/Det_Saerlige_Bygningssyn_-_Beretning_2019-2023-low-res.pdf.

³⁸ Examples include certifications such as DGNB (Deutsche Gesellschaft für Nachhaltiges Bauen) and BREEAM (Building Research Establishment Environmental Assessment Method), or LCA, which calculates the environmental impacts of a building (or a building renovation) within a study reference period of fifty to eighty years.

³⁹ Teddy Serrano, Thomas Kampmann, and Morton W. Ryberg, 'Comparative Life-Cycle Assessment of restoration and renovation of a traditional Danish farmer house', *Building and Environment* 219 (2022), <https://doi.org/10.1016/j.buildenv.2022.109174>.

⁴⁰ Petersen et al., *Bygningskultur og Klima*.

⁴¹ Realdania, *Livscyklusvurderinger for historiske ejendomme: Realdania By og Bygs erfaringer med LCA på restaureringer og transformationer* (Realdania, 2022), esp. p. 5.

⁴² Birgitte T. Eybye and Henriette Ejstrup, 'Exploring Material Lifespans in Danish Architectural Heritage: Using the Building Historic Investigation to Discuss and Qualify LCA in the B and C-Stages', *Nordic Journal of Architectural Research* 36, no. 1 (2024), pp. 65–88, esp. p. 70.

⁴³ Simon Guy and Graham Farmer, 'Reinterpreting Sustainable Architecture: The Place of Technology', *Journal of Architectural Education* 54, no. 3 (2001), pp. 140–48, esp. p. 141, <http://www.jstor.org/stable/1425580>.

⁴⁴ Guy and Farmer, 'Reinterpreting Sustainable Architecture', p. 142.

⁴⁵ Slots- og Kulturstyrelsen, 'Energiforbedring af fredede og bevaringsværdige bygninger'; Petersen et al., *Bygningskultur og Klima*.

⁴⁶ Realdania, *Livscyklusvurderinger for historiske ejendomme: Realdania By og Bygs erfaringer med LCA på restaureringer og transformationer*, pp. 35–37.

⁴⁷ Guy and Farmer, 'Reinterpreting Sustainable Architecture', p. 143.

⁴⁸ Bill Reed, 'Shifting from "sustainability" to regeneration', *Building Research & Information* 35, no. 3 (2007), pp. 674–80, <https://doi.org/10.1080/09613210701475753>.

⁴⁹ Slots- og Kulturstyrelsen and Henning Larsen, *Livscyklusanalyse for Kirkehøjgaard: En undersøgelse af klimabelastningen ved to forskellige tilgange til genopretning af en fredet bygning* (2024).

⁵⁰ Realdania, *Livscyklusvurderinger for historiske ejendomme*, pp. 5–10.

⁵¹ Guy and Farmer, 'Reinterpreting Sustainable Architecture', p. 144.

⁵² Guy and Farmer, 'Reinterpreting Sustainable Architecture', p. 144.

⁵³ Guy and Farmer, 'Reinterpreting Sustainable Architecture', p. 144.

⁵⁴ ICOMOS, 'The future of our pasts: Engaging cultural heritage in climate action' (2019), https://publ.icomos.org/publicomos/jlbSai?html=Bur&base=technica&ref=43205&file=1885.pdf&path=CCHWG_final_print.pdf, p. 14.

⁵⁵ Guy and Farmer, 'Reinterpreting Sustainable Architecture', p. 145.

⁵⁶ United Nations, 'Transforming our world', p. 3.

⁵⁷ Guy and Farmer, 'Reinterpreting Sustainable Architecture', p. 145.

⁵⁸ The notion of indoor climate usually comprises more elements such as quality of the air, moisture, temperature, draught, daylight, acoustics and static electricity (Indeklimaportalen.dk, 'Hvad er indeklima', n.d., <https://www.indeklimaportalen.dk/indeklima-generelt/hvad-er-indeklima>).

⁵⁹ Birgitte Kleis, 'Lidt, men godt' (interview med Sergio Fox ved Birgitte Kleis), *Arkitekten* 122, no. 4 (2020), pp. 103–06.

⁶⁰ Guy and Farmer, 'Reinterpreting Sustainable Architecture', pp. 145–46.

⁶¹ United Nations, 'Transforming our world'.

⁶² Petersen et al., 'Systematic Mapping Studies in Software Engineering'; James et al., 'A methodology for systematic mapping in environmental sciences'; Taipalus, 'Systematic Mapping Study in Information Systems Research'.

⁶³ Samples are often applied in investigations of populations. As a rule, thirty to forty individuals selected at random constitute a suitable sample, independent of the size of a population (Aarhus Universitet, 'Sample', Metodeguiden, n.d., <https://metodeguiden.au.dk/sample>). Since there are very few examples of Danish architectural conservation executed in the chosen period compared to individuals of a population, a sample of twenty-five or more projects with a thematic satisfactory dispersion amongst them is acceptable.

⁶⁴ Generally, more researchers are required e.g. to ensure the quality of the screening (Taipalus, 'Systematic Mapping Study in Information Systems Research', p. 18).

⁶⁵ The search was carried out in May 2024 in the theme issues *Nyt gammelt* (New Old) of the Danish journal *Arkitekten* (The Architect), on the website of Renoverprisen (The Renovation Prize) with longlisted and/or nominated Danish renovation projects (covering conservation, renovation, refurbishment, and adaptive reuse), and on the websites of Danish firms whose primary focus is on architectural conservation.

⁶⁶ Search terms comprised 2022, 2023, 2024, 'igangværende' (in progress), 'restaurering' (restoration in the Danish understanding of the word), 'istandsættelse' (repairs), 'omdannelse' (conversion), 'ombygning' (rebuilding), and 'kulturarv' (architectural heritage).

⁶⁷ This data included the name of building, year of completion of the conservation work, source, name of the firm responsible for the work, type of intervention, relevance, values-based method, listed and/or preservation-worthy status, and, possibly, sustainable aspects (mentioned).

⁶⁸ Projects including the following were discarded: 'renovering' (renovation and/or refurbishment), 'transformation' (adaptive reuse), 'indretning' (interior designs), new construction, and project types such as 'application for funding'. Special cases, e.g. the burnt down Stock Exchange in Copenhagen and projects with no available information were also discarded.

⁶⁹ For instance, the work on the Ole Rømer Observatoriet was called 'renovation', yet, this building is listed and work on it must follow the guidelines of the Agency of Culture and Palaces, which is why it was incorporated.

⁷⁰ These descriptions were written by many different people including professionals and laypersons, thus resulting, potentially, in a small degree of heterogeneity with respect to technical and theoretical terms.

⁷¹ For instance, a couple of descriptions mentioned their conservation work as an improvement of the cultural environment in which the building is situated. It is highly likely that all the firms and building owners in this survey perceive their conservation work in such a way. Sustainability aspects were, however, only registered if they are stated in the descriptions.

⁷² Snowballing was conducted in June, late July, and early August 2024.

⁷³ These criteria are for instance '*Inspirerende ressourcetiltag*' (inspiring undertakings with respect to resources) and '*Blik for brugerne*' (eyes for the users) (Renoverprisen, 'Kriterier', 2024, <https://renover.dk/kriterier/>). Recommended projects were assessed for nomination based on the descriptions, interviews, and analyses carried out by BUILD, Department of the Built Environment, Aalborg University, among others (Renoverprisen, 'Proces', 2024, <https://renover.dk/proces/>).

⁷⁴ In the context of Denmark, buildings constructed before 1536 are automatically listed. Churches are exempted from this rule if they maintain their original function. In the case that a medieval church is taken out of service, it falls under the Act of Building Preservation.

⁷⁵ Sorø Klosterkirke – Sorø Sogn, 'Klosterkirken', n.d., <https://www.soroeklosterkirke.dk/klosterkirken/klosterkirken>.

⁷⁶ 'Other' covers a sustainability analysis (Kunstnerkollegiet) and sustainable tourism (Raghilds Gård).

⁷⁷ BR08 (the Building Regulations that were valid from April 2009 to late December 2010) introduced the notion 'thermal indoor climate' (see Bygningsreglementet.dk, 'BR08', § 6.2 Termisk indeklima, n.d., https://historisk.bygningsreglementet.dk/br07_02_id91/0/42, and Bygningsreglementet.dk, 'BR10', § Termisk indeklima, n.d., https://historisk.bygningsreglementet.dk/br10_05_id91/0/42).

⁷⁸ Renoverprisen, 'Paustians Hus', 2024, <https://renover.dk/projekt/paustians-hus/>.

⁷⁹ It is very difficult to comment on the frequency of extensive conservation work on a heritage building. Concerning the listed buildings, the Agency for Culture and Palaces subsidizes conservation opposed to maintenance work, which allows for tax deductions. For this reason, it is more profitable for the owner to postpone maintenance until considerable conservation work becomes necessary. Some municipalities offer subsidies for conservation work on preservation-worthy buildings (conservation value 1–4 of SAVE).

⁸⁰ Petersen et al., *Bygningsskulptur og Klima*, p. 77.

⁸¹ For instance, Stormgården received reused timber for half-timbering from local society, whereas reused washbasins and toilets were donated by a local plumbing business (Renoverprisen, 'STORM Folke og Naturgård', 2024). At Ørslev Kloster, reused materials were purchased from private individuals and demolition companies (Renoverprisen, 'Ørslev Kloster Arbejdsrefugium', 2024, <https://renover.dk/projekt/oerslev-kloster-arbejdsrefugium/>).

⁸² In Ørslev Kloster, floor tiles from the west wing were reused in the basement. These tiles come from conservation work in the 1960s that converted the site into a work retreat on a low budget and, hence, the floor tiles have no (or very little) historic value (Renoverprisen, 'Ørslev Kloster Arbejdsrefugium'; Garry Keyes, 'On the architectural conservation of Ørslev Kloster'

[interview with Birgitte T. Eybye], 23 May 2024 at Ørslev Kloster, and 20 August 2024 via telephone].

⁸³ For instance, Krogerup Højskole sold their removed roof tiles for reuse (Renoverprisen, 'Krogerup Højskole', 2024, <https://renover.dk/projekt/krogerup-hoejskole/>).

⁸⁴ E.g. Nyboder comprises very small dwellings in the centre of Copenhagen. In order to keep them attractive for tenants, shared facilities were emphasized in the conservation work. The facilities included community rooms, playgrounds, and improved outdoor areas (Albert Algreen-Petersen, 'Gamle nye boder', *Arkitekten* 126, no. 1 (2024), pp. 52–65, interviews with Stig Andersen and Trine Qvesel, 2024). Similarly, a new and larger kitchen (users' wish) was fitted into the basement of Ørslev Kloster (Renoverprisen, 'Ørslev Kloster Arbejdsrefugium', 2024), whereas Stormgården aims to become a 'gathering point and create shared value for the local community' (Renoverprisen, 'STORM Folke og Naturgård' [translated by the author]).

⁸⁵ Dansk Håndværk is a nationwide association for small- and medium-size craft firms.

⁸⁶ Renoverprisen, 'Lærlingenes Hus', 2024, <https://renover.dk/projekt/laerlingenes-hus/>.

⁸⁷ Serrano et al., 'Comparative Life-Cycle Assessment of restoration and renovation of a traditional Danish farmer house'.

⁸⁸ A somewhat similar source of error applies to literature reviews. In such studies, relevant literature may be discarded due to imprecise titles, keywords, and abstracts.

⁸⁹ Kulturstyrelsen, 'Fredningsværdier: Ørslev Kloster, Skive Kommune' (2011), <https://kulturarv.dk/fbb/sagvis.pub?sag=19961004>; Ørslev Kloster, 'Ørslev Kloster – et af Nordens ældste refugier', Om Ørslev Kloster, n.d., <https://www.oerslev-kloster.dk/om>.

⁹⁰ Keyes, 'On the architectural conservation of Ørslev Kloster'; Renoverprisen, 'Ørslev Kloster Arbejdsrefugium'.

⁹¹ The interview with Garry Keyes was conducted on 23 May 2024 at Ørslev Kloster. The interview was recorded and the main points were written down. A follow-up question was carried out via telephone on 20 August 2024 and records written down.

⁹² Besides the work retreat, the new district heating plant also supplies the local school, kindergarten, and some of the neighbours (Keyes, 'On the architectural conservation of Ørslev Kloster').

⁹³ Keyes, 'On the architectural conservation of Ørslev Kloster'.

⁹⁴ ICOMOS, 'The future of our pasts', pp. 16–17.

⁹⁵ In relation to interviews, more sources of error may occur, e.g. poorly formulated questions, misunderstandings, and incorrect recollections, recording methods, and interpretation of results (Aarhus Universitet, 'Fejlkilder ved interviews', *Metodeguiden*, n.d., <https://metodeguiden.au.dk/fejlkilder-ved-interviews>). Concerning this interview, the interviewee took part in planning and executing the conservation works at Ørslev Kloster, and is, hence, a primary source on the process. The conservation work was carried out between 2020 and 2023, which makes it quite recent. Lastly, data from the interview converge with the description on the website of Renoverprisen (Renoverprisen, 'Ørslev Kloster Arbejdsrefugium') and conditions observed on the site. Data from the interview is thus considered to be highly credible.

⁹⁶ UNESCO, 'Policy Document for the Integration of a Sustainable Development Perspective into the Processes of the World Heritage Convention'.

⁹⁷ See Aidan Duffy et al., *Understanding Carbon in Historic Environment: Scoping Study* (Fort Cumberland: Historic England, 2019); Fufa et al., *Grønt er ikke bare en farve: Bærekraftige*

bygninger eksisterer allerede; Petersen et al., *Bygningskultur og Klima*; Realdania, *Livscyklusvurderinger for historiske ejendomme*; Serrano et al., 'Comparative Life-Cycle Assessment of restoration and renovation of a traditional Danish farmer house'; and Slots- og Kulturstyrelsen and Henning Larsen, *Livscyclusanalyse for Kirkehøjgaard*, 2024).

⁹⁸ Birgitte T. Eybye, *Bæredygtighed i Danmarks førindustrielle bygningskultur og dens aktuelle relevans: Belyst gennem studier af seks bolige*, PhD diss., Aarhus: Arkitektskolen Aarhus, 2016, pp. 25–28.

⁹⁹ W.B. Gallie, 'Essentially Contested Concepts', *Proceedings of the Aristotelian Society* 56 (1955–56), pp. 167–98, esp. p. 171.

¹⁰⁰ Keyes 'On the architectural conservation of Ørslev Kloster'.

¹⁰¹ Keyes 'On the architectural conservation of Ørslev Kloster'.

¹⁰² Flyvbjerg, 'Five Misunderstandings about Case-Study Research', p. 230.

¹⁰³ Flyvbjerg, 'Five Misunderstandings about Case-Study Research', p. 230.

¹⁰⁴ UNESCO, 'Policy Document for the Integration of a Sustainable Development Perspective into the Processes of the World Heritage Convention'.

PER O. HALLMAN'S FORMATIVE PHASE: INTEGRATING NATURAL ELEMENTS IN SWEDISH CITY PLANNING

Andreea Cristiana Blaga, Jimmie Andersén, and Bertil Malmström

ABSTRACT

During the summer of 1895, Per Olof Hallman, a young Swedish architect, embarked on a study trip through Germany, Austria, France, and Belgium. This article investigates the underexplored, formative phase of Hallman's career, focussing on how his exposure to European best practices and theoretical influences, particularly from Camillo Sitte, Joseph Stübben, and Karl Henrici's 1891 plan for Munich, shaped his unique approach to city planning. It addresses the origins and reception of his early ideas by analysing materials from Hallman's underexamined personal archive through the theoretical framework of *travelling ideas*. Upon his return to Sweden, Hallman began advocating for a more dynamic and aesthetic approach to city planning, departing from the dominant method of flattening terrains to accommodate rigid, chessboard-like street layouts. He challenged the prevailing focus on practicality at the expense of aesthetics, instead promoting the integration of natural elements such as terrain (including slopes, elevation, and undulations), wooded areas, waterways, and greenery, along with artistic principles to create more historically informed and liveable urban environments. This journey marked the starting point of his progression from a student of architecture to a pivotal figure, albeit one who is nowadays largely overlooked. The paper underscores Hallman's role in facilitating the transfer of *travelling ideas* and the lasting impact of his input on the establishment of city planning as a discipline in Sweden.

KEYWORDS

Natural elements, early modern Swedish city planning, transnational planning history, travelling ideas

INTRODUCTION

As one of the pioneering figures in Swedish city planning, Per Olof Hallman (1869–1941) had already begun exerting his influential presence in the field shortly after graduating from the Academy of Fine Arts (*Akademien för de fria konsterna*) in 1893. As early as 1897, Hallman was awarded Sweden's first academic position as a docent in urban form theory (*docentur i stadsanläggningskonstens formlära*) at the Royal Institute of Technology in Stockholm (*Kungliga Tekniska Högskolan, KTH*), and was subsequently appointed as the first city planning director of the capital in 1922.¹ In the first decade of the twentieth century, Hallman emerged as a leading figure in early modern Swedish city planning through frequent lectures, widely published essays in both Swedish and international journals, and early commissions, eventually designing plans and enlargements for seventy-six towns and communities across the country throughout his career.²

Hallman's influence extended beyond Sweden to neighbouring countries, notably Finland, where he was regarded as 'the foremost authority on city planning in the Nordic countries' and was invited in 1899 to advise on the first artistically based planning competition for Helsinki's unplanned Töölö district, returning in 1901 to assess the second stage alongside German planner Joseph Stübgen.³ Hallman's international role in city planning grew through his participation on juries for competitions in cities such as Tampere, Trondheim, Kristiania (now Oslo), Trollhättan, Norrköping, Drammen, Skien, Notodden, and Tönsberg, and through his work as both an editor and delegate, notably as a member of the editorial board of the German journal *Der Städtebau*, where he helped circulate planning ideas across national borders.⁴ Additionally, he represented Sweden at key international exhibitions on city planning, including those held in Dresden (1903), Berlin (1910), and London (1910).⁵ These positions enabled him to incorporate international concepts in Swedish discourse and influence how Swedish city planning was perceived abroad.

IDENTIFYING THE KNOWLEDGE GAP

Although Hallman's contributions to Swedish city planning are well recognized in the broader historiography, the limited body of scholarship focussing explicitly on his life and work reveals a notable gap, particularly regarding the early formation of his ideas and ideals, thus underscoring the need for further research.⁶ Hallman's early formative phase represents a fusion of theoretical and practical experiences, which shaped his perspective on city planning

and marked his transition from a newly graduated architect to an influential figure in the development of Swedish city planning in the years that followed. This formative phase included the theoretical foundations obtained through exposure to influential theories on *Städtebau* (city planning) by participating in a seminar in Berlin in 1893, combined with the practical insights he gained through his roles in the city planning administration in Stockholm and the hands-on influences from his extensive European study trip in 1895. This article focusses specifically on the ideas that Hallman began to articulate during that journey, ideas that would form the foundation of his later contributions to artistic city planning in Sweden.

Until the mid-1890s, Hallman followed a conventional career path typical of young architects of the time, focussing on the 'bureaucratic examination and critique of architectural drawings'.⁷ However, the realization that city planning could be an artistic endeavour sparked a period of intense enthusiasm and engagement in his early career, marking a significant shift in his approach. This study aims to fill the existing knowledge gap by drawing on hitherto underexplored materials from Hallman's personal archive and external collections to provide a detailed examination of the formative experiences that crystallized his approach to city planning and scholarly work by answering the following questions: *What were Hallman's initial ideas, and what inspired these city planning concepts?* The conceptual ideas that inspired Hallman, which will here be referred to as *travelling ideas*, shed light on how his exposure to the best practices in artistic city planning across Europe shaped his own design approach.

THEORETICAL FRAMEWORK: TRAVELLING IDEAS

The theoretical approach in this article is informed by the concept of *travelling ideas*. This framework, developed by Tait and Jensen, draws on both discourse analysis and Actor-Network Theory (ANT) to explain how planning concepts and ideas move across contexts and geographies.⁸ While the present study draws on the theoretical insights offered by this framework, particularly its emphasis on the *articulation* of ideas, it does not apply discourse analysis as a primary analytical method. Instead, the article uses the *travelling ideas* framework to highlight how particular planning ideals are expressed and adapted in specific contexts, without undertaking a systematic discourse analysis. Although Tait and Jensen's work shares foundations with discursive thinkers such as Michel Foucault and Carol Bacchi, their text does not engage directly with these methodologies.⁹ In turn, discourse should be

understood as ‘an entity of repeatable articulations, socio-spatial practices and power-rationality configurations ...’, but it does not serve as the central analytical lens.¹⁰

As Tait and Jensen note, ideas always develop within a specific context. The tenets of planning ideas implemented across various contexts will be examined here as the *idea travelling*. When the principles of a specific spatial vision or elements are taken from one particular context to another, we consider this idea a *travelling idea*. While Stephen V. Ward views this as a process of transfer and translation, the focus here will be on the formation, diffusion, and communication of the idea itself, rather than its practical application or adaptation in new contexts.¹¹

The analysis of Hallman’s work and archival materials offers specific insights into how he *articulated* ideas about space and spatial elements which later manifested in his plans, competition entries, and competition reviews throughout his career. The spatial elements he described as solutions to planning challenges are of particular interest. Examining the early *articulations* in Hallman’s notes will reveal the inspirations and primary concerns that would subsequently profoundly impact Swedish planning in the following decades. The analysis aims to identify recurring articulations of ideas, spatial characteristics, elements, or concepts that Hallman incorporated into socio-spatial (for example, institutional or regulatory) or spatial contexts as a measure of planning action or thought. *Travelling ideas* will be used as a heuristic concept signifying these *articulations* of ideas and a heuristic device through which the *articulations* can be categorized; the *articulations* thus constitute the *travelling ideas*.

EMPIRICAL MATERIALS

This study relies on archival research to reconstruct the evolution of Hallman’s early city planning ideas. The primary sources include Hallman’s private archive, collected for his children and now held at the City Archive (*Stadsarkivet*) in Stockholm, which comprises journal clippings and newspaper and magazine articles both by Hallman and about his work, as well as official documents, unpublished drafts, letters, and invitations, among other things. Materials from external archives also complement the study. Whether Hallman assembled the archive during the events or retrospectively remains unclear. Although Hallman’s personal archive likely presents his work in a positive light and may carry some unconscious bias, its clear organization,

consistent reasoning, and marginal notes suggesting later reflection contribute to its internal coherence and support the overall reliability of its contents.¹²

These sources offer insight into both Hallman's own thinking and how his work was received in his time. The most substantial account of his 1895 study trip, which presents only a selection of the cities he visited, roughly half of the forty where he spent time, was published in *Teknisk Tidskrift*.¹³ Whether this selective presentation was Hallman's decision or shaped by editorial constraints remains uncertain. The absence of additional archival material such as photographs, sketches, sciopticon images, or plans from the accompanying exhibition impedes a more complete reconstruction of the trip. Nonetheless, the ideas first articulated in connection with this study tour were developed and refined in Hallman's subsequent lectures, where he began to frame a new vision for city planning grounded in the principles observed during his travels. The following sections explore these lectures and the evolving articulation of his ideas.

HALLMAN'S EARLY PROFESSIONAL YEARS

Hallman's architectural journey began at the KTH in Stockholm, where he was enrolled starting in 1887, before transferring to the Academy of Fine Arts in 1890 without finalizing his previous studies.¹⁴ As part of the curriculum, he participated in two architectural competitions. In 1892, he submitted a design proposal for a national archive; in 1893, he was the only student to submit an entry for a town hall. Despite these active contributions, Hallman did not win the first prize in either competition, so he was unable to receive the scholarship usually awarded for a grand tour of Europe.¹⁵ Undeterred by this missed opportunity, he embarked on an exploratory expedition from the Swedish city of Västervik to Copenhagen, during which he studied the regional architectural heritage, local landscape motifs, and cityscapes. After returning to Sweden, he published a travel diary composed of sketches in the housebuilding section (*fackavdelning för husbyggnadskonst*) of the journal *Teknisk Tidskrift* in 1894, which was praised as a strong example of how an architect could visually convey impressions from a study trip.¹⁶ Hallman's sketches revealed a keen interest in closely examining the scale, proportions, and spatial relationships that defined the character of existing buildings, as well as their integration within the surrounding natural landscapes (fig. 1).

Hallman graduated in the spring term of 1893 and took an important step in his professional development by attending a seminar on city planning at the

Königlich Technische Hochschule (Royal Technical Academy) in Berlin.¹⁷ By the time of the Berlin seminar, the concept of *Städtebau* had already been the subject of considerable discussion in the German-speaking world. Several key texts had been published, each contributing distinct perspectives to the

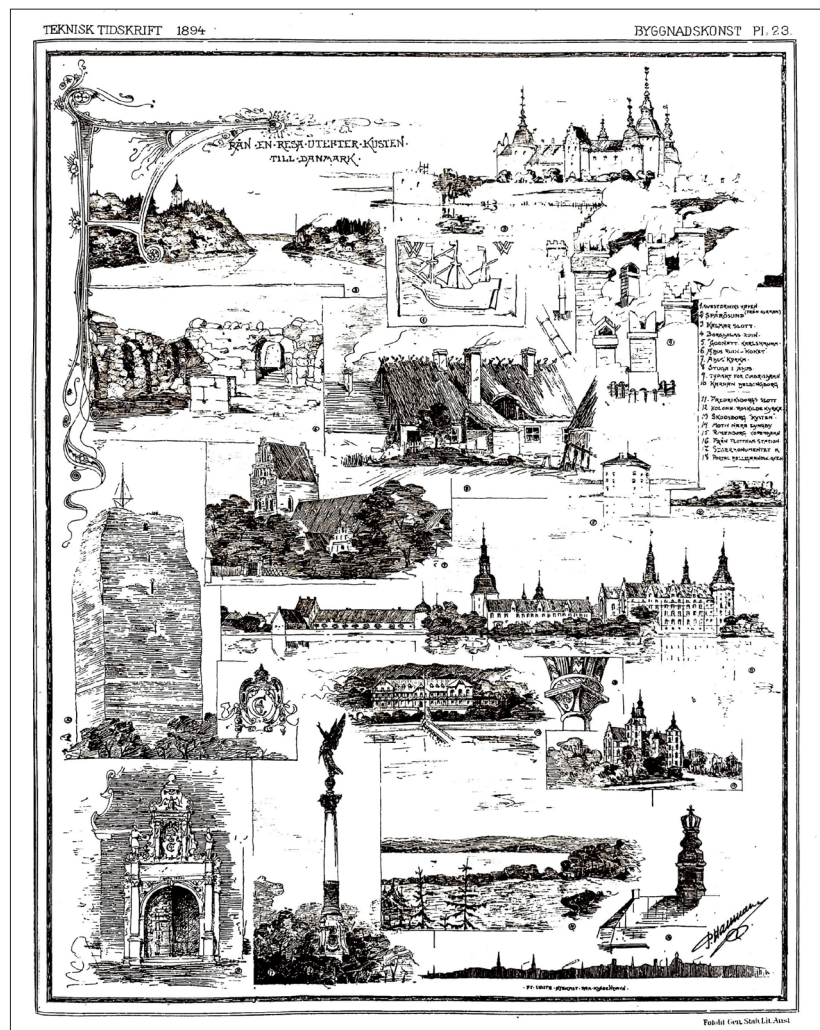


Figure 1: Hallman's sketches focussing on regional architectural heritage, local landscapes, and cityscapes. Source: 'Reseskisser från Sverige och Danmark', Teknisk Tidskrift

evolving field of city planning. Reinhard Baumeister (1833–1917) emphasized technical installations and the integration of engineering works within the urban fabric, while Josef Stübben (1845–1936) focussed on practical planning methods and the regulation of urban expansion.¹⁸ Camillo Sitte (1843–1903) brought a contrasting, artistically driven approach advocating for historically informed, spatially rich urban forms grounded in aesthetic experience, while Karl Henrici (1842–1927) explored the relationship between building typologies and urban structure.¹⁹ These writings, among others, marked the emergence of *Städtebau* as a multifaceted discipline, bridging technical, artistic, and social concerns in shaping the modern city. This seminar helped Hallman establish a theoretical foundation for the field. Shortly afterwards, in June 1893, he commenced his architectural career, securing a position as an assistant to Kasper Salin (1856–1919), the deputy city architect (*biträdande stadsarkitek*), in the Stockholm City Council's Building Committee (*Stockholms stadsfullmäktiges byggnadskommitté*), and, in April 1894, he began a new chapter by obtaining a temporary position as an assistant clerk (*extraordinarie tjänsteman*) at the Stockholm City Building Office (*Stockholms stadsbyggnadsnämnd*), a role he held until the end of 1897.²⁰

In his unpublished autobiographical notes, Hallman describes a turning point in his career, when his mentor Kasper Salin gave him Camillo Sitte's *Der Städte-Bau nach seinen künstlerischen Grundsätzen* (City Planning According to Artistic Principles), a gift that Salin believed would 'resonate deeply with him', especially at a time when German-language publications were widely read and easily circulated among Swedish professionals in academic and technical fields.²¹ Kasper Salin had received the book from his brother, Bernhard Salin (1861–1931), an archaeologist and art historian, who had recently earned a doctorate in aesthetics and was working as a temporary administrative assistant (*extraordinarie amanuens*) at the State Historical Museum (*Statens historiska museum*).

Sitte's influential work reached Sweden shortly after its publication, prompting early discussion in the newspapers *Post- och Inrikes Tidningar* and *Svenska Dagbladet* in 1890, the same year Bernhard Salin published a critical article in *Teknisk Tidskrift* denouncing rigid right-angled street grids for their monotony and lack of artistic value.²² Furthermore, he emphasized the role of natural elements in creating more engaging urban environments and argued that varied terrain should be seen as a resource for planning rather than as an obstacle, highlighting Södermalm in Stockholm as an area where the hilly

topography invited more expressive building groupings and visual variety.²³ For Salin, working with the natural form of the land offered a way to counteract the uniformity of modern grid plans and to reintroduce spatial richness and individuality into the urban fabric.

The coverage facilitated the introduction of Sitte's pioneering concepts in artistic city planning to the Swedish architectural community and the general public. Nevertheless, these ideas did not exert an immediate influence. The spread of Sitte's ideas in Sweden began in the mid-1890s, as architects like Hallman and Fredrik Sundbärg (1860–1913) started applying *Städtebau* principles in their work, marking the early stage of a gradual shift in Swedish urban design that, by the turn of the century, saw them recognized as leading figures in this new direction, with critic Edvard Alkman (1867–1937) describing them in *Dagens Nyheter* as '*de nya idéernas män*' (the men of the new planning ideas) for their focus on cities as spaces shaped by both movement and human experience.²⁴

Sitte's book had a profound impact on Hallman, sparking what he called both 'a personal awakening and a broader shift within the architectural community', which he later reflected on in his unpublished memoirs with humorous acknowledgement of his 'youthful arrogance' and the intensity of his convictions at the time.²⁵ However, this enthusiasm was far from superficial; it demonstrated a genuine and deep engagement with the evolving discipline of artistic city planning. For Hallman and many others in the professional sphere, Sitte's work offered a new framework for understanding cities not merely as collections of buildings but as coherent artistic entities that should be thoughtfully designed and experienced. This approach starkly contrasted with the prevalent chessboard-like city plans, typically devised by engineers and land surveyors, which lacked aesthetic considerations.

Hallman first introduced his city planning ideas in a 1894 article in a daily newspaper, likely influenced by the Berlin seminar he had attended the previous year, where exposure to contemporary European debates deepened his interest in urban design reform. He continued to develop and articulate these ideas through subsequent lectures and publications. Drawing on the conceptual framework of *travelling ideas*, the following section presents a detailed analysis of Hallman's ideas and explores how his exposure to new planning concepts and his critique of conventional methods shaped his vision for a novel approach to city planning.

BETWEEN TRADITION AND 'REVOLUTION'

In April 1894, Hallman published his first public address, an article titled '*Revolution i stadsbyggnadskonsten?*' (Revolution in the Art of City Planning?), which appeared in the daily newspaper *Aftonbladet*. In his archival materials, the architect documented this as 'the first word to the public audience'.²⁶ The article provided a critical analysis of city planning and its development, focussing on the concept of 'regulations' in urban contexts, and thus raising questions about the meaning and purpose of city planning. The piece strongly critiqued prevailing planning practices, especially the tendency to level natural terrain and impose rigid, right-angled grids.

In response to proposals for redeveloping Stockholm's Old Town (*Staden mellan broarna, Gamla stan*), Hallman argued that such methods produced monotonous street structures and ignored both aesthetic and historical values in favour of technical efficiency. Calling for a fundamental shift in planning thought, he described the impact of new planning philosophies spreading rapidly across Europe and urged Sweden to adopt a similar path. He argued that if guided by a well-considered programme that integrated artistic sensibility with practical needs such as hygiene, this transformation could turn the area into 'the most beautiful part of the capital'.²⁷

The idea that city planning should be regarded as part of the fine arts rather than solely as an engineering discipline was central to Hallman's critique. He argued that the dominant reliance on technical methods had led to unimaginative, monotonous urban environments, which he regarded as 'engineer and land surveyor cities'.²⁸ While recognizing the value of technical expertise, he called for a planning approach combining technical skill with aesthetic judgment and sensitivity to natural elements. This critique marked a clear break from the prevailing, function-driven planning ideals of his time.

Hallman highlighted the emergence of new planning ideas on the continent, where traditional methods were increasingly being questioned. He referenced key figures such as Camillo Sitte, Joseph Stübben, and Karl Henrici, each of whom rejected the dominant, engineering-led model of city planning in their own unique ways. Hallman considered Henrici's 1891 winning proposal for Munich a significant example of how to move past uniform, 'characterless towns' (*dussinstäder*) while maintaining sanitary standards, and highlighted its importance by advocating for urban plans based on clear programmes and open competitions, later dedicating an entire lecture to the project in 1896.²⁹

In summary, Hallman's article represented his first call for a paradigm shift in city planning, arguing for the incorporation of aesthetic principles in urban design. He suggested that any changes to the city should be made according to an 'appropriate programme' and 'facilitated through an open competition', which contrasted with the 'overly simplistic' conventional practices of designing streets 'with nothing more than an ordinary ruler and two strokes of a pencil'.³⁰ As noted, Hallman highlighted the shortcomings of contemporary urban planning, proposing an aesthetic approach as the solution.

IDEAS ARTICULATED DURING THE 1895 STUDY TRIP

In 1895, Hallman was awarded a scholarship by the Swedish National Board of Trade (*Kommerskollegium*) to conduct a study tour through Germany, Austria, France, and Belgium. He aimed to examine the emerging artistic principles of city planning and assess their potential for future implementation in the Swedish context.³¹ During the trip, Hallman studied the planning of roughly forty cities, gaining practical insight into continental approaches. The experience proved pivotal, enabling him to disseminate *Städtebau* ideas to Swedish professional circles, where they were still largely unknown.

After returning to Sweden, Hallman delivered his first lecture at the Swedish Technological Association's Housebuilding Department (*Svenska Teknologförening – Fackavdelning för husbyggnadskonst*) on 21 October 1895. Titled 'Historical and Contemporary Town Plans: Studies from a Trip to Germany and France' (*Om äldre och nutida stadsplaner, studier från en resa i Tyskland och Frankrike*), the architectural critic Thomas Paulsson (1923–2001) regarded this lecture as 'Hallman's first manifesto', emphasizing that he was only twenty-six years old at the time.³² The young architect presented a thorough analysis of examples of best practices in city planning based on his observations from the study trip. To accompany the lecture, the Technological Association organized an exhibition of plans, drawings, and photographs gathered by Hallman, supporting his effort to promote progressive planning methods and his view that 'city planning is a form of art' (*stadsanläggningskonst*) requiring technical skill, aesthetic judgment, spatial sensitivity, and a deep understanding of place.³³

In his lecture, Hallman criticized the modern city for its reliance on rigid grids, straight streets, oversized squares, and monotonous, geometrically uniform spaces, which he regarded as lifeless and disconnected from human

experience.³⁴ He argued that prominent features such as statues and fountains lost their impact in such settings. In contrast, he praised historic cities shaped during periods when artistic values guided design, noting that their enduring appeal lay not in their age but in the spatial richness, aesthetic composition, and incorporation of natural elements. The analysis of the archival material related to this lecture reveals that several recurring themes centred around integrating natural elements formed the basis of his planning approach. The lecture reflects a well-formed and consistent vision of city planning that Hallman would continue to develop and advocate throughout his career. The following section explores the key themes that structure this vision.

1. Undulating Streets, Concave and Convex Forms

Hallman's strongest critique was directed at straight streets and ninety-degree angle intersections. He considered such rigid schemes to be indifferent to the terrain, human movement, and visual experience. In contrast, he praised older city districts as in Lübeck, Bremen, and Nuremberg, where curved streets, varied widths, and irregular alignments created more engaging and human-scale environments.³⁵ These forms, he observed, followed the terrain, responded to historical placements of buildings, and allowed for variety without compromising traffic flow. In line with Sitte's writings, Hallman suggested that a street that widens slightly or bends to reveal a church tower or a small plaza provides moments of orientation and delight for passersby. Unlike a perfectly straight road, it encouraged exploration, slowed the pace of movement, and offered memory spots (*minnespunkter*) that root people in place. As such, these principles were articulated into a clear idea of an alternative street form, which instead of straight lines, emphasized curvature and undulating streets.

Another spatial idea inspired by Sitte was Hallman's preference for *concave* urban forms over *convex* ones. In a *concave* curve, Hallman explained, the eye was naturally drawn inwards, offering a complete view of the space and the buildings around it.³⁶ This allowed for architectural expression and monumentality, especially when positioning towers or significant civic buildings. In contrast, *convex* forms, by bulging outwards, obscured views and created weak spatial definition. In the case of St. James Church (*Jakobikirche*) in Lübeck, Hallman noted how the slight curving of streets and the irregular plazas did not hinder circulation, but instead allowed each space to present itself entirely to the observer. Rather than aligning with a straight boulevard,

the church stood in a bend in the street. From that angle, the tower became a clear focal point. This placement gave the building a quiet grandeur that a more direct, linear approach would not have achieved.

2. The Integration of Greenery

Hallman valued greenery but firmly opposed the idea that simply lining streets with rows of identical trees automatically enhanced urban spaces. He was particularly critical of rigidly arranged plantings typical of Haussmannian boulevards in Paris and large open squares, considering these configurations to be mere ‘dust collectors’ (*ruskiga dammsamlare*) once their brief blooming period had passed.³⁷ Instead, Hallman argued that trees should be incorporated strategically into urban design, not as decoration, but as integral compositional elements. In articulating this idea, Hallman emphasized that, much like buildings, trees needed to be thoughtfully integrated in a unified spatial scheme. A single, deliberately positioned tree could soften harsh edges, frame plazas, or balance out building façades. Grouped plantings, intentionally positioned at street corners or along curved pathways, could give rise to rhythm and enhance intimacy within urban environments. Furthermore, green areas – whether parks, front gardens, or groupings of trees – should enhance those relationships, not obscure them. Purposefully placed green elements could enhance monumentality, anchor visual axes, and direct attention to architectural focal points. Hallman illustrated this with the example of Braunschweig’s Burgplatz, where a solitary tree in the corner of an enclosed square effectively anchored the space and softened its geometric rigour. According to Hallman’s articulation of this idea, such precise, intentional placements of vegetation contributed far more significantly to the monumental and spatial quality of urban areas than scattered decorative plantings.

3. Designing with the Terrain

Hallman regarded topography not as an obstacle to overcome, but rather as a key asset in city planning. In his lecture, he pointed out that cities designed strictly according to rigid grids tended to be monotonous and disorienting. In contrast, older, more organically grown cities offered a rich experience shaped by their terrain. He argued that a site’s natural terrain, including its slopes, wooded areas, waterways, and elevations, should guide the placement of streets, buildings, and public spaces. In Liège, he praised the positioning of churches at key visual points, such as on square corners or at the ends of axes, where slight elevation or enclosure enhanced their impact. Further-

more, Hallman praised Lübeck for its organically developed street layout, which respected the existing terrain while balancing aesthetic demands with practical concerns. In contrast, he found Cologne's cathedral to be poorly framed, noting that the lack of open space and inadequate spatial planning weakened its presence, despite its impressive scale. Mannheim also served as a negative example, where a rigid grid completely disregarded the terrain, resulting in what Hallman called 'the dullest city in Europe' (*den tråkigaste stad i Europa*).³⁸ These observations helped Hallman articulate a core idea in his later work: that natural terrain should inform the layout of cities, rather than being flattened or ignored. Thoughtful use of topography, he believed, could elevate both the visual experience and the spatial logic of the urban fabric.

4. The Shaping and Use of Public Spaces

Modern city plans of his day often created vast open spaces in the name of hygiene or airflow, but Hallman warned that these too often resulted in sterile, windswept voids. He argued that public squares should be enclosed and proportional, not expansive for their own sake. A plaza that was too wide relative to the height of the surrounding buildings lacked character and failed to support social or civic life. In Bremen, he found an example of successful integration. There, a collection of civic buildings, including the town hall, cathedral, post office, and stock exchange, formed a tight ensemble around a central square. The space was not ample, but its coherence and proportion created a powerful impression. The square encouraged interaction between buildings and offered a calm focal point within the urban fabric. In his view, this was more aesthetically pleasing and more useful than 'a vast desert of sand' (*stora sandöknar vore absolut förkastliga*), as he described many of the open spaces he encountered elsewhere.³⁹ In other words, Hallman articulated that well-designed public squares should encourage social life through spatial coherence, human scale, and visual enclosure.

5. Cities Built for Residents

Perhaps the most consistently articulated idea in Hallman's lecture is that cities should be planned for those living in them and not for tourists or aerial photographers, warning against designing cities that looked good on a map but felt lifeless on the ground.⁴⁰ He valued the view from the street, the feel of a path beneath one's feet, the way a building revealed itself as one approached. His criticism of Paris's grand boulevards was that they failed to serve the day-to-day experience of ordinary Parisians. For him, beauty was

not synonymous with symmetry or monumentality. It came from scale, variation, elements of surprise, and harmony. It came from a well-placed bench under a tree. From a church spire glimpsed around a corner. Or from a small, quiet square that felt protected and personal.

These five themes demonstrate how Hallman actively rearticulated key spatial principles into a coherent planning discourse grounded in local context. Through his critique of rigid grids and his emphasis on curved streets, enclosed squares, integrated greenery, responsive topography, and everyday experience, Hallman transformed international planning concepts into contextually embedded ideas. Within the framework of *travelling ideas*, his contributions illustrate not just the transfer of knowledge, but also the deliberate shaping and refinement of planning ideals through personal observation, professional dialogue, and spatial critique. These articulated ideas became building blocks for a more nuanced and place-sensitive approach to city planning in Sweden.

FROM NATIONAL PRACTICE TO NORDIC EXCHANGES

Following his 1895 lecture, Hallman presented his ideas to several professional groups, including the Technological Association and the Stockholm Building Association (*Stockholms byggnadsförening*).⁴¹ His call to integrate aesthetic and experiential considerations into city planning, rather than limiting it to technical functionality, was widely supported. Many attendees shared his view that cities should offer more than efficiency, instead prioritizing liveability, visual richness, and variation at street level. While Hallman's vision was praised and recommended for further discussion in the Technological Association, it also faced criticism from a member who argued that Sweden's own architectural tradition, seen in cities like Malmö, Karlskrona, and Stockholm, provided ample inspiration, making foreign models unnecessary and affirming the value of national heritage.⁴²

While Hallman played a key role in initiating a discourse on aesthetics and human experience in Swedish city planning, he was part of a broader shift that was gathering momentum in the late 1890s. Among those who contributed significantly to this evolving field was the architect Fredrik Sundbärg, whose critique of rigid planning practices paralleled Hallman's but came from a position of greater professional seniority. On a side note, Sundbärg served as city architect in Jönköping between 1891 and 1900, and from 1901 onwards, held the same position in Landskrona until his sudden death in 1913.⁴³

Drawing on Camillo Sitte's ideas, Sundbärg called for urban environments shaped by natural elements, historical continuity, and artistic sensibility.

At the 1896 General Swedish Technical Meeting (*Andra allmänna svenska teknikermöte*), Sundbärg offered a sharp critique of the rectilinear systems that dominated Swedish city planning. He warned that such schemes erased spatial variation and the unique character of older towns.⁴⁴ He called instead for a more responsive, site-specific approach that embraced natural elements as integral components of urban form. The following year, he deepened this position in a two-part article titled 'Om stadsplaner med särskild hänsyn till svenska förhållanden' (On the Topic of Town Plans with Special Regard to Swedish Conditions), published in *Ord och Bild*, which presented the first in-depth reception of Sitte's theory in Sweden.⁴⁵ Rather than treating planning as a technical task, Sundbärg described it as a cultural and spatial practice best grounded in on-site analysis and an understanding of urban identity.

Sundbärg's ideas were disseminated across the Nordic region as well. His 1897 articles found a receptive audience in Finland. Bertel Jung (1872–1946), then a young architectural draftsman in the office of Lars Sonck (1870–1956), came across the article and shared it with Sonck, who was beginning to establish himself as a critical voice in Finnish architectural and urban discourse.⁴⁶ In 1898, Sonck's influential article 'Modern vandalism: Helsingfors stadsplan' (Modern Vandalism: Helsinki's Town Plan) criticized the neglect of topography in the city's development and sparked a reassessment of local planning, leading to Finland's first city planning competition based on artistic principles for the hilly Töölö district, with Hallman evaluating the first phase (1898–1900) and German planner Josef Stübben joining for the second (1900–1902), further advancing the influence of *Städtebau* ideas.⁴⁷

Moreover, Hallman and Sundbärg won first prize in the 1901 planning competition for a significant expansion south of Gothenburg, marking the first Swedish competition to fully embrace artistic and terrain-sensitive planning.⁴⁸ Published internationally in journals like *Der Städtebau*, *Deutsche Bauzeitung*, or *Centralblatt der Bauverwaltung*, the Töölö and Gothenburg projects reflected Nordic engagement with contemporary urban debates, as Hallman and Sundbärg, among others, used lectures, writings, competitions, and cross-border collaborations to reshape planning discourse in Sweden and the Nordic region as a whole by adapting international principles to

local contexts and emphasizing the role of natural elements in modern urban design.⁴⁹

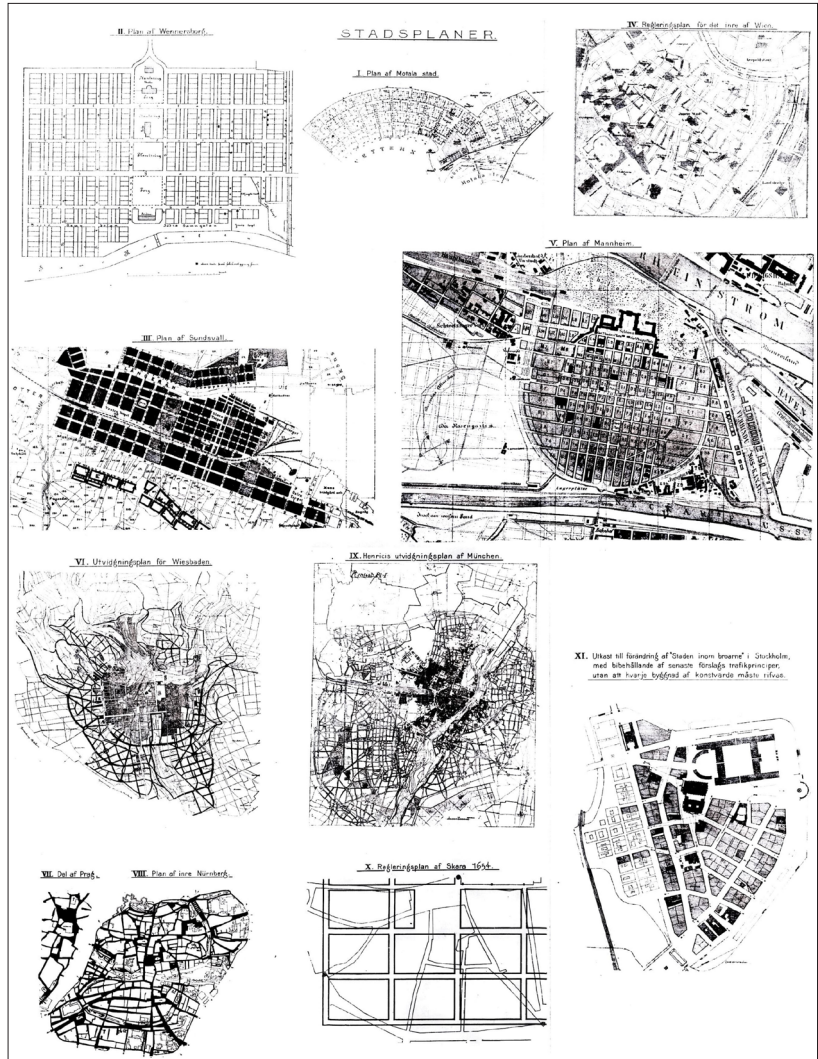


Figure 2: City plans from both Sweden and abroad presented by Hallman at the Nordiska Tekniskermöte included, from the upper left: Wenersborg (now Vänersborg), Motala, Vienna, Sundsvall, Mannheim, Wiesbaden, Munich, Prague, Nuremberg, Skara, and Stockholm's 'Staden inom broarna'. Source: Wilhelm Hoffstedt, *Förhandlingarna vid Nordiska Tekniskermöte i Stockholm* (Stockholm, Central-Tryckeriet, 1898), p. 172. Graphic processing: A.C. Blaga, 2025

At the *Nordiska Teknikermöte* (Nordic Technical Meeting) held in mid-June 1897, which attracted over 1,200 participants from across the Nordic region, Hallman delivered a sharp critique of contemporary city planning, building on his earlier articulations.⁵⁰ In his lecture '*Principerna för anläggandet eller utvidgandet af en stad eller stadsdel*' (The Principles of Building or Expanding a Town or Neighbourhood), he argued that the dominance of hygiene and traffic concerns had overshadowed variation, spatial richness, and aesthetic quality. Engineers, he emphasized, lacked the artistic sensibility needed to shape vibrant urban environments and called for closer collaboration with architects. In his lecture, Hallman outlined four typical town typologies: *radial*, *triangular*, *rectangular*, and *natural* (*det naturliga systemet*), observing that while the first two were rare in Sweden, the widespread use of the rectangular system often produced unsatisfactory outcomes.⁵¹ Hallman illustrated his preferred town typology using examples from Swedish cities like Wennergö (now Vänersborg), Motala, Sundsvall, Skara, and Stockholm, as well as international cases such as Vienna, Mannheim, Wiesbaden, Munich, Prague, and Nuremberg, while promoting what he called the *natural system* – urban plans shaped by local conditions and natural features rather than by rigid geometric layouts (fig. 2).

As part of this lecture, Hallman also introduced a design sketch for the redevelopment of *Staden mellan broarna*, which generated lively discussion. Instead of imposing a new grid or clearing space for traffic, Hallman's proposal (shown in the bottom right corner of figure 2) retained key historic buildings and adapted the layout to the site's existing topography. The design demonstrated how aesthetic composition, spatial enclosure, and respect for heritage could guide modern planning, illustrating his core articulations rooted in place. His arguments culminated in a formal proposal that the meeting support the integration of architectural expertise in city planning processes. Furthermore, Hallman reinforced his arguments by citing Ewald Genzmer's (1856–1932) recently published work *Die städtischen Strassen* (The Urban Streets), demonstrating his alignment with contemporary German planning theory and his awareness of the latest international developments.⁵² By citing this work, Hallman contributed to the broader dissemination of *Städtebau* theory across the Nordic countries, bridging national debates and reinforcing a shared planning vocabulary rooted in international exchange.

By the time Hallman presented his lecture '*De nya stadsplaneidéerna*' (The New City Planning Ideas) at the *Gefle Teknikermöte* (Third Technical Meet-

ing in Gävle) in 1901, the ideas he had begun to articulate during his 1895 study trip had matured significantly. In this address, Hallman comprehensively critiqued the prevailing rectilinear planning methods, which ignored terrain, natural elements, and historical structures.⁵³ He called instead for an approach rooted in close study of local conditions, including topography, waterways, wooded areas, and existing buildings of cultural or architectural value. Hallman viewed natural elements as resources that added spatial variety, clarity, and human character to urban design, while also providing economic benefits, and advocated for placing parks in areas with existing vegetation instead of using formal planting schemes, illustrating his point with the 1869 Gävle fire, in which surrounding trees helped protect the church.⁵⁴ This demonstrated the functional value of maintaining natural vegetation in urban environments as a design asset and a defensive measure against urban fires. Taken together, Hallman's abovementioned arguments were articulated as clear principles.

A central point in the lecture was Hallman's advocacy for planning based on a physical understanding of the site. He stressed that the careless imposition of straight streets across hills and valleys could devastate a town's functional and aesthetic quality.⁵⁵ To address this, Hallman introduced the use of contour maps and physical city models, an approach not previously applied in Sweden, and in cooperation with Sundbärg, submitted a terrain-sensitive proposal that included such a model for the 1901 Gothenburg competition, which was selected as the winning entry.⁵⁶ Hallman's vision also extended to public space design, favouring organically shaped parks that followed the character of the existing landscape over formal, geometric arrangements. He also emphasized the need for thoughtful placement of monumental buildings, arguing that their impact depended on contrast, framing, and the use of proportional open space. These principles were clearly influenced by Sitte's theory of urban composition.

Importantly, Hallman's ideas articulated at the *Gefle Teknikermöte* did not remain confined to the Swedish context. His lecture was published, among others, in the Danish journal *Meddelelser fra Akademisk Arkitektforening* (Announcements from the Academic Architects Association) in 1901, further contributing to the dissemination of artistic planning ideals across the Nordic region.⁵⁷ The publication expanded the reach of Sittean urbanism and positioned Hallman as a central figure in the early Nordic reception of these ideas.

After attending the 1903 *Städtebau* exhibition in Dresden, Hallman published *En stadsplanejämförelse* (A City Planning Comparison) in 1904, which marked a turning point in the Swedish planning debate by contrasting outdated nineteenth-century ideals with more human-centred approaches focussing on health, aesthetics, and lived experience.⁵⁸ Its broader relevance was confirmed by its publication the following year in *Der Städtebau* and a reprint with commentary by a Norwegian physician in *Tidsskrift for Den norske lægeforening* (Journal of the Norwegian Medical Association), emphasizing its importance for public health and hygiene.⁵⁹ This cross-disciplinary and cross-border interest reflects the wider resonance of Hallman's thinking and its role in shaping a shared Nordic perspective on socially and physically grounded city planning. What began as reflections from a European study trip developed into a consistent discourse that challenged prevailing engineering-led approaches. These ideas gained institutional traction through his lectures, writings, and participation in competitions and became part of broader professional debates. Their circulation across the Nordic region helped shape a shared planning language, positioning Hallman not only as a national reformer but as a key figure in the early international conversation on artistic and context-sensitive urban planning.

CONCLUDING DISCUSSIONS

This study explores the formative phase of Per Olof Hallman's career, highlighting how his early exposure to European planning ideals, particularly those emerging from the *Städtebau* discourse, shaped his distinctive approach to Swedish city planning and thus the articulation of his city planning ideas. Through archival analysis and the theoretical lens of *travelling ideas*, the article traces how Hallman assimilated and reformulated external influences into a contextually grounded, aesthetically aware planning vision. Influenced by figures such as Sitte, Stübben, and Henrici, he advocated for a shift away from rigid, technical planning models and towards a spatial practice incorporating aesthetics, history, and natural form. He consistently promoted an approach that valued undulating streets, enclosed squares, and terrain-sensitive layouts, principles that stood in stark contrast to the gridiron plans imposed by engineers and land surveyors at the time.

Framed through the lens of *travelling ideas*, Hallman's early work shows how international planning concepts were not merely adopted, but rearticulated to reflect the Swedish context, particularly through a focus on natural elements. Hallman developed a context-sensitive planning language ground-

ed in place, scale, and everyday use. His ideas derived from Sitte's urban theory – undulating streets, integrated greenery, designing with the terrain, and enclosed public spaces – were articulated through direct observation and professional dialogue, and then disseminated through lectures, articles, and competitions. These articulations gave form to a new planning discourse in Sweden that resonated across the Nordic region. Rather than reproducing foreign models, Hallman reformulated them to reflect local needs, turning international inspiration into practical and discursive change.

Hallman's 1895 study trip was instrumental in shaping his thinking through exposing him to cities that successfully integrated topography and spatial diversity, while also revealing the shortcomings of city plans like that of Mannheim, which ignored the natural character of the landscape. In his early writings and lectures, particularly the lecture at the 1895 *Svenska Teknologförening*, the 1897 *Nordiska Teknikermöte*, and the 1901 *Gefle Teknikermöte*, Hallman positioned topographical responsiveness and aesthetic composition as aspects central to planning practice. He viewed landscape and built form as interdependent, arguing that planners should work with natural elements, slopes, vegetation, and existing structures to achieve visual richness and economic efficiency.

What set Hallman apart from his contemporaries was not just his focus on terrain and historical context, but also his insistence that cities be designed with everyday life in mind. He challenged the idea that urban form should serve primarily aerial views or traffic- and circulation-oriented logics, arguing instead for human-scale planning grounded in variation, street-level legibility, and spatial intimacy. While his principles drew on thinkers like Sitte, they did not adopt them uncritically. Hallman reinterpreted them through his observations and shaped them to fit the Swedish context. One early example of his planning ideas in action was a redevelopment proposal for *Staden mellan broarna* presented at the 1897 *Nordiska Teknikermöte*. Rather than imposing a grid street structure that prioritized traffic circulation, Hallman preserved key historic buildings and adapted the street layout to the existing topography.

Hallman's ability to translate theoretical planning ideals into practice, in this article framed as the articulation of ideas, was evident both nationally and internationally. His ideas circulated early on through public lectures,

published essays, and contributions to international journals, including the Danish *Meddelelser fra Akademisk Arkitektforening* (1901), the Finnish *Ateneum* (1900), and the German *Der Städtebau* (from 1904 onwards), reflecting the broader relevance of his thinking. His collaboration with figures like Fredrik Sundbärg and Josef Stübben, as well as his involvement in key planning competitions in Gothenburg and Helsinki, show how his approach gained traction within professional networks and institutional settings. These competitions served as testing grounds for *Städtebau* principles, allowing them to be adapted, debated, and further developed. Their subsequent publication in German journals such as *Der Städtebau*, *Deutsche Bauzeitung*, or *Centralblatt der Bauverwaltung* positioned the Swedish and Nordic planning experiments within a broader European discourse, underscoring Hallman's role in shaping a transnational conversation around early modern urbanism.

Furthermore, Hallman's influence extended beyond architectural and planning circles. In 1905, his work was republished and discussed in *Tidsskrift for Den norske lægeforening* (Journal of the Norwegian Medical Association), where its implications for public health and urban hygiene were emphasized. This cross-disciplinary reception highlights how his ideas resonated not only within design professions, but also in broader debates about the social and physical well-being of urban life.

The framework of *travelling ideas* helps clarify how Hallman functioned as both a translator and originator of planning discourse. He introduced European concepts to Swedish audiences through public talks, published commentary, and professional networks, but he also actively reframed those ideas. His call for city planning competitions, the use of physical models, and his insistence on site-specific analysis marked a clear break from the engineer-driven planning methods common at the time.

In conclusion, Hallman's early career provides a compelling case study on how theoretical engagement, field observation, and professional discourse can intersect to produce a distinctive planning approach. By reframing city planning as both an artistic and practical discipline rooted in place, Hallman helped lay the foundations for modern city planning in Sweden and influenced a broader Nordic reception of reformist European planning ideals. His contribution lies not only in the plans he produced, but also in how he redefined what planning could be.

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NOTES

¹ Per Olof Hallman, 'Utdrag ur undertecknandes meritförteckningen' (unpublished document, Stockholms stadsarkiv, SE/SSA/0908/C/1, Meritförteckning, 1922-6-12).

² Per Olof Hallman, *Självbiografi från P. Hallman* (unpublished document, Stockholms stadsarkiv, SE/SSA/0908/C/1, Självbiografi skriven av Per O Hallman, 1919-1-9), p. 7; some examples of international publications include: Per Olof Hallman, 'Ein Stadtplanvergleich', *Der Städtebau* 2, no. 8 (1905), pp. 105-06; Per Olof Hallman, 'Några ord om stadsplaner med särskild hänsyn till frågan om plan för Tölö område', *Helsingfors, Ateneum* 1 (1900), pp. 35-43; Lasse Brunnström, *Kiruna – Ett samhällsbygge i sekelskiftets Sverige* (Umeå: Umeå University, 1980), p. 73; Thomas Hall, *Planning and Urban Growth in the Nordic Countries* (London: E & FN Spon, 1991), p. 217.

³ 'En god sak på avvägar', *Hufvudstadsbladet* (newspaper article, Stockholms stadsarkiv, SE/SSA/0908/A/1, Hufvudstadsbladet, 1899-11-25); Helsingfors Stadsfullmäktige, 'Utskotts-betänkande i fråga om förslag till stadsplan för Tölöområdet' (official document, Stockholms stadsarkiv, SE/SSA/0908/A/1, Helsingfors stadsfullmäktiges tryckta handlingar n:o 27/1902).

⁴ Theodor Goecke, *Letter to Per O. Hallman* (personal correspondence, Stockholms stadsarkiv, SE/SSA/0908/A/2, n.d.).

⁵ Andreea C. Blaga, 'Displaying Planning Knowledge: Early Twentieth-Century Expositions and the Transnational Influence on Swedish City Planning', *Planning Perspectives* 40, no. 6 (2025), pp. 1559-595, <https://doi.org/10.1080/02665433.2025.2534026> [all URLs here accessed in January 2026]. The three exhibitions Hallman participated in were called: *Die deutschen Städte (German Cities)* in Dresden (1903); *Die Allgemeine Städtebau-Ausstellung* (The General City Planning Exhibition) in Berlin (1910); and the RIBA Town Planning Conference in London (1910).

⁶ Some examples of works focussing on Hallman include: Thomas Paulsson, *Den glömda staden: svensk stadsplanering under 1900-talets början med särskild hänsyn till Stockholm: idéhistoria, teori och praktik*, (Stockholm: Stockholmia, 1959); Hans Bjur, *Stadsplanering kring 1900: med exempel från Göteborg och Albert Lilienbergs verksamhet* (Göteborg: A-husets reprocentral, 1984), pp. 77-103; Heleni Porfyriou, *Scandinavian Town Planning from 1900 to 1930 and the Contribution of Camillo Sitte* (University College London, The Bartlett School of Architecture and Town Planning, 1985); Thomas Hall, ed., *Planning and Urban Growth in the Nordic Countries* (London and New York: Routledge, 2003); Thomas Hall, 'Den moderna planeringens genombrott', in Thomas Hall and Katarina Dunér, eds., *Den svenska staden: planering och gestaltning – från medeltid till industrialism* (Stockholm: Sveriges Radio förlag, 1997), pp. 106-23; Anna-Lisa Löfquist, 'Riksbyggmästaren: Per Olof Hallman 1869-1941' (Stockholm Konstvetenskapliga institutionen, Stockholms universitet, 1991). In 1994, the architectural historian Thomas Hall highlighted the lack of literature dedicated to Hallman's work: Thomas Hall, 'Planning History: Recent Developments in the Nordic Countries, with Special Reference to Sweden', *Planning Perspectives* 9, no. 2 (1994), p. 161. Since 1994, the following publications focussing on Hallman have been published: Ann Pålsson and Monica Andersson, eds., *Per O. Hallman: stadsplanekonstens förnyare* (Stockholm: Appell förlag, 2019); Chiara Monterumisi, 'Rödabergsområdet: A Verdant Small Town Idyll within the City', *Planning Perspectives* 36, no. 5 (2021), pp. 949-74, <https://doi.org/10.1080/02665433.2021.1871774>; Monica Andersson, 'Hallman in Stockholm: The Garden-City Movement in Artistic Town Planning for Working-Class Families', *Planning Perspectives* 40, no. 3 (2025), pp. 495-525, <https://doi.org/10.1080/02665433.2024.2403554>; Andreea C. Blaga, 'Revisiting Early City Planning Competitions: Per O. Hallman and the Art of City Building in Helsinki-Töölö and Gothenburg', *Planning Perspectives*, ahead of print (2025), pp. 1-40, <https://doi.org/10.1080/02665433.2025.2484830>; Blaga, 'Displaying Planning Knowledge'; Andreea C. Blaga, 'Circulating City Planning Ideas: Professional Networks in Early Twentieth-Century Sweden', unpublished manuscript (2026).

⁷ Hallman, *Självbiografi från P. Hallman*, p. 7.

⁸ Malcolm Tait and Ole B. Jensen, 'Travelling Ideas, Power and Place: The Cases of Urban

Villages and Business Improvement Districts', *International Planning Studies* 12, no. 2 (2007), <https://doi.org/10.1080/13563470701453778>.

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¹¹ Stephen V. Ward, 'Re-Examining the International Diffusion of Planning', in Patsy Healy and Jean Hillier, eds., *Foundations of the Planning Enterprise: Critical Essays in Planning Theory: Volume 1* (Abingdon on Thames: Taylor & Francis, 2008), pp. 485–505; Stephen V. Ward, 'Planning Diffusion. Agents, Mechanisms, Networks, and Theories', in Carola Hein, ed., *The Routledge Handbook of Planning History* (New York: Routledge, 2018), pp. 76–90.

¹² Thorsten Thurén, *Är det verkligen sant? Orientering i källkritik* (Stockholm: Norstedts Tryckeri, 1976); Carl Martin Allwood and Martin G. Erikson, *Grundläggande vetenskapsteori för psykologi och andra beteendevetenskaper* (Lund: Studentlitteratur, 2010); Martin Gustavsson and Yvonne Svanström, *Metod. Guide för historiska studier* (Lund: Studentlitteratur, 2022), p. 28.

¹³ Per Olof Hallman, 'Revolution i stadsbyggnadskonsten?' (newspaper article, Stockholms stadsarkiv, SE/SSA/0908/A/1, Aftonbladet, 1894-4-14).

¹⁴ Hallman, *Självbiografi från P. Hallman*.

¹⁵ Löfquist, *Riksbyggmästaren*, p. 8.

¹⁶ 'Reseskisser från Sverige och Danmark', *Teknisk Tidskrift* (journal article, Stockholms stadsarkiv, SE/SSA/0908/A/1, Teknisk Tidskrift, Afdelningen för Byggnadskonst, 1894-4-20, årg. 24, häft 4), p. 42.

¹⁷ Löfquist, *Riksbyggmästaren*, p. 12.

¹⁸ Some examples include: Reinhard Baumeister, *Stadterweiterungen in technischer, baupolizeilicher und wirtschaftlicher Beziehung* (Berlin: Verlag von Ernst & Korn, 1876); Josef Stübben, *Der Städtebau* (Darmstadt: A. Bergstrasser, 1890); Josef Stübben, 'Über einige Fragen der Städtebaukunst', *Deutsche Bauzeitung* XXV, no. 21 (1891), pp. 122–28; Josef Stübben, 'Der Individualismus im Städtebau', *Deutsche Bauzeitung* XXV, no. 49 (1891), pp. 295–98.

¹⁹ Some examples include: Camillo Sitte, *Der Städte-Bau nach seinen künstlerischen Grundsätzen* (Vienna: Graeser, 1889); Karl Henrici, 'Gedanken über das moderne Städte-Bausystem', *Deutsche Bauzeitung* XXV, no. 14 (1891), pp. 81–83; Karl Henrici, 'Zur Praxis des Preisrichters amtes bei öffentlichen Wettbewerben', *Deutsche Bauzeitung* XXV, nos. 102/103 (1891), p. 623.

²⁰ Hallman, *Självbiografi från P. Hallman*.

²¹ Sitte, *Der Städte-Bau nach seinen künstlerischen Grundsätzen*; Hallman, *Självbiografi från P. Hallman*, p. 6; Claes Caldenby and Britt-Inger Johansson, 'Historiography of Swedish Architecture', *Konsthistorisk tidskrift/ Journal of Art History* 85, no. 1 (2016), p. 3, <https://doi.org/10.1080/00233609.2016.1144691>.

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²⁵ Hallman, *Självbiografi från P. Hallman*, p. 6.

²⁶ Hallman, 'Revolution i stadsbyggnadskonsten?'

²⁷ Hallman, 'Revolution i stadsbyggnadskonsten?'

²⁸ Hallman, 'Revolution i stadsbyggnadskonsten?'

²⁹ Hallman, 'Revolution i stadsbyggnadskonsten?'; 'Teknologiska föreningens fackafdelning för byggnadskonst', *Nya Dagligt Allehanda* (newspaper article, Stockholms stadsarkiv, SE/SSA/0908/A/1, Nya Dagligt Allehanda, 1896-2-11).

³⁰ Hallman, 'Revolution i stadsbyggnadskonsten?'

³¹ Löfquist, *Riksbyggmästaren*.

³² Paulsson, *Den glömda staden*, pp. 64–65.

³³ 'Hur man skall bygga städer', *Svenska Dagbladet* (newspaper article, Stockholms stadsarkiv, SE/SSA/0908/A/1, Svenska Dagbladet, 1895-10-22).

³⁴ 'Stadsanläggningar förr och nu', *Teknisk Tidskrift* (journal article, Stockholms stadsarkiv, SE/SSA/0908/A/1, Teknisk Tidskrift, Allmänna Afdelningen, 1895-10-26, årg. 25, n:r 43).

³⁵ 'Stadsanläggningar förr och nu.'

³⁶ 'Stadsanläggningar förr och nu.'

³⁷ 'Stadsanläggningar förr och nu.'

³⁸ 'Stadsanläggningar förr och nu.'

³⁹ 'Stadsanläggningar förr och nu.'

⁴⁰ 'Stadsanläggningar förr och nu.'

⁴¹ 'Om stadsanläggningar', *Svenska Dagbladet* (newspaper article, Stockholms stadsarkiv, SE/SSA/0908/A/1, Svenska Dagbladet, 1896-1-15).

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FRAMEWORKS FOR PLANNING SPACES FOR CHILDREN IN SWEDEN – FROM PAST TO PRESENT

Linnea Fridell and Maria Kylin

ABSTRACT

The Nordic countries are internationally well known for their explicit advocacy of children's welfare over the past century. During the twentieth century, various authorities and guidelines ensured that spaces for children were taken into consideration in the planning and design of urban areas. In 2020, the United Nations Convention on the Rights of the Child was incorporated into Swedish legislation. However, contemporary research shows that places for children in Sweden, such as schoolyards and playgrounds, are actually declining in number and shrinking in size.

In the article, we trace the history of regulations for spaces for children up to recent and contemporary developments and examine the societal outlines at the time of their genesis in a planning context. The objective is to shed light on how evolving planning frameworks affect the spatial distribution of spaces for children and point to how prevailing discourses affect the social construction of childhood and how these planning frameworks also produce different concepts of childhood.

The conclusions point to how changes in planning regulations for spaces for children reflect a shifting understanding of childhood. The discussion highlights how our understanding of childhood also influences the spatial requirements for spaces for children in an urban context. It is time to incorporate the changing concept of childhood into a planning context to better understand how our ideas about childhood impact the realization of children's spatial needs.

KEYWORDS

Urban planning, guidelines, children's rights, childhood

‘SMALL CHILDREN ARE NOT FIT TO BE IN THE CITIES’

Historical accounts of the conditions for children in urban environments often begin at the turn of the past century.¹ At the time, structural changes in society, driven by industrialization and modernity, along with an increasingly mobile population and rapidly growing cities resulted in poor housing and widespread poverty, which deeply affected children’s everyday lives. Child mortality was generally high, even though the Nordic countries had some of the lowest child mortality rates in the world.² These poor conditions for children were observed both by scholars and in political discourse, where people like Ellen Key and Alva Myrdal had a big influence on the discussions concerning conditions for children in the emerging society. In 1935, Alva Myrdal expressed concern, writing:

Small children are not fit to be in the cities. At least not as the cities are disposed today. Cities are communities that are fit for adults ... but small children are wasting away. Where can they play? Where can they even dwell?

Alva Myrdal, *Stadsbarn – en bok om deras fostran i storbarnkammaren*, 1935³

Over time, various individuals and advocacy groups have posed similar concerns with varying intensity and success. Today, despite differences in urban structure and societal context, similar questions are being raised in both practices and research.⁴

Nordic cities have undergone large transformations over the past 150 years. Spaces for children in the urban context as well as their use of everyday environments have changed dramatically. Sweden has often been perceived internationally as a strong advocate for children’s rights. But does that perception still hold true today? Recent research and investigations show an urban development with fewer playgrounds and shrinking schoolyards.⁵

Spatial solutions and the use of space in our cities reflect aspects of power and general conceptions of social categories. According to several researchers, similarities can be found between childhood studies and gender studies in the sense that children as a social category, just as women, are excluded and made invisible in society and in many research fields.⁶ However, children are, by comparison, a unique group, partly because everyone has been a child and has their own experiences to reflect upon, and partly because of the long-

term consequences that the physical environment can have for children's physical and mental health. Planning always entails a form of power, with diverse motivation among the different stakeholders involved in the planning process.⁷ In a market-oriented planning context that associates the use of space with economic assets, children differ from most adults. They are a voiceless group, lacking independent economic power to influence their surroundings.

Throughout history, the social perspective on and understanding of what childhood implies has varied. During the nineteenth century, the idea of national states was closely connected to the notion that people, especially children, were connected to nature and 'the natural'. In the Nordic countries, the vision of a 'free childhood' was intimately connected with nature and seasonal changes.⁸ In the twentieth century, childhood studies was generally influenced by developmental psychology, fostering ideas that might promote the optimal development of children. This approach to studying children was criticized during the 1990s, when sociological perspectives on childhood developed and the understanding of childhood shifted to regarding it as a social construction and children as social agents.⁹ While children's welfare was given importance in earlier studies, children were understood as objects in the sense that their own experience was not a focus. The sociological perspective implies a shift in focus to children's own voices.¹⁰ In this article, our aim is to elaborate how the spatial distribution of spaces for children in urban context reflects and influences the social understanding and construction of childhood.

Today, plans and policy documents provide a framework that includes regulations and quantitative requirements for various spatial needs, such as space for parking or storm-water management. Several researchers have shown that spaces based on quantitatively measurable regulations are more likely to be implemented than those based on qualitative so-called 'soft values' or requirements.¹¹ There are no binding national laws or regulations to protect spatial dimensions for spaces of children in the planning or building process in Sweden today, or in other Nordic countries. There are, however, general formulations of qualitative, soft-value-based guidelines and suggested recommendations for spatial dimensions, which are common in other Nordic countries as well.¹² As quantitative requirements for different spatial requirements have proven to be the strongest tool for safeguarding space for different functions in urban planning, this article will mainly focus on

tracing and examining the quantitative guidelines for spaces for children in Swedish planning over the decades.

In the Nordic countries, the Convention on the Rights of the Child has been incorporated into national legislation in different ways. In Sweden, it was ratified in 1990 and incorporated into the law in 2020. However, both this convention and other frameworks concerning child-friendly cities are formulated in broad terms, with no specific spatial requirements or regulations. According to the results recently published in a report, it is unclear whether the Convention on the Rights on the Child imposes any obligations on municipalities, which bear the main responsibility for physical planning.¹³

In this article, we follow the history of regulations for spaces for children up to recent and contemporary developments and examine the societal outlines at the time of their genesis in a planning context. The objective is to shed light on how evolving planning frameworks affect the spatial distribution of spaces for children and point to how prevailing discourses affect the social construction of childhood and how these planning frameworks also produce different concepts of childhood.

We begin by outlining a rough history of places for children in Sweden in order to build the narrative from this historic perspective to official guidelines, regulations, standards, and rules for spaces for children up to the present day. These accounts provide insights into how our understanding of childhood affects the spatial distribution of spaces for children in the urban context.

Next, we discuss our recent comparative empirical study on how the contemporary guidelines of local municipalities have changed and developed over the last decade, and how these changes relate to new conditions in Swedish planning practices. Methods used in the comparative empirical study are further elaborated later in the article (under the section *The Origins of a Study from Past to Present*). Our final reflections point to how a changing discourse on planning spaces for children indicates a changing understanding of what childhood entails.

CHANGING CITIES – CHANGING EVERYDAY LIFE FOR CHILDREN

At the beginning of the twentieth century, children in Swedish cities played in the streets or in cramped backyards. Public and scholarly discussions

focussed on the need for education, discipline, and rules as well as the need to establish designated places for children so as to ensure their safety and health. Children's own voices from this time are seldom found in scientific sources.¹⁴ However, photos and films depict, in addition to poverty and deprivation, a kind of free play situated close to the everyday life of adults, offering opportunities to explore and discover things within a contextual setting.

Growing concern about the future and the disadvantages of the dense, compact city led to new visions for urban life. The garden city and, later, functionalist ideals promoted the creation of places where children could play in gardens and parks. The first park play area was established in Stockholm in the 1930s. By the 1940s, the discussions had influenced social reforms, which increased and became politically significant. Public social support through public government action was introduced and extended to all Swedish children.¹⁵ However, this shift towards greater public and governmental responsibility did not take place without political debate.

Political and ideological ideas about *Folkhemmet* (the people's home) in the 1950s and 1960s resulted in urban spatial solutions featuring spacious courtyards surrounded by three-to-four story buildings (see fig. 1). The purpose of these spacious courtyards was to support the progress of postwar ideas shaped by visions of community and social responsibility.¹⁶ Cities expanded in general, and many new urban landscapes with parks, services, and playgrounds were built near residential areas.

During the 1960s and 1970s, the public engagement and government involvement resulted in several investigations and scientific reports about children's situation in neighbourhoods.¹⁷ The development of social reform and support for families was connected to an awareness that children's mobility, play, and activities had a spatial dimension. As a result, the first guidelines for spaces for children in the urban context were published in 1970.¹⁸ These guidelines are further elaborated in the section *Transforming Guidelines and Shifting Agencies*.

Due to a shortage of housing, the government started the so-called *Miljonprogrammet* (Million Programme) from the mid-1960s to the mid-1970s. High-rise buildings were erected on an industrial scale outside of city centres. Pedestrians and car traffic were separated into different infrastructure

systems, which had the positive effect of facilitating children's mobility and the possibility for greater independent mobility between school, home, and friends. Ambitious programmes for the distribution of playgrounds – shaped by public discussions and guidelines for children's play – were implemented. However, due to industrial building techniques, the large scale, and economic incentives, these playgrounds were perceived as spacious but lacking in variety and quality.¹⁹ The monotonous environment for children in *Miljon-programmet* areas sparked strong public engagement concerning children and the built environment – coinciding with an economic depression that affected the building sector.

The political goals for housing were achieved when the housing shortage was resolved by the late 1970s. At this time, partly due to criticism of monotonous and undiversified housing areas, planning ideals shifted sharply, now focussing instead on the advantages and structure of the dense inner city.



Figure 1: The ideas of Folkhemmet resulted in spacious inner courtyards surrounded by three- to four-storey buildings. Various functions for play and leisure could be accommodated in the same space. Photo: Eva Kristensson

Spaciousness was now perceived as a problem. Operative guidelines formulated in the 1970s regarding the layout, size, and content of playgrounds were now seen as problematic and disappeared with the introduction of the new Planning and Building Act of 1987, in which planning responsibilities were shifted from the government to the municipalities.²⁰ The consequences of this are further elaborated on in the section Transforming Guidelines and Shifting Agencies.

Since the early 1990s, the ideal of the dense city has gradually been realized, and the density of residential areas has increased. Among other effects, this has resulted in smaller and fewer courtyards,²¹ historically an important place for children's daily life and play. Children's everyday mobility has also been affected, as pedestrian and motorized traffic are often integrated within the same infrastructure in dense urban environments.²²

ALLOCATED PLACES FOR PLAY

The incentive to build dedicated places for children has varied throughout history. One observation that can be made is that it was not until the late 1800s that urban spaces allocated specifically to children were reserved. Starting in the 1880s, various initiatives, especially from teachers and advocates of sports, resulted in the establishment of play parks in public spaces and parks. The primary motivation was that children's free play contributed to healthy bodies and instilled discipline, keeping children from becoming involved in criminal behaviour, and promoting social education.²³

As of 1910, playgrounds began expanding from public spaces into residential areas and courtyards. By the 1930s, attention was also drawn to play as an important activity in the development of children's imagination and creativity. In the 1940s, playgrounds were also seen as an important place for building a strong sense of community and providing children with opportunities not always available in individual homes.

Due to the ideals during *Folkhemsbygget* (the people's home), playgrounds in the 1950s became a central part of the vision of good living and housing environments. Children's independent mobility was regarded as an essential part of planning programmes. The first adventure or 'junk' playgrounds in Sweden appeared in the 1940s, based on the idea that children need zones for free play. The idea originated with Danish landscape architect Carl Theodor Sørensen, who opened the first adventure playground in Emdrup,

Copenhagen, in 1943.²⁴ In Sweden, municipal gardener Arvid Bengtsson was a driving force behind the development of several adventure playgrounds.²⁵ These playgrounds have long been the subject of debate, between adults' desire for control and children's need for free play, as well as concerns about safety. During the 1980s and 1990s most Swedish adventure playgrounds were dismantled.²⁶

During the final decades of the twentieth century, traditional playgrounds with play equipment, hard ground surface, and most often surrounded by a fence, categorized as 'Kit, fence, carpet' playgrounds, were criticized for their low play value.²⁷ By contrast, the higher play value in natural environments has been highlighted on and off, which in the Nordic countries resulted in some playgrounds being placed in natural settings. A new concept in Sweden recently is the *Lekotoper* (playtope), playgrounds in urban areas where natural settings are constructed, reinforcing both play values and ecosystem services.²⁸

Recent research nonetheless shows a significant decline in the of number of playgrounds during the responsible for managing the playground.²⁹

Schoolyards – outdoor spaces for children's physical development, education, and, play – have been considered essential since the introduction of elementary schooling in 1842. From 1865 to 1920, government school authorities produced detailed plans and guidelines for the design and physical layout of schoolyards. These guidelines provided clear directives on how the school building and its surrounding areas should reflect the importance and dignity of educational institutions. The spatial design of schoolyards was intended to encourage children's social and physical development, as well as educational goals.³⁰ Political perspectives and attitudes towards education, learning, and teaching were closely related to the spatial organization of schoolyards.

During the 1970s, the demand for women in the work force increased, and the public sector expanded with major developments in childcare policy. With new regulations in the *Barnstugeutredningen* (Inquiry into Preschools for Children), municipal authorities were now obliged to offer preschool to all six-year-old children. The new model for preschools made it possible for both parents to work, while ensuring that children were offered a good pedagogical environment.³¹ Recommended standards for the outdoor environment were formulated both in square metres and in qualitative terms, such

as the possibility to ‘play in small groups’ and the use of natural elements such as trees, hedges, bushes, hills, and so forth. For municipal authorities, this obligation to prioritize formal childcare meant a shift away from play in public parks, resulting in the closure of many playgrounds.³²

The *Skolhushandboken* (School House Handbook), published in 1979, was the final collection of guidelines and suggestions for schoolyards specified by a government agency.³³ In 1992, the *Skolöverstyrelsen* (National School Board) was decommissioned and replaced by the *Skolverket* (National Agency for Education), with its focus on curricula and teaching outcomes. Consequently, the spatial design of school buildings and schoolyards was no longer a government responsibility but was instead left to the municipalities.

During the past few decades, the Swedish government has introduced several changes that have impacted the conditions of schools’ physical learning environment. In the early twenty-first century, the reforms from the 1990s began to take effect. The changes led to a trend towards larger school units, with the aim of using resources such as staff and premises more efficiently. At a time when economic values drive planning, the ideal of a dense and mixed city along with large school units has become a central strategy in municipal school planning.³⁴ This strategy often leads to compromises in the design and quality of schools’ outdoor environments, with consequences at the level of both planning and design (see fig. 2). At the planning level, the principle of proximity to schools is increasingly being deprioritized in favour of larger school units, resulting in greater distances between children’s homes and schools. This shift reduces children’s mobility, as they become more dependent on being transported to school by car instead of getting there by walking or cycling. At the design level, the opportunity to design better play environments at larger school units with bigger schoolyards is constrained by supervision and safety requirements. As a result, schoolyards tend to be divided into smaller units by fences, thus reducing opportunities for play and outdoor recreation for children.³⁵

Today the axiom of the schoolyard as an essential outdoor space for children’s physical development, education, and play is being challenged. In 2018 and 2022, *Statistiska Centralbyrån* (Statistics Sweden) reported that schoolyards are diminishing in size and that some schools are built without any suitable adjoining outdoor environment (see fig. 3).³⁶ Similar tendencies can be seen in other Nordic countries. In Norway, the play area size per child in

kindergartens has been reduced after the former strict guideline expressing a minimum play area size per child was discarded in 2006.³⁷ In the dense city of Copenhagen, some small yards on ground level have been complemented with rooftop areas for play.³⁸

Contemporary debates concerning preschool yards, outdoor spaces for children under six years of age, show that there are preschools built without yards and a notion that rooftop gardens are suitable as preschool yards. There is also a widespread notion that preschools can compensate for children's lack of their own outdoor space by using nearby green areas instead.³⁹

TRANSFORMING GUIDELINES AND SHIFTING AGENCIES

Guidelines for children's outdoor environments and the agencies responsible for them have shifted over time (see fig. 1). In 1970, a government committee of inquiry concerning the design of urban environments for children's outdoor activities resulted in the report *Barns utemiljö*.⁴⁰ This report intro-



Figure 2: A contemporary example of a schoolyard, where the lack of space makes it difficult for vegetation to survive, resulting in a design with hard surfaces and a low play value. Photo: Anna-Maria Bondre

duced the first guidelines for the dimensioning and design of children's outdoor play areas as a basis for municipal planning, effectively recommending the protection of children's outdoor environments within the planning context. The guidelines addressed both qualitative values for the design of open spaces for children's activities on various scales and were connected with several quantitative measures specifying spatial dimensions (in metres and square metres) for spaces allocated for children.

The authors of the report argued that the greatest value of the guidelines was their mere existence, stating that quantitative measures were needed so as to be able to defend such spaces against competing interests or needs. At the same time, they expressed concern that an overreliance on quantitative



Figure 3: An example of a preschool without a proper yard, but instead only a waiting area to be used when transporting the group of children to a park or other open space, in Swedish called an utsläppsgård. Photo: Emelie Brunge

measures might come at the expense of qualitative values, leading to their implementation as a form of minimum standard, without consideration of the specific urban context or local conditions.⁴¹

During the 1970s, Sweden experienced an economic downturn, which resulted in the guidelines formulated in *Barns utemiljö* having a limited impact.⁴² Nevertheless, an important result of the report was the founding of *Lekmiljörådet* (Play Environment Council), a governmental council under the aegis of the *Socialstyrelsen* (Nation Board of Health and Welfare), with a focus on play and safety.⁴³ *Lekmiljörådet* initiated a systematic study of how children used playgrounds, with a focus on spatial requirements and the outdoor environment's impact on children's opportunities for play and development. During the same period, extensive public engagement with children's welfare led to the establishment of nonprofit groups that influenced and had an impact on the guidelines for physical planning.⁴⁴

In 1972, several reports were published because of the work by the major governmental committee of inquiry *Barnstugeutredningen*, which strongly influenced the *Svensk Byggnorm* (Swedish Building Standards) of 1983.⁴⁵ The report 'Förskolan del 2' (The Preschool Part 2),⁴⁶ presenting results from the inquiry, emphasized that children's outdoor environments should be prioritized early in the planning process to prevent these spaces from being relegated to spaces left over in planning. Just as in *Barns utemiljö*,⁴⁷ the report highlights the importance of providing enough space to be able to create qualities for play. A minimum standard of fifty square metres per child was put forward as in the case of preschools, even though a higher standard of eighty square metres per child was recommended.⁴⁸ While the origins and arguments for specific spatial measurements are unclear, previous studies indicate that requirements were based on 'proven experience and good practice', without specifying where such experience came from.⁴⁹

In the early 1980s, *Lekmiljörådet* transformed into the *Barnmiljörådet* (Children's Environment Council) under the *Socialdepartementet* (Ministry of Health and Social Affairs), with a focus on the safety and development of children and children's play.⁵⁰ During this time, research on children shifted its focus from studying children as objects to studying them as subjects with their own perspectives and culture, with an interest in children's participation and ability to influence their everyday environments.

The knowledge produced during the 1970s and 1980s resulted in advice and instructions for schoolyards, playgrounds, children, and safety as well as new legislation.⁵¹ As previously mentioned, the new Planning and Building Act, which had consequences for the planning of children's environments, was adopted in 1987. One of its objectives was to clarify the responsibilities held by the national government and municipal authorities. This marked a regime change, from a period when qualitative aspects of urban development were regulated in detailed legislation, to a period with the more general formulations in the Planning and Building Act.⁵² The responsibility for interpreting qualitative aspects was left to the building sector and the municipalities. As a result, private interests focussing on economic profit gained a larger role and became a driving force in community planning.

In 1989, *Socialstyrelsen* issued general, non-legally binding advice as guidance for municipal authorities' planning and administration of preschools, leisure centres, and childcare.⁵³ This shift meant that the responsibility for questions regarding spatial and architectural requirements for school- and preschool yards shifted from *Skolöverstyrelsen* to *Socialstyrelsen*. In 1992, *Skolöverstyrelsen* was replaced by *Skolverket*, which was not assigned any responsibility at all for school buildings or schoolyards.

The *Allmänna råden* (general advice) from *Socialstyrelsen* in 1989 stressed the importance of the urban context of childcare facilities for the outdoor environment. The recommendation of forty square metres per child, referring to *Bostadens grannskap* (the residential neighbourhood) from 1976,⁵⁴ could be reduced if a playground, green areas, or other type of play facility were located in direct proximity to the preschool yard.⁵⁵ The *Allmänna råden* from *Socialstyrelsen* later disappeared when the provisions for school and preschool activities were shifted from the Social Service Act to the School Act in 1998.⁵⁶

The ratification of the Convention on the Rights of the Child led to a debate on children's rights, resulting in the transformation of *Barnmiljörådet* into the governmental authority known as *Barnombudsmannen* (Ombudsman for Children) in 1993. This marked the end of an era when, on a national level, children's play and their outdoor environments were a focus, as well as the spatial requirements for their mobility and activities. The mandate of *Barnombudsmannen* is to represent children based on the Convention on the Rights of the Child, with a focus on social issues and legal rights.⁵⁷

The focus on play consequently shifted to a focus on children's rights, but with no spatial dimensions. Responsibility for play and outdoor environments was fragmented between municipal and governmental authorities, such as *Skolverket* and *Boverket* (National Board of Housing, Building and Planning), the Country Councils, and the private sector, without any coordination between them.⁵⁸ To compensate for the lack of focus on play and spatial requirements, the network *Barn, unga, byggd miljö* (Children, Youth and the Built Environment) was formed. The network includes both researchers and professionals working in the field of children and the built environment, and can be regarded as a local equivalent to other European networks such as the Network for Child Friendly Cities.⁵⁹

In the absence of national guidelines for children's outdoor environments (see fig. 1), the government commissioned the thinktank SLU Movium in 2006 to coordinate and disseminate knowledge about the interaction between children and youth and their outdoor environment. Until today, they continue developing knowledge that contributes the topic through collaborations with relevant authorities, regions, municipalities, companies, universities, and non-governmental organizations (NGOs).⁶⁰ The targeted government economic support for SLU Movium's special mission addressing children's outdoor spaces has recently been withdrawn and is currently being assessed regarding potential new directions, according to a decision by the Dean (SLU.ltv.2025.1.1-70).

To improve the conditions for children and young people's to access quality outdoor environments, *Boverket* was commissioned by the government in 2014 to propose national recommendations and guidelines.⁶¹ Consequently, a guidance for planning, managing, and designing the outdoor environments of schools and preschools was published 2015. The guidance emphasized the importance of space and greenery to ensure high *play value*, and stated that thirty square metres per child for schoolyards and forty square metres per child for preschool yards could be reasonable dimensions to ensure sufficient open space suitable for play and outdoor recreation. It is unclear where the measurements of square metres per child originates from. However, the authority also recommends a total area of at least 3000 square metres in order to create an environment that supports children's needs, referring to research by Mårtensson et al 2009.⁶²

In January 2020, the Convention on the Rights of the Child was incorporated into Swedish legislation. According to *Boverket*, municipal and county administrations expressed uncertainty about how to implement and monitor the Convention on the Rights of the Child alongside the Planning and Building Act.⁶³ This is confirmed by a recently published report showing that it is unclear whether the Convention on the Rights of the Child imposes any obligations on municipalities.⁶⁴ The spatial implications of this convention remain unclear, and the report from *Boverket* suggested that one way to address this could be through clarifying the Planning and Building Act via legislative changes, court rulings, or new guidance.⁶⁵ In Norway, by contrast, legislative provisions clarify the municipal authorities' responsibility to incorporate children's rights and interests in physical planning.⁶⁶

A study revealing that Swedish schoolyards are shrinking,⁶⁷ despite the guidance from 2015, led *Boverket* to conclude that municipal authorities need clearer guidelines to ensure adequate spaces for play. As a reaction, *Boverket*, in 2021, requested further authority to define requirements related to qualitative values and the location of environments for children, without defining any specific quantitative standards.⁶⁸ This suggestion was sent out for referral to the municipal authorities and other relevant actors (as further elaborated in the section The Development of Municipal Guidelines over the Past Decade).

In 2022, a new, digital, guidance was published by *Boverket*, with the objective of contributing to a sustainable, equitable, and less segregated society.⁶⁹ As in the earlier guidance published in 2015,⁷⁰ the target groups included clients, decision-makers, and professionals in the building sector, as well as school staff. The digital guidance emphasizes the value of a decent, sufficiently large school- or preschool yard, and the importance of viewing parks merely as complementary outdoor environments.⁷¹ It also highlights research, referring to Jansson et al 2021, on the total size of school- and preschool yards, suggesting that a schoolyard should comprise at least 10,000 and a preschool yard at least 6,000 square metres so as to provide good conditions for functions and qualities that ensure good play value.

THE ORIGINS OF A STUDY FROM PAST TO PRESENT

In this part of the article, we compile and reflect on the results of an empirical study and take a deeper look at how the guidelines have changed over the past decade. We also relate these changes to the evolving planning discourse.

As previously mentioned, the introduction of the new Planning and Building Act in 1987 meant that municipalities were left to define for themselves what constitutes a good outdoor environment for children, in terms of both space (as in sqm) and play values (as in quality). This lack of coordination resulted in the fragmentation of responsibility for play and outdoor environments, with no comprehensive overview of whether, or how, municipal authorities should define a good outdoor environment for children. An overview of the various guidelines authored by the municipalities was necessary when *Boverket*, in 2014, was commissioned to produce national recommendations and guidelines for children's outdoor environments (previously mentioned under the heading *Transforming Guidelines and Shifting Agencies*). A study was, consequently, conducted in 2013–14 to compile quantitative and/or qualitative guidelines for schoolyards, preschool yards, and playgrounds in twenty-seven Swedish municipalities. The result was an overview of how Swedish municipalities were planning spaces for children at the time, and what tools they were using.⁷² The results of the study were used in part in the publication *Gör plats för barn och unga*, commissioned by *Boverkets*,⁷³ followed by the *Allmänna råd*. This meant that the municipal authorities, for the first time since the *Allmänna råd* from *Socialstyrelsen* disappeared in 1998,⁷⁴ had nationally compiled advice available to guide them in planning spaces for children (see fig. 4). Shortly afterwards, in 2020, the Convention on the Rights of the Child became Swedish law.

With the aim of examining whether and how the municipal guidelines had changed over the preceding decade, we started a survey inspired by the abovementioned study of the municipal requirements for spaces for children.⁷⁵ Our interest was in exploring the influences of the guidance and the *Allmänna råd* from *Boverket* as well as the legislation of the Convention on the Rights of the Child on municipality guidelines, and, by extension, on spaces for children.

METHODS

To detect how the guidelines had changed over the past decade, we followed up on the previous study conducted in 2013–14,⁷⁶ resulting in a report

featuring a comparative empirical study.⁷⁷ We studied the same twenty-seven municipal authorities and used the same approach as in the previous study to collect guidelines for children’s outdoor environments, enabling us to compare the results with those from a decade ago. The selection of municipal authorities in the previous study was based on the 1999 official list of

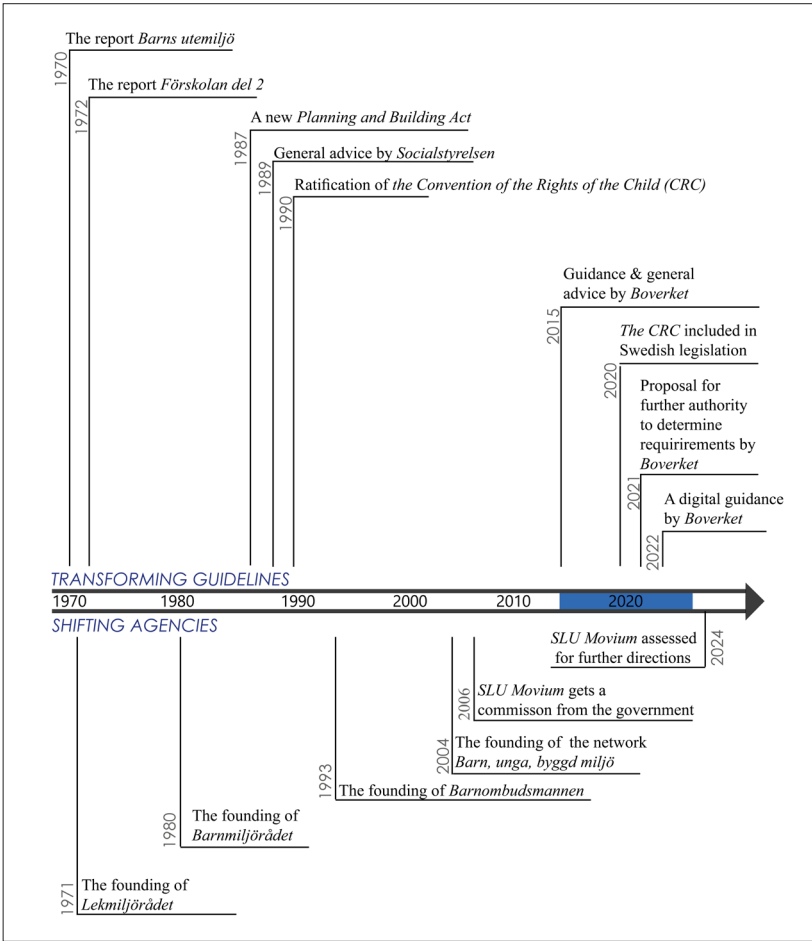


Figure 4: Timeline showing the evolution of guidelines and changes in the agencies responsible for children’s outdoor environments from 1970 until today. The blue time span marks the period (2014–23) examined in the comparative study, with the initial study conducted in 2013–14 and the follow-up study in 2022–23. Figure created by the authors.

municipalities in Sweden,⁷⁸ where categorization depended on factors such as geographical proximity to other towns or rural areas and population size.⁷⁹ Data collection took place in autumn 2022 and early spring 2023. We requested both quantitative and qualitative guidelines related to the monitoring and planning of school- and preschool yards, as well as playgrounds within the municipal context. Quantitative guidelines include all documents specifying measurable, objective criteria as tools or guides for planning spaces allocated for children. In this study, we defined qualitative guidelines as any descriptions of nonquantifiable values. For the most part, the municipal authority guidelines consisted of both quantitative criteria and qualitative descriptions of what constitutes a good outdoor environment for children.

THE DEVELOPMENT OF MUNICIPAL GUIDELINES OVER THE PAST DECADE

During the past decade, the number of guiding frameworks has increased (see fig. 4). *Boverkets' Allmänna råd* and the guidance from 2015, *Gör plats för barn och unga*, has had a significant impact on municipal authorities. The majority use either or both as references in their municipal guidelines.⁸⁰ A decade ago, municipal authorities struggled to find sources to support their own guidelines. However, some of them referred to the *Allmänna råd* of 1989,⁸¹ proven practical experiences, the *Skolehåndboken* from 1979,⁸² or a report published by the network *Barn och unga Byggt miljö* in 2006.⁸³

The results of the comparative empirical study show that a growing number of municipal authorities are developing guidelines for children's outdoor environments.⁸⁴ At the same time, as previously mentioned, recent studies show a tendency towards shrinking schoolyards and fewer playgrounds.⁸⁵ This raises an important question: Why are spaces allocated for children decreasing while the number of guidelines is increasing? A study in Norway shows that since the legally binding norm requirement for preschool yards was removed, preschool yards in Oslo became smaller.⁸⁶ One possible explanation for this is that the status of guidelines as non-legally binding requirements, along with the ideal of the dense and mixed-used city, makes it difficult for municipal authorities to prioritize spaces for children over other quantitatively regulated land uses in a market-driven planning context.

The specific quantitative measures included in municipal authorities' guidelines have become more closely aligned with each other than was the case a decade ago, and are often close to the recommendations in the guidance

from 2015. At the same time, the standards given in the municipal guidelines generally included fewer square metres per child than a decade ago. One explanation for this is that it has become more common for municipal authorities to include reasons for deviating from the recommended measures. Commonly accepted conditions that justify such deviations include proximity to green areas or the location of the school- or preschool yard in a densely built-up area. For example, a guideline might state that thirty square metres per child is a reasonable standard for school yards, but also allow for a reduction to fifteen square metres per child if the yard is situated in a densely built-up area with proximity to a park or green area. This increasing number of deviations from the recommended standards can be regarded as a way to navigate between land uses in a dense city structure. As a result, the recommendations from *Boverket* can only be fully achieved under optimal conditions. In other words, these deviations make it easier to adapt school- and preschool yards to prevailing conditions and driving forces, such as market-oriented planning priorities.

Another possible explanation for the increased number of municipal guidelines for children's outdoor environment over the past decade is the incorporation of the Convention on the Rights of the Child into Swedish law in 2020. Since several of the guidelines were published between 2000 and 2022, it is reasonable to conclude that the convention has contributed to raising awareness of the importance of planning for children's environments.

Unlike a decade ago, when most municipal authorities only had quantitative guidelines (as in sqm), most of those with quantitative guidelines today also have some kind of description of qualitative values. This could indicate a growing awareness of the complex relationship between quantitative and qualitative values, as well as the importance of scale and the context in which the play environment is situated. Or in other words: A place with high play values that also can sustain wear and tear needs adequate space (as in sqm) to be filled with qualities through design (quality).⁸⁷ However, it is not clear that municipal authorities fully understand that adequate space is crucial to achieving high play value. This is evident, when reading responses to the proposal from *Boverket* to impose higher demands on the quality and placement of schools and preschools without specifying quantitative measures (as previously mentioned in the section Transforming Guidelines and Shifting Agencies). In the referral process, three of the biggest municipalities opposed the proposal. They stated that meeting such requirements within the dense

city would not be feasible and could negatively impact children's mobility by making it difficult to secure locations for schools and preschools in compact cities.⁸⁸ Based on the responses, it seems as if municipal authorities still interpreted the proposal as including quantitative requirements.

The trend towards larger school units (as mentioned in the section *Allocated Places for Play*) also creates challenges, as this requires huge amounts of space. As mentioned above, the new digital guidance from 2022 emphasizes the importance of the total open space, recommending 6,000 square metres for preschool yards and 10,000 square metres for schoolyards.⁸⁹ However, the comparative study shows that these recommendations have not yet been implemented by most municipalities. Instead, they use standards close to the 2015 guidance, which suggests at least 3,000 square metres in total.⁹⁰ *Boverket's* 2022 recommendations for the total area can be seen as a response to the trend towards larger school units, yet municipal authorities are still largely following the first guidance from 2015.

Based on the study, it is clear that municipal administrations overseeing the planning of playgrounds most commonly include a *Parkförvaltningen* (Park Management Office), *Samhällsbyggnadsförvaltningen* (Community Planning Office), or similar office. There is an even greater variation and number of agencies engaged in the planning of school- and preschool yards. These results of the comparative study are in line with the results from a decade ago. For example, there are nine different departments engaged in the guidelines for school-/pre-schoolyards in the Stockholm municipality. The wide range of departments engaged in the organization of municipal authorities can be regarded as a reflection of the complexity of planning and designing school- and preschool yards. Such fragmentation makes the guidelines sensitive to change, and it is evident that not all departments are involved in every stage of the planning process. This could be another possible explanation for the decreasing outdoor environments for children.

THE UNDERSTANDING OF CHILDHOOD AND ITS IMPLICATION IN SPATIAL SOLUTIONS

What insights can we obtain regarding how the societal understanding of childhood affects the planning framework? Can we see if the notion of childhood affects the spatial distribution of spaces for children in the urban context?

The focus of official government obligations changed markedly from the 1980s to the 1990s: from the formation of the government agency *Lekmiljörådet* to the *Barnombudsmannen*, the emphasis shifted from play and spatial demands to children's legal rights and interests. During the same time period, *Skolöverstyrelsen* was replaced by *Skolverket*, which prioritized curricula and teaching outcomes instead of spatial requirements for schools or schoolyards. An intriguing observation with respect to these changes is that the spatial prerequisites for children's activities and learning are forgotten or simply ignored. In fact, the national guidelines formulated in 1989 by *Socialstyrelsen* were officially deregulated in 1998. It was not until 2015 that new national guidelines were formulated by a governmental authority (*Boverket*). This reveals not only a gap of twenty-six years between the formulations of national governmental guidelines, but also a more surprising seventeen-year period during which no government-specified spatial requirements for children's environments existed at all. Other researchers have observed that the physical environment is a topic that seem to have been forgotten in the official school curricula.⁹¹

The Convention on the Rights of the Child's emphasis on children's 'right to participation' as well as their 'right to protections' marked a shift in how children are perceived and raises the question of the implications of this for physical planning. Should adults take full responsibility for ensuring safe places for children? Alternatively, should the planning process focus more on children's own placemaking, where adults' aesthetic preferences or safety concerns carry less weight? With the right to participate, the focus is on children as subjects with their own experiences and right to be heard. Children's right to protection is a more complex question, as children cannot be expected to foresee the consequences of physical dangers in spatial design. A few researchers have pointed out that children's right to participate as individual subjects, in contrast to being seen as a group that is supported by official communal responsibility, is problematic in the light of spatial requirements that clearly depend on the economy.⁹² Other researchers have pointed to the danger of seeing children solely as competent agents, a view that fits well into our societal discourse on rationality and turns a blind eye to children's needs for care and protection.⁹³ The risk is thus that participatory processes including children become manipulative and lack spatial effects.

It is also noticeable how discussions around children peaked during the 1950s to 1970s. *Folkhemsbygget* is sometimes called ‘the era of social engineering’, and implies a general trust in expert knowledge and rational solutions. Children and their spatial conditions were studied using technical and rational methods and as valued objects, objects in the sense that their own opinions were not asked for. The firm belief was that the future welfare society could be realized if children were engineered in the right way. During this time, children’s movements were monitored and quantified, and their play was studied and categorized. While adults and society assumed responsibility for developing good environments for children, children’s own voices were seldom heard. We argue that childhood was viewed as a shared public responsibility, with a clear awareness that both play and mobility have spatial requirements. Spatial recommendations were driven by government initiatives and formalized in policy documents, which, in turn, influenced the architectural solutions and structure of residential areas and cities. Schools were strategically placed within the city structure to facilitate children’s mobility, while large courtyards for play and social interaction, as well as adjacent schoolyards, were considered natural parts of the built environment.

Education agencies and school policies are additional strong driving forces for changing perspectives on childhood. In the early 1990s, the possibility to establish private schools and the free choice of school affected children’s mobility in the city. Schools had previously been regarded as nodes for children’s mobility, from which the overall planning of the city took a starting point. A city structure where children could walk to school independently was now phased out and, with no national requirements for schoolyards, private schools could build schools without an outdoor environment and, consequently, optimize the economic equation for the investment.⁹⁴

In connection with the new Planning and Building Act of 1987, municipalities and the building sector took over responsibility for spatial requirements and for interpreting qualitative aspects for children in urban plans. As market-driven forces increasingly shaped planning practices, the category of ‘children’, like every other group, had to be expressed in terms economic value and purchasing power. This becomes problematic when children themselves do not have any real economic power. There is therefore a risk that children’s spatial needs, when they do actually participate in planning, will not be taken seriously, as these spatial needs lack economic value. We argue that the shift from regarding children as a shared public responsibility

to treating children as a special interest group has implications for the spatial distribution of spaces for children in the urban landscape.

The perspective on children's right to be protected offers another interesting aspect to study in relation to spatial requirements. Perceptions of what children need protection from, as well as how they should be protected, have varied over time and across contexts. Streets, in particular, have repeatedly been portrayed as dangerous and hazardous places for children, even though the reasons and arguments for protecting children have changed. In the early twentieth century, the street was seen as dangerous because it encouraged criminality and an inimical life. In the 1920s, when motor traffic became more abundant, the approach to protection was to introduce special rules for children regarding how to conduct themselves in the street and on the playground.⁹⁵ Later on, responsibility for children's safety in traffic was gradually handed over to city planners, with the task of designing safer roads and crossings. Today, children's independent street mobility is again discouraged because of perceptions of increasing criminality.⁹⁶

The focus on either social dangers or physical bodily risks has therefore oscillated depending on the time and context. One way of dealing with it in an urban planning context has been to allocate designated spaces for children, such as sports areas and playgrounds. However, even these allocated spaces can become the focus of perceived dangers. In 1999, the introduction of the EU standard for playgrounds reignited an intensive discussion of safety and risks for children.⁹⁷ The standards were in many cases interpreted as rules to be strictly followed, and initiatives for adventure playgrounds (*bygglek*), for example, became increasingly difficult. Today, societal concerns have shifted again, with growing attention being given to the rise in mental illness amongst young people. Within this discourse, arguments often highlight the importance of access to outdoor environments and opportunities for physical movement as essential factors promoting mental health and wellbeing.

Our overview of how guidelines for spaces for children have been handled over time reveals how responsibility has been passed around between different agencies across different governmental levels throughout modern history. This fragmented handling mirrors the contemporary trend, where numerous municipal departments are involved in these questions, often without coordination between them. We could optimistically interpret this as an indication that all relevant departments share responsibility for children's

welfare through spatial requirements. However, the reality seems to imply that no one takes full responsibility and that children's spatial needs become lost in translation. It therefore seems that the political will to safeguard spaces for children is weak.

From our research, it is clear that the societal understanding and social construction of childhood affects the planning framework and this, in turn, affects spatial solutions for children both in the city as a whole and in spaces allocated for children. The comparative study shows that the number of possible deviations from the standards formulated in the guidelines have increased during the past decade, which can be connected to the trend in urban development towards diminishing schoolyards and fewer playgrounds.⁹⁸ Critique is thus expressed with respect to new developments like Årstafältet and Varberg, where preschool yards are planned with square metres insufficient to achieve any play value, inadequate access to sunlight, and surrounded by car traffic.⁹⁹

The positive development of an increasing number of spaces for children in the city that peaked in the 1970s is currently on a downswing. But, based on the growing number of guidelines and their advocates, it is clear that the need to defend spatial requirements for children has increased over the past decade as well as discussions on how to do so. As contemporary planning discourse most efficiently safeguards functions through quantitative measurements, maybe it is now time to discuss binding laws regarding spatial requirements for spaces for children? Or in other words: a prerequisite for creating and designing qualitative play values is that there is space to do so, and a quantitative spatial requirement bound by law would facilitate safeguarding places for children.

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