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Kulturlandskapet & Novia University of Applied Sciences

REFLECTING HISTORY IN ARCHITECTURE AND VERNACULAR DESIGN

DIRECTING SUSTAINABLE FUTURES

Editors: Magnus Rönn, Helena Teräväinen and Leif Östman

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CONTENT

INTRODUCTION

Magnus Rönn, Helena Teräväinen and Leif Östman

Conference – theme and tracks

This publication of proceedings (anthology) presents seven peer reviewed scientific contributions presented at the international conference in Rome, 28-31 August 2024 at Sapienza University. It was a joint venture with the annual meeting of the EAA, European Association of Archaeologists. The simulations-organized conference for knowledge production represents a cooperation between EAA and the Department of Ancient World Studies at the Sapienza University of Rome, in partnership with the Italian Ministry of Culture, the Municipality of Rome, and the Lazio Region, with support from the public Universities of Rome and Latium, the National Research Council, Foreign Academies, and Professional Organizations.

The overall concept in the invitation from the organizer was 'Persisting with Change'. This general topic was the further dived into seven sub-tracks to attract a worldwide audience: 1) The Material Record: Current Trends and Future Directions, 2) Archaeological Sciences, Humanities and the Digital Era: Bridging the Gaps, 3) The Life of Archaeological Heritage in Society, 4) Persisting with Change: Theory and Archaeological Scrutiny, 5) All Roads Lead to Rome: Multiscalar Interactions, 6) The Mediterranean from Within, and finally 7) Archaeology of Sustainability through World Crises, Climate Change, Conflicts and War (Programme Book, 2024).

The main title of the conference—Persisting with Change—may be seen as a reminder of the book from 1982 by Professor Marshall Berman called *All That Is Solid Melts Into Air: The Experience of Modernity*, which in turn reflects a famous statement from Karl Marx in 1948 summarizing the impact on cultural heritage and living conditions by the emerging industrialization dressed in capitalism. Alteration is the new 'normal'. Nothing is stable forever—cultural heritage needs care, maintenance, and management to keep its cultural values and architectural qualities. The past is both changing through new interpretations and yet at hand as tradition and frozen design ideas still possible to see and read, remember, or miss in the built environment.

The broad invitation by EAA did succeed in generating scholars in different scientific fields to arrange sessions within the conference. In this case, we invited scholars representing architecture and urban design, architectural conservators, and archaeologists to participate in a multidisciplinary session called 'All Roads Lead to Rome: Multiscalar Interactions' with a special topic entitled 'Reflecting History in Architecture and Vernacular Design - Directing Sustainable Futures'. The field of knowledge focuses on cultural heritage values and architectural quality identified in the built environment. Thess proceedings are the result of our session, including a selection of seven contributions divided into three sections presenting different approaches to the common topic.

Background

Scholars from Finland and Sweden have proudly joined forces to organize a multidisciplinary session combining lessons from architectural history to designing sustainable futures. This approach illustrates a scope in searching for knowledge and facilitating essential insights, by looking at the past for the development of a sustainable environment facing the world of tomorrow. The common objective was to explore cultural heritages. Learning from architectural history offers possibilities for directing the future towards sustainability, to shape our perception of the present and the future visions: 'Historia magistra vitae'. This quote by Cicero (106–43 BC) in De Oratore, two thousand years ago, is a Latin expression meaning 'life's teacher', is a personification of history, and is of Hellenistic origin (Koselleck, 2004). History puts forward architectural quality and cultural values as a long-term perspective, representing surviving changes of mode in both vernacular buildings and constructions designed by architects as expressions of their time. The idea behind this assumption is that the solutions to design problems in cultural heritage may bridge borders and be shared in societies. This is why we have added 'Directing Sustainable Futures' to the topic's scope.

The topic

The multidisciplinary session was approved by the scientific committee appointed by the organiser of the conference. After acceptance, a call for papers to the session was published early in 2024. We wanted to connect history and the future. The call was looking for research of architecture and urban design, heritage, and material culture in relation to designing sustainable dwellings and settlements. This perspective primarily focuses on place and space and the ways in which design is influenced by the past,

sustainable innovations, and interventions at sites. By applying architectural theory and history, and viewing vernacular heritage that fits to a thriving, sustainable future, the session was expected to provide new insights into creating architecture and ways of living that are sustainable, and suitable for the cultural characteristics of different sites in Europe. The topic intended to provide lessons from the past. The call was sent to scholars in architecture and urban design, architectural conservators, and archaeologists at universities, mainly in Europe. We asked them to submit contributions and make contributions within the scope specified in four directions:

- Sustainability, heritage, and the urban space,
- Innovation, new thinking in architecture, and learning from the past,
- Expressions of history in sustainable design,
- Architecture and archaeology in cooperation.

The call for papers generated several abstracts for the forthcoming conference. Seven of them have been developed into full papers and selected for the publication of these proceedings (anthology). The contributions in the anthology are all peer-reviewed by recognized researchers. As the organiser of the session and editors of the proceedings, it is important to uphold the scientific quality and provide quality assurance. We therefore proudly present the outcome of our call for papers in this book, divided in three sections.

SECTION I

History and buildings: From inventory to classification and scenarios
This section includes three articles: *Vernacular architecture in the Navia River basin (Asturias, Spain)* by Dr. Santiago Rodríguez-Pérez, University of Oviedo; *The Greek Archipelago's architectural forms of sustainability: from tradition to future* by Professor Emeritus Athanasios Kouzelis, University of Western Attica; and *Experimenting with scenarios as tools for analysing conflicting ideas in building conservation. A scenario exercise based on ideas of John Dewey* by Architect (PhD) Leif Östman, Novia University of Applied Sciences.

Santiago Rodriguez Pérez explores the architectural characteristics of traditional hillside or *casería* buildings of the Navia River Valley, in the Asturias region in the northwest of the Iberian Peninsula. These buildings are notable for their design, which harmonizes with the natural landscape and reflects the historical socio-economic conditions of the area. The earliest examples of human cultures found in this area are from the 5th century, but the paper

focuses on the built structures and agricultural life from the 18th and 19th centuries, and the development of different farmhouse types and farming practices. The paper describes the organisation of spaces and provides a typology for different types of historical buildings, mainly constructed by means of local materials, such as natural stone and wood. The author notes that the stones are locally extracted in quarries, but the stone materials vary depending on their specific uses and qualities. The *casería* constitutes the homestead of a family including its adjacent buildings related to agricultural production. The oldest examples of the houses date back to the mid-18th century. It includes domestic spaces (housing) and productive spaces (granaries, stables, cellars, auxiliary buildings, etc.), as well as terraced farmland and pasture, and usage rights over communal lands, mills, etc. These *caserías* are grouped into villages and parishes, forming the basis of rural settlements since the Middle Ages. The text is a documentation of different houses and life forms spread along the valley (including a set of pictures illustrating the typology), compiled into a database in combination with GIS. The methods include using photogrammetry, interviews and 3D digital models for further analysis and to document their current state and style, and to draw up plans. Simultaneously it is a documentation of historical human lifeforms manifested in these structures. The author expresses concern regarding the conservation of this local cultural heritage as it tends to be abandoned due to depopulation and migration, but there is an emerging interest in preserving the vernacular architecture of the region. This interest is driven by the recognition of the cultural and historical value of these traditional buildings.

The paper by Athanasios Kouzelis explores the principles of architectural design and construction typology of residential buildings on the islands of the Greek Archipelago. The introduction highlights the development of a classification as a form of bio-climatic tradition. The traditional settlements are influenced by climate and their history of maritime dangers, and the need to safeguard against intruders. The paper emphasizes geographical localisation of settlements on safe high grounds, respectively close to the sea with good climatic conditions, creating a specific morphology. The author details various aspects of sustainable solutions in historical architecture, including orientation, sun exposure, materials, and construction methods (such as shell, masonry, and roof), ventilation, cooling, water collection, primary production, and livelihood activities. These practices are rooted in the tangible and intangible heritage of the local societies. The unique characteristics of these mainly residential facilities are a result of historical

practices that have been developed over time, spanning from the 15th to the 19th centuries, adapting to the specific environmental and economic conditions of the islands.

The text also follows up on the development of conservation regulations in Greece and how cultural heritage is interpreted within it. The paper proposes a revision of current zoning legislation to facilitate sustainability. It discusses new energy infrastructures as a complement and the need to respectfully incorporate it into the landscape. The document provides a comprehensive overview of the sustainable architectural practices in the Greek Archipelago, highlighting the importance of bio-climatic sustainability. The contribution emphasises the role of historical practices, vernacular architecture, and archaeological evidence in shaping the architectural fabric on the islands. It proposes that this can be a support in the ongoing renewal forces of developments for tourism and new energy infrastructures. Sustainability is seen as an integral part of the continuous process of redevelopment, where new energy infrastructure and hospitality developments must respect both the traditional architectural morphology and the social context, and thus will contribute to conservation of cultural heritage.

The paper *Experimenting with scenarios as tools for analysing conflicting ideas in building conservation* by Leif Östman explores the use of scenarios as a tool for analysing conflicting ideas in building conservation. The background of the study is rooted in the recognition of the conflicts between different interests in the coastal area in the Kvarken Natural World Heritage, between the preservation of wildlife, tourism, and cultural heritage. The method is based on the idea of creating scenarios to understand the impact of different decisions and potential developments. The research is based on an inventory of old buildings. The aim of the inventory was to evaluate the value of these buildings as representations of the area's fishing and seafaring history and to propose regulations for the area's planning. Almost all original functions of these buildings have ceased to exist. The study presents three scenarios to test the impact of conflicting interests:

Preservation of Wildlife: This scenario focuses on the importance of maintaining the natural habitat and biodiversity of the coastal area in relation to the built cultural heritage. It emphasises the wish to protect wildlife from all negative impacts of human activities, such as tourism and current forms of local archipelago lifestyle.

Tourism Development: This scenario highlights the potential economic benefits of developing tourism in the area. It considers the construction of new facilities and infrastructure to attract tourists, which could lead to increased job opportunities. This, however, will bring changes to the environment.

Cultural Heritage Conservation: This scenario prioritizes the preservation of the area's cultural heritage. It advocates for the restoration and maintenance of these structures to retain their historical and cultural significance in conflict with the idea of a strict preservation of wildlife.

The study concludes that there is a need for a balanced approach that considers all three scenarios. It emphasizes the importance of cross-sectoral dialogue and collaboration to address the conflicting interests and find sustainable solutions.

SECTION II

Material as culture carriers: From craftmanship and tradition to indoor design

The second section contains two articles: *The contribution of traditional wood claddings to regenerative architecture: inputs from literature and field studies in Sweden, Norway, and France* by PhD Student Geraldine Brun, University of Gothenburg, and *Decorating homes with crude constructions: exposed log walls in Finnish home decoration magazines 2017–2023* by Dr. Iida Kalakoski, Tampere University and Riina Siren, Architect and Building Conservator. The articles open two different views on restoration and conservation: Geraldine Brun use the regenerative design framework in her study and then follows the traditional craftwork in timber facades. Kalakoski and Siren investigate the trend in home-decoration magazines of how to expose log walls and destroy all covering layers; they then make different interpretations on authenticity in conservation theories.

Geraldine Brun applies in her study the regenerative design framework, established by the scholar in landscape architecture, John Tillman Lyle, and uses inputs from heritage, focusing on timber claddings. Ecosystems have the innate regenerative capacity to recover from disturbances, which goes beyond the abilities to function, conserve, or even improve. Adopting development strategies based on long-term benefit is a way to increase our environmental resilience, fostered as well by the diversity of place-specific regenerative designs. While principles for regenerative design and architecture have

been defined, the resulting frameworks are considered too complex to implement in construction projects but supplementing a dense theoretical background with substantial inputs can make regenerative practices more intuitive and thus more widespread. The traditional craft of cladding facades with lapped wooden elements was scrutinised in Northern Norway, Western Sweden, and Champagne in France. The study confronts the literature with field observations and craft people's experience, indicating the adaptative nature of traditional practices and appears as a replicable method to inform regenerative design.

The author provides inspiring examples and specifications for the regenerative design of timber claddings; these can be made of local species and last longer than it takes for the resource to replenish. Pine, spruce, and alder were the most encountered species, and their specificities should be accounted for when choosing the manufacturing and assembling methods. The results show that cladding design should be based on an evaluation of four risks: wood decay, erosion, deformation, and cracking. The paper by Geraldine Brun has a rich collection of exact documentation of her field work with over twenty figures, which profoundly illustrate the process and the inventory, including maps, photographs, and drawings.

Kalakoski and Siren have as their research material several Finnish home decoration magazines from the years 2017–2023. They examined the prevalence of log walls in Finnish home interiors introduced in the magazines and analysed the way the exposed log walls were concerned in the articles. According to their study, exposed log walls increase residents' experience of the building's historicity and are related to the meanings of authenticity. There is a clear contradiction between the homeowners and professionally defined authenticity, which already in 1964, in the international conservation document, the Venice Charter, highlighted the value of historical layers in conservation. The reproductions of exposed log walls seem to shape people's perceptions of historical buildings, their conservation and constitute the resident's experience of authenticity.

The authors classify the references to authenticity in home decoration magazines into three groups: atmosphere, experience, and story. They then argue that as the concept of authenticity has widened, it has become increasingly vague and thus less useful as a tool for valuing built heritage. In the 1990s, the concept of *integrity* was introduced alongside *authenticity*, describing

authenticity from the perspectives of the wholeness and the continuity of an object. While conservation aims to protect its subjects with minimal interventions and material conservation, the focus of home decoration magazine articles is often on large and impressive changes, as well as the creativity and effort through which a beautiful and picturesque home is modified and built. The renovator of an old house focused on the atmosphere, experientiality, and narrativity of the home, and the exposure of the log wall may be perceived as a strong expression of this. However, the mentions of "original log walls" in home decoration magazines are misleading.

Kalakoski and Siren state in conclusion that from the standpoint of conservation theory the perspectives of home decorators can widen the conventional understanding. Since the 1990s, conservation theory has particularly sought to recognize the diversity of values in heritage, yet the pursuit of universal values has overshadowed personal feelings. However, the built environment is the physical home of humans, and it is crucial for its preservation to recognize the different types of attachment to it. As an individual phenomenon, the paradox of the authenticity of log walls illustrates the conflict between the preservation of history, the presentation of history, and historical atmosphere.

SECTION III

Urban transformation: From cultural heritage to architectural qualities in planning
The third and last section also has two articles: *The Heritagization of Different Building Types in a Finnish Rural Town* by Dr. Helena Teräväinen, Aalto University, and *Architectural dilemmas in Gothenburg: Professions and politics in designing of areas of national importance in cultural heritage policy* by Dr. Magnus Rönn, Kulturlandskapet (The Cultural Landscape).

Helena Teräväinen is researching variances in the heritagization process of different building types, and uses examples from the small, rural town of Lapua in Finland. Heritagization is a concept describing how objects, buildings, and landscapes become heritage. In the end, the concept of cultural sustainability is opened and compared with the heritagization process.

Typically, historic buildings are pointed out as cultural heritage by authorities, due to their uniqueness, or their artistic, scientific, aesthetic, cultural, historical, educational, landscape, and community values. Institutional

heritagization or legitimation was earlier the common, almost the only, way in Finland that an object could be evaluated as "heritage". An important background in the case is a national inventory of the built, cultural environment executed in 2009 by the Finnish Heritage Agency. The outcome is listed heritages recognized both by the law and in governmental guidelines; the top-down approach met bottom-up opinions at a local level. The article illustrates the conflicting perspectives and strategies on cultural heritage and compares four different building types and their heritagization: 1) Lapua Cathedral from Religious Buildings, 2) Vernacular Architecture, as Ostrobothnia Peasant Houses, 3) Town Hall from Administration Buildings and 4) Old Paukku from Industrial buildings.

In her article, Teräväinen distinguishes different heritagization processes from the literature: Community-Based Heritagization as Creation, Cultural Heritagization as Identization, and Institutional Heritagization as Legitimation. Lapua Cathedral, as well as almost all church buildings, has been legitimated as heritage for two hundred years – in other words from the beginning; the other heritagization types were combined later than this. The old industrial buildings, on the contrary usually were not valued as heritage, but when the former Lapua cartridge factory was repaired and changed to Culture Centre Old Paukku – it has gone through many kinds of heritagizations. The local council did not accept that the old industrial buildings should be protected as built heritage in 1994, but the regional authorities praised the cultural heritage values of the site, and it was listed as a national heritage in the inventory of 2009. But one of the significant buildings in Old Paukku is still endangered by destruction.

The paper by Magnus Rönn is a case study of an architecture and planning project in Gothenburg taking place at a site in an area of national heritage interest, because of its cultural values and architectural qualities. The research questions critical dilemmas and the aim is to describe, show, understand, and discuss the case from a professional perspective. The cultural heritage at the site is regulated in the Environmental Code, and the power over the site is divided between the city and the county administrative board. The National Heritage Board in Sweden has singled out the inner city as a national interest for preservation. The architecture and planning projects started in 2016 when the city organized an open design-developer competition. Design and bids on the land were the governing criteria for the assessment. However, in the land allocation agreement, the city demanded that the winning developer organize

a parallel commission. The architectural office behind the winning design in the competition was excluded. This is the first critical dilemma in the case. The second dilemma involves a business relationship in the parallel commission, challenging the ethical code of conduct adopted by Swedish Architects.

The parallel commission was executed by the town planning office and Swedish Architects. The judging criteria looked for quality in the urban design. The winning proposal is inspired by the use of the site by a circus, and has joyful, bright facades. After the jury selected their best solution for the assignment, the politicians criticized the winning proposal. They stopped the implementation in 2023 due to the design (lack of a classical style), and the choice of the urban design in the contribution (lack of a closed block). The official at the town planning office had to provide a new detailed development plan following strict political requirements. This is the third dilemma. There has never been classical styled architecture in a closed block on the site. The development breaks the cultural history of the plot. The officials are trying to compensate for the negative impact, hoping to get acceptance for exploitation by the county administrative board. Cultural compensation is used as a problem-solving practice.

Summary and comments

The seven contributions in the book bring important perspectives into the overall theme of the conference, 'Persisting with Change'. The invitation operated as an umbrella concept providing new research in a field of knowledge production dominated by the built environment. The call for papers resulted in fruitful comments about cultural heritage and a deeper understanding of its role in society.

Santiago Rodriguez Pérez shows how the traditional built environment relates to living conditions and changes that threaten loss of local cultures. Action is needed to stop depopulation and migration. Athanasios Kouzelis describes settlements influenced by climate and their history of maritime dangers. In contrast to findings by Pérez, the cultural heritage needs to be safeguarded against intruders. Leif Östman presents conflicting scenarios and analyses them in a study of cultural heritage in an archipelago facing survival. The history is transferred to both contemporary findings and possible futures.

Geraldine Brun investigates the traditional craft of cladding facades with timber elements in Norway, Sweden, and France. Material made from local

natural forests operated best. In this perspective, designing, making, and maintaining timber cladding by a crafted approach is a way to prioritize for sustainability, and to foster resilience and diversity in opposition to industry's mode of production. Iida Kalakoski and Riina Siren go inside old buildings and reveal new non-professional perceptions of authenticity in interior design. In their homes, laypeople have begun to visualize the original wood in the walls by removing covering layers of material. This renovation is supported by Decoration magazines by showing photos of the log surfaces that create a sense of belonging in old houses.

Two papers discuss culture heritage in a planning context. Helena Teräväinen illustrates that listed buildings effect town planning in a complex interplay between top-down recommendations as well as bottom-up practice. The outcome is accompanied by uncertainty. The cultural heritagization process in planning may both end in professional protection or in acceptance of losses. Also, Magnus Rönn points out professional dilemmas in a plan and architectural project undergoing competition, parallel commission, and detailed development planning. In this case, the law is a floating limitation hindering over-expanding alterations of sites pointed out to be of national heritage importance.

The conference's overarching theme 'Persisting with Change' thus shows several facets. But this diversity of viewpoints can also contain coherent patterns. All authors relate, for example, to the notion of time, history, and cultural heritage at risk. The past is still present in the contributions as remains – physical objects as well as memories and ideas (Rentzhog, 2014). A summarising conclusion is therefore that the cultural environment has several parallel and interwoven traces of different actions, knowledge, and understanding of our surroundings.

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VERNACULAR ARCHITECTURE IN THE NAVIA RIVER BASIN (ASTURIAS, SPAIN)

Santiago Rodríguez-Pérez

ABSTRACT

This work presents a synthesis of the results of the author's doctoral research, focused on the study of the landscape and vernacular architecture of a region in Asturias (Spain), the Navia River valley. It is a mid-mountain area where an interesting ethnographic and architectural cultural heritage is preserved. The research explores how the communities in the area shaped the landscape and their own architectural language through different building typologies, their historical evolution, and their relationship with their culture.

In the study area, the rural and peasant habitat is structured around the casería, the basic unit of settlement that includes domestic spaces (housing) and productive spaces (granaries, stables, cellars, auxiliary buildings, etc.), as well as farmland and pasture, and usage rights over communal lands, mills, etc. The *caserías* are grouped into villages and parishes and have formed the basis of rural settlement in the northwest of the Iberian Peninsula since the Middle Ages.

The conservation of this heritage faces various challenges: abandonment and ruin due to emigration and rural depopulation, urban speculation, as well as the lack of social awareness, economic resources, and legal protection regulations. Despite this, communities still maintain important ties with their cultural heritage. The objectives of my doctoral thesis were to establish a theoretical and methodological foundation for the study of landscape and architecture, to develop digital tools for the documentation and study of the cultural heritage of rural communities, and to provide a preliminary approach to the historical evolution of the peasant societies in the Navia Valley through their tangible and intangible culture.

KEYWORDS
Vernacular architecture, building archaeology, rural housing, Navia river basin, Asturias.

INTRODUCTION

In recent years, I have been developing a research project on vernacular architecture, material culture, and ethnography of the rural areas in western Asturias, a region in the northwest of the Iberian Peninsula. In these regions, pre-modern or pre-industrial peasant lifestyles remained alive until the last decades of the 20th century. The impact of industrialization and the transformations of modernity have led to a slow but inexorable disappearance of traditional culture and the people who lived it. Despite all this, a rich material and immaterial cultural heritage linked to local communities and their traditional ways of life is still preserved. This includes knowledge about the use of resources and the landscape, agricultural and livestock systems, the production of objects, the construction of buildings, intangible heritage, language, etc. This ethnographic heritage offers many possibilities for studying peasant culture and the materiality of pre-industrial societies.

THE LANDSCAPE OF THE MIDDLE NAVIA VALLEY

The study area is in the northwest of the Iberian Peninsula, along the Atlantic coast, in the western part of the Asturias region. This mid-mountain region features a complex terrain characterized by deep valleys nestled between steep-sided mountain ranges that run perpendicular to the coast and through which the main rivers flow. Geologically, the terrain is composed of metamorphic rocks, predominantly slate and sandstone strata, interspersed with white Armorican quartzite, which form the mountain alignments. The mountain ranges do not exceed 1,250 meters in altitude and have gently sloping summits. The Navia River forms a deep, well-sheltered valley where the population and agricultural activities are concentrated. Climatically, the region is located to the west of the Atlantic Biogeographic Region, enjoying mild temperatures and abundant cloud cover and precipitation. The rich vegetation cover includes formations of oak forests, cork oak groves, and riparian forests, as well as extensive meadows and scrubland. The study area encompasses the municipalities of Eilao/Illano, Pezós/Pesoz, Grandas de Salime, and Allande.

BRIEF HISTORY AND EVOLUTION OF SETTLEMENT

The oldest evidence of settlement in the inland valleys of the Navia dates to the 5th millennium B.C. Neolithic communities developed livestock-based economies in the area, which led to deforestation to increase the grazing area, and the creation of seasonal and transhumant settlements (Villa Valdés, 2010, p. 65). The most outstanding manifestations of their presence are the
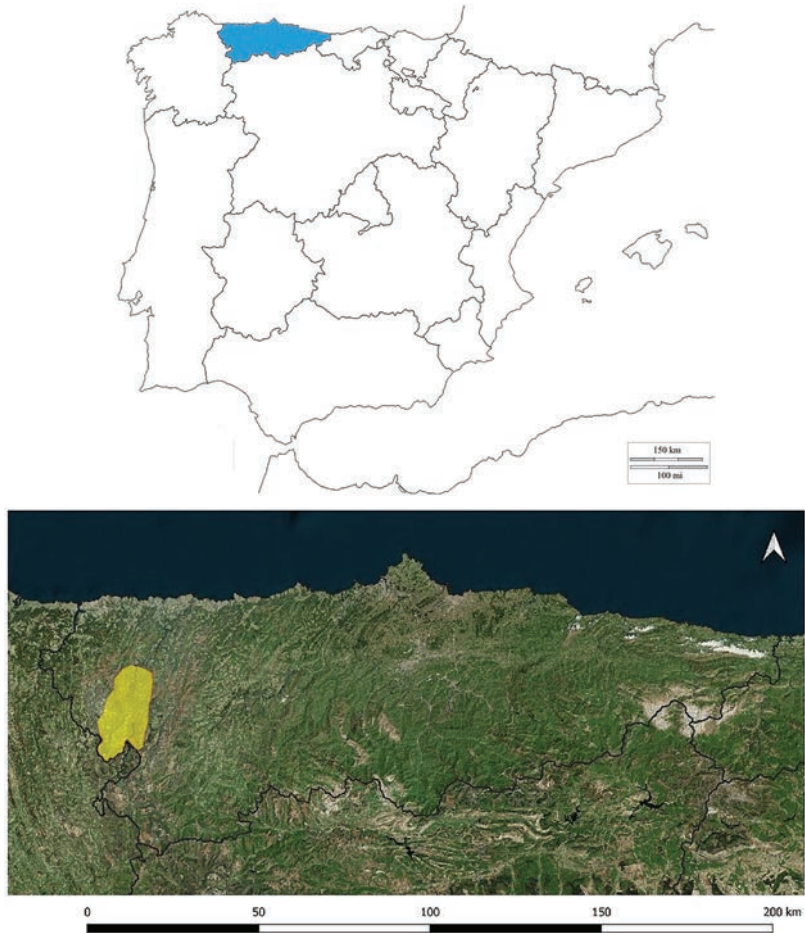
Figures 1 and 2. Geographic location of the study area, in Spain and in the region of Asturias.
Source: Own elaboration based on data from the National Geographic Institute of Spain.

megalithic tomb stations, scattered throughout the territory. From the Late Bronze Age onwards, a whole series of hillforts arose in the northwest of the Iberian Peninsula, forming what is known as the Iron Age *castreña* culture. These settlements, distributed throughout the territory, were in strategic places and were protected by defensive devices that included moats and walled spaces, housing domestic habitats of circular huts. The communities of the castra survived until the Romanisation period and were dedicated to agricultural activity and mining. Gradually, from Late Antiquity onwards, the fortified *castreño* settlements were abandoned in favour of flat places where agricultural activity was possible, establishing a new relationship

between the settlement and the economic space. Although very few remains have been excavated and studied in the region, written documentation shows that between the 8th and 9th centuries the process of village formation was at an advanced stage, transforming the old centres of Roman power and colonising new areas. The current rural settlement has its origins in these early medieval villages, which initiated the configuration of the rural landscape that has survived to the present day. They are settlements made up of groups of houses and small orchards, surrounded by land dedicated to cereal cultivation, and on the margins of which we find areas of woodland and pasture for livestock (Fernández Mier et al., 2019). From the Middle Ages onwards, the administrative reorganisation of these communities began, with the appearance of manorial and ecclesiastical powers and the administrative organisation into parishes, which, later modified by the liberal reforms, would continue to the present day. It was also from the Middle Ages onwards that the agrarian space that we now consider traditional, and the forms of exploitation of the territory, took shape.

THE CASERÍA

In rural Asturias, the house is an entity with its own personality. It refers not only to an architectural structure, but also to several overlapping realities. In the first place, the *casería* is made up of the constructions that provide room and shelter for a family group. Secondly, within the traditional agrarian system, the house constitutes the basic cell of production and consumption. The *casería* is equipped with all the elements for agricultural production and includes, in addition to the dwelling, the annexed constructions dedicated to agriculture and storage (stables, cellars, raised barns, haystacks, etc.), as well as all the vegetable gardens, farmland, rights of use over mills, communal land, mountains, etc. (García García, 1976, p. 270; García Martínez, 2007a, p. 51).

The importance of the house for pre-industrial societies is essential, as some authors have already pointed out. The house constitutes the main nucleus of domestic and family life, it is the place of work and agricultural production, and at the same time, its members maintain an indissoluble link with it, since the house provides them with a name and identity (González Ruibal, 2003, p. 102). This symbiosis is manifested precisely in the name of the house: in western Asturias it usually adopts the name of an ancestor who built it or who achieved a certain renown, or another toponym. This name endures, its members being recognised by their belonging to it, as happens with the farmhouse in Euskadi (Arruza, 2017, p. 44). When the time comes, even if

the owners change, the new inhabitants will continue to be recognised by the nickname of the house to which they belong (García Martínez, 2008). In the area under study, western Asturias, the link between house and family is very close. The model of inheritance transmission is carried out through a son (*meirazo, meiralgo, petrucio*, etc.) who receives all the inheritance of the house, forcing the rest of the siblings to marry outside or remain in the background. Thus, a trunk family model is established, in which the grandparents, the *meirazo* and his wife and children live together in the same house, perpetuating the link between the family group and the house over time (García García, 1976, p. 286). The house has a functional spatial configuration, suitable for habitation, but it is also a cultural representation of its own inhabitants. It is necessary to consider it as a symbolic system, which responds to certain forms of social organisation and cultural values (Sánchez Pérez & Cátedra Tomás, 1990, p. 5). Culture acts as a designer of space, and it is here where the keys to its articulation must be sought. However, authors like Rapoport and others agree in denying any form of determinism, as the built environment acts neutrally: it can inhibit or facilitate behaviour, but it does not determine it. Houses can shape the habitus, imposing a way of perceiving the world, social relations, gender, or family, but they can also accommodate a new habitus, not necessarily setting the rules (González Ruibal, 2003, p. 99). Beyond a functional space, a set of buildings that shelters a family group, the house itself is the cultural representation of its inhabitants. As a place of enculturation of family members, the rural dwelling, in the words of Xurxo Ayán, is a repository of memory, a perfect machine for generating identity (X. M. Ayán Vila, 2020).

The bond between family and house is so strong that the house improves if the family prospers. Thus, this is the most precious investment of the family group, which over time contributes to the extension and improvement of the property, and to the increase of the assets of the homestead. In fact, the peasantry takes it as its own duty to improve the building in which it lives (González Ruibal, 2003, p. 76). Throughout history, the house and its domestic spaces have been modified and adapted to new circumstances, incorporating new spaces, discarding or reconverting others, and the interior spaces and their material and symbolic functionality have also been defined. For this reason, although the buildings apparently belong to specific typologies, they have a long history of alterations, extensions and demolitions, which sometimes leave their mark in relatively complex stratigraphies.

THE CRISIS OF THE TRADITIONAL RURAL WORLD AND THE PROBLEMS OF CONSERVING THE VERNACULAR ARCHITECTURAL HERITAGE

The industrial transformation of the Spanish and Asturian countryside began at the end of the 19th century. The traditional farmhouse and the peasantry as a social group disappeared, giving way to large farms, focused on meat and dairy production, as well as agriculture based on fodder and forestry monocultures. One of the consequences of these 20th century transformations is the depopulation of rural areas, which in Spain is particularly worrying, with the massive migration of young people to urban areas and the ageing of the population, resulting in numerous abandoned villages.

These transformations have a major impact on traditional architecture in rural areas. Ethnographic heritage and vernacular architecture are very fragile and face a series of problems that hinder their conservation. In economically developed areas, traditional buildings are either aggressively rehabilitated or replaced by modern constructions, and in more impoverished areas they are ruined by neglect. In Spain, legislation on the protection of traditional architecture is ambiguous. Not all buildings of interest are protected, and in most cases, urban planning allows for very permissive rehabilitations of the cultural or environmental values of buildings, or their demolition. Vernacular architecture has little social value, and there is no real awareness of the need for its conservation among rural inhabitants. Likewise, traditional building trades and techniques have practically disappeared, and there is a lack of people specialised in architectural conservation. It is also necessary to emphasise that there is a very large number of buildings: in the study area, most of the existing constructions in the villages could be catalogued as popular architecture, representing more than 90% of the buildings. In the conservation of elements of special interest, such as raised wooden granaries (*hórreos*), restoration costs are high, and the population must resort to the scarce public aid for their rehabilitation.

For all these reasons, we consider that this heritage is in danger of disappearing, and its research can be useful both to learn about many aspects of the anthropology and history of the peasantry, and to contribute to its conservation or to propose alternatives for the future of the rural environment. Therefore, in line with the work of many other researchers, the main focus of my research in recent years has been on the documentation and study of the tangible and intangible cultural heritage of the rural communities of western

Asturias, from an interdisciplinary perspective. To this end, I aim to answer several research questions: How can the cultural heritage produced by rural communities, especially their landscapes and architecture, be documented? What is the sociocultural context of this heritage? How has it evolved throughout history? What does its conservation contribute to society, and what can we do to maintain it? My doctoral thesis (a synthesis of which I present in this article) represents the first part of this research, which I hope to continue developing in the future, in other areas of the northwest of the Iberian Peninsula.

THEORETICAL APPROACHES

It is necessary to make a brief introduction to the theoretical approaches on which the research is based. Firstly, it should be noted that from our point of view, the entire architectural record is a product of culture through its material manifestations, and therefore, susceptible of being studied with archaeological methodology, with a transdisciplinary perspective (Mañana Borrazás et al., 2002). Secondly, architecture is inseparable from landscape. The human species intervenes on the territories in which it settles, modelling them according to its needs and converting them into cultural habitats. In this process, architecture plays a fundamental role. The connection between landscape and architecture is well defined by Glassie (2000, p. 22): the moment landscape landmarks are marked, or two stones are placed to indicate a path, the delimitation of space begins, the separation between outside and inside, and from there to the construction of larger walls and buildings is a step. In this way, architecture shapes the globality of the human-built environment, including landscapes, urban spaces and buildings, which establishes a dialogue between past and future (Roth, 1999). Landscape is the result of the interaction over time between people and the environment in which they live, being "the socio-cultural product created by the objectification, on the environment and in spatial terms, of social action of both material and imaginary character" (Criado Boado, 1999, p. 5), and is constituted by the physical environment, the social environment and the symbolic environment, modelled over time by the temporal dimension (Arruza, 2017, p. 14; Askasibar, 1999, p. 8; X. Ayán Vila, 2005, p. 36; Criado Boado, 1993, 1999). The necessary tool for the transformation of the landscape is culture, understood holistically as the set of knowledge and know-how indispensable for the development of human life in different contexts, and encompasses all the knowledge available to the species for its adaptation to the environment, as well as its material and intangible productions, in other words, all human work (Piña, 1985, p. 22).

The result of human interaction generates material and immaterial references. In it, elements that have survived in a long-lasting process coexist with others that have gradually been transformed and adapted to economic, social, and cultural changes. At the same time, new elements have emerged within the material culture, and this process of transformation has continued up to the present day. The result of all this is the cultural and architectural landscape, which is the same landscape we inhabit today, the result of the accumulation of all the historical landscapes that have occurred over time, and in which all the traces of human activity, past and present, are intermingled, superimposed and combined, forming a palimpsest (Bailey, 2007).

The great majority of the buildings studied in this work would fall within what has traditionally been called vernacular, popular or traditional architecture, or other appellatives (primitive, without architects, etc.) when they have not been openly questioned as architecture, or even placed in a lower category, as constructions. This reveals the debate that has historically existed around their definition, which we will not go into here. We agree with Blier (2006, p. 231), who, following Norberg-Schulz (1971/1980) and Bonta (1978), states that separating so-called vernacular architecture from other architectural types is a fallacious way of thinking. Architecture is still architecture, regardless of when, where, by whom or for whom it was created, so we avoid the use of labels. All architecture is part of the landscape, and we do not distinguish between small buildings and great works, as they are all productions of human material culture and are embedded in cultural contexts (Rapoport, 1969/1972; Johnson, 2010). Nevertheless, the term 'vernacular' is useful to give visibility to a large percentage of built heritage, as well as to make it a category of analysis (Glassie, 2000, p. 21).

METHODOLOGICAL APPROACHES

In this research it is necessary to systematise and organise hundreds of elements within a local culture, to understand their genesis and development, their context and relationships, their historical evolution, and their relationship with the society that created them, and at the same time, to understand the relationship that society maintains with materiality, through other tools such as operational chains, landscape archaeology, architectural archaeology, or symmetrical archaeology (González Ruibal, 2007).

Complex systems provide a theoretical and methodological framework for the organisation of information at different scales (house, village, parish,

municipality, etc.), which is why models of this type are applied in the study of traditional societies in the study area. From our theoretical approach, we consider human cultures as organic entities, in which all the elements that make up the culture, material and immaterial, form a complex network of nodes that establish various types of relationships, linear or not. They are not synchronic entities, since over time changes are introduced that can modify part or all the cultural system, introducing the factor of temporality. For this reason, we consider it necessary to go beyond chronological frameworks, considering the long duration of many processes in pre-industrial societies, applying an updated systemic approach (Johnson, 2000, p. 100).

The objective of our work is the inventory and documentation of the vernacular architectural heritage scattered throughout the study territory. Given that this heritage is at severe risk of disappearing, we consider it necessary to document it digitally for several reasons: to gather information about the material culture that can provide data for research; to enable its preservation despite the destruction of these assets through virtual copies; and to pass on this legacy to future generations. The rural community holds a vast array of knowledge, including traditional crafts, which have significant ethnographic value for understanding their culture and the history of the landscape. However, the population is very aged, making it urgent to document all this knowledge. To this end, we have designed our own database application, linked to a GIS, as well as an image bank with metadata. The database incorporates files for cataloguing movable and immovable property (identifiable by unique codes), as well as sub-files for the archaeological study of the buildings, a multilingual cultural heritage thesaurus and a file of terms for research. The system also incorporates databases for bibliographic references, and for documentary and oral sources. All these elements interrelate with each other, making it possible to build the most complete cultural heritage information system possible. The system was designed for the cataloguing of vernacular architectural heritage but can be used to document other heritages. Thus, all the architectural elements of the territory are registered in a digital file; they are geolocated in the cartography and documented photographically in an image bank, labelling all the material with metadata and unique codes that allow their identification. From there, work is carried out using photogrammetry and 3D digital models to reliably document their current state and draw up plans. Based on this cataloguing and documentation, the archaeological study of the real estate is carried out: the different construction typologies and their

chronologies are categorised and analysed, by means of readings of facings and archaeological documentation, which involves stylistic comparison with dated buildings, the use of documentary and oral sources. Samples of materials are also taken, and recently, in collaboration with other researchers, we have begun work on dendrochronology to try to provide reliable dates for the construction of these buildings, given the scarcity of chronological data we have in this regard. In this sense, this is pioneering work in the region, as these techniques had never been applied here for the study of vernacular architecture.

TRADITIONAL CONSTRUCTION IN THE NAVIA VALLEY

Despite the numerous studies on the vernacular architecture of the Asturias region, there are fewer studies available for the western part of the region. Among others, notable works include those by Armando Graña and Juaco López on the elevated granaries of the Allande council (1983), the research by Ástur Paredes and Adolfo García on Asturian popular architecture (2006), and the more recent work by Javier Fernández-Catuxo (2011) on elevated granaries in western Asturias and eastern Galicia. Adolfo García is also the author of a study on the anthropology of housing in the area (2007).

In the following pages we offer a summary of the local architecture, very briefly given the length of this article, but which aims to offer the reader an approximation to the built heritage of the region. Perhaps one of the most distinctive features of the architecture of the Navia valley, as in western Asturias and eastern Galicia, is the grey colour of slate. It is the fundamental building material in masonry and roofs and is also used for other types of construction work. However, the geology of the region is not homogeneous, since within the slate there are different formations and lithotypes, which condition the local masonry. Other stone materials such as white quartzite or *ferrial*, granite or *pedra de grao*, or sandstone, are also extracted in very specific points of the territory. The material is extracted in local quarries, where, depending on their properties, stone is obtained for masonry (quarries known as *pedreiras*), slate slabs for roofing and large flat pieces of various thicknesses (*louxeiras*), or stones suitable for tilling (*canteiras*). The extraction of building materials is carried out by the owners who wish to carry out a work with the collaboration of the community or part of it, as it is considered a task that falls within the reciprocal relations between neighbours. The masonry of most of the buildings is made of slate masonry, using larger pieces for corners, lintels, etc. Depending on the type of construction, the masonry is laid dry, as in enclosure walls, terracing or

other works, or using clay mortar, which is more common in buildings and helps to set the stones. Knowledge of masonry was widespread among the peasantry, who carried out the usual repairs, while more complex works were carried out by specialised stonemasons. The use of lime is very rare, as it is a material that does not exist in the region and must be imported. Its use is restricted to domestic interiors, and its use began to become widespread at the end of the 19th century, used mainly for interior plastering and in the exterior decoration of some buildings. The use of pigments for decoration and protection of wood was also rare in the area until the end of the 19th century. Generally, iron oxide or *mazarron*, which is extracted from local veins, lime white and blue are used.

Regarding wood, the most used in construction are chestnut and oak, and with industrialisation, from the end of the 19th century onwards, pine was introduced. The wood is cut in the communal forests or on private properties, by teams of carpenters who work and square the trunks with an

Figure 3. Hórreo *thatched with rye straw, in Pasarón (Vilanova d'Ozcos).*

axe to obtain beams and saw by hand the planks that will later be used in carpentry. Apart from the main walls, which are made of stone and have a structural function, timber is used for roof trusses, floor slabs and enclosures, and in constructions made entirely of wood, such as overhead barns (*hórreos* and *paneras*).

The oldest roofing system that has survived to the present day is that of green roofs, although today their use is marginal and very few craftsmen are involved in their construction. Rye straw is used for this purpose, which is laid using the '*beo*' technique, which consists of arranging the thatch on the roof, spreading it out in a regular manner, and fastening it using a braided rope made of *uz brancal* (*erica arborea*) (Graña García & López Álvarez, 2007; Parque Histórico del Navia & Oficina de Coordinación Cultural y Lingüística, 2011, p. 9). Its use is highly appreciated in overhead barns, as it maintains a suitable thermal stability inside for the preservation of meat products.

Although the use of slate slabs for roofing has been known since ancient times, it seems that the use of slate roofs was restricted to buildings of a certain quality. From the 16th-17th centuries onwards, based on documentary evidence, slate roofing seems to have become more widespread among the peasantry, although rye continued to be used as a roofing material. The technique of thatching did not disappear, and in fact it is still alive and well in the municipality of Grandas de Salime.

CONSTRUCTION TYPOLOGIES

Henry Glassie, in his classic study of eighteenth-century Virginia architecture (1975), concluded that the design of dwellings was based on a series of basic units, to which craftsmen applied a system of 'grammatical' rules to obtain different typologies of dwellings and buildings. Glassie referred to this method as transformational grammar, that is, a series of units that went through cognitive phases until they became houses (Johnson, 2000, p. 123). In our research we found a certain diversity of building typologies (dwellings, stables, barns, haystacks, etc.), but we observed that there is a recognisable local building language in the different building elements (walls, spans, dimensions, etc.), which combine to form the different building typologies, building and architectural typologies that also evolve over time.

THE HOUSE

In the Navia valley, the most primitive house model is the stone house with a round floor plan and a green roof. This typology, whose most remote antecedents would be the protohistoric huts found in the fortified settlements of the northwest (X. M. Ayán Vila et al., 2005) is widespread in other areas of Asturias, León and Galicia, and its use has survived until recent times in some regions, where some buildings are still preserved (called *pallozas* or *pallazas* in Galicia). There is an abundant bibliography on this type of building (Graña García & López Álvarez, 1990, 2007; Paredes, 1997), so we will not go into this in detail here. In the study area there are some elements of this typology whose chronology is still uncertain.

From the 17th century onwards, the usual model of peasant housing that can be found throughout the area began to spread, which some researchers call a block house (Paredes & García Martínez, 2006). They are cubic houses, made of slate masonry and covered with three or four slopes of thatch or slab. The openings are small and frequently framed in large pieces of stonework and lack lime plastering on the interior and exterior. When the house is in areas with a steep slope, they adapt to the hillside. Generally, on the lower floor is

Figure 4. Round house in Grandas de Salime.

the court or stable, where the livestock is housed. The cellars are also located here, if the house has them. On the upper floor, which can be accessed by a ramp on the slope, there is a doorway and the kitchen, and above the stable, there is the living room and the bedrooms. In the humblest houses, there are no individual bedrooms, the living room being an open space that houses the beds and other belongings. We have been able to date some of the oldest examples to the middle of the 18th century by inscriptions.

At the end of the 19th century, a very common typology in the coastal area of western Asturias, which some authors call evolved "casías" (Paredes & García Martínez, 2006), began to spread towards the interior valleys. Its characteristic profile is that of a large rectangular volume, with a half-hip roof, eliminating the apex of the gable end and thus finishing off the ridge with a chamfered ridge. The typologies of the late 19th and early 20th centuries began to incorporate glass windows, which replaced the old wooden windows; the use of whitewashing and interior distributions around corridors and rooms also became popular. The construction of new houses was influenced by the arrival of capital from emigration to America, which made it possible to renovate the old houses or to build new, larger, more spacious and luminous houses

Figure 5. Remains of a round house in Argul Pezós/Pesoz).

Figures 6, 7 and 8: Houses in Pelorde (Pezós/Pesoz), 18th century.

Figure 9: Casa de Linera (Oneta, Villayón).

Figure 10: Brañaveya (Pezós/Pesoz).

Figure 11: Vilar de Buyaso (Eilao/Illano). Different typologies of hillside or turria houses, one of the most widespread peasant housing morphologies in the region. As can be seen in the images, they maintain a certain harmony in the system of proportions, distributing the openings of the facade and the interior around modules of one to four openings.

of various heights. However, the distribution continues to be very similar: stables and cellars on the lower floor, the kitchen, living room and bedrooms on the second floor, and an attic that can be used as an auxiliary space or to store agricultural products. From the 1920s onwards, rectangular houses with gable roofs began to be built, and finally, from the 1960s onwards, new types of houses made of modern materials were introduced, which broke with the constructive logic of the traditional architecture of the area.

In this typological evolution proposal, it is necessary to consider several factors. The houses remain in use for long periods of time, and innovations are introduced on the older ones, such as the opening of larger glazed openings, extensions in height or sides, etc., following the construction fashions of the moment, but sometimes the traditional forms survive, so that the constructive analysis must include the typologies of both the building and its different elements. It is also necessary to consider the continuous reuse of old elements, or the survival of some forms in some areas, so that the typology of the building is not always a reliable indicator of its age. We often find in the buildings, wall stratigraphies, sometimes of a certain complexity, which show that they are not static architectures, but are in continuous adaptation and evolution over time.

Figures 12 and 13. Mixed models of turria and casia house in Zadamoño (Eilao/Illano).

THE ROOMS OF THE HOUSE

The kitchen

The kitchen is the main space of the peasant house: here people cooked, prepared bread, warmed up the family, received friends and relatives, and told stories and tales. The oldest kitchens are called *tizois* kitchens. They are kitchens with open fires on the floor, whose antecedents go back to prehistoric times, to the Iron Age homes that can be found in many castle dwellings. Generally, they usually have a floor tiled with slate slabs, and the fire is in the central space. The smoke comes out through the roof, by *lumieiras,* or in the most developed and wealthy houses, with wooden bells. The smoke is also used for curing sausages and dried fruits such as chestnuts. Around the hearth there is a bench, the *escano*, where the family sits, which incorporates

a table that can be raised and lowered, the *mesa de levante*. The cauldrons and pots for cooking are hung from an iron chain called *gamalleira*, attached to the *guindaste*, a structure consisting of a horizontal pole supported by a rotating vertical pole, which allows the pots to be moved from the fire. In the kitchen we also find the bread oven, a fundamental element for domestic food production, since it constitutes the basis of the diet (García García, 1976, p. 274; Paredes & García Martínez, 2006, p. 101; García Martínez, 2007a, p. 52; Fernandi Bas Costales, 2019).

In the first decades of the 20th century, iron kitchens, called economical or *bilbaínas*, began to become widespread. They did not replace the old *tizois* kitchens, since these were still used as auxiliary spaces to cure the *mondongo* (the products of the slaughter), or to prepare the food for the animals. Sometimes they coexist in the same room, but if the kitchen room is large, it can be divided in two by a partition wall, with one part for the old kitchen and another for the new one. Other rooms can also be adapted without demolishing the old kitchen. The new kitchens incorporated modern elements, such as countertops and tile fronts, or the generalized use of the table and chairs to sit down to eat, new furniture and appliances, etc.

Figure 14. Tizois *kitchen of the* Casa del Vilar, *in Argul (Pezós/Pesoz). Source: www.grupocountryhomes.com/ propiedad/1219-casa-a-reformar-en-pueblo-medieval*

Living rooms and bedrooms

The space of the hall was common in the houses of wealthy farmers and local elites, and little by little, it was incorporated into the homes of the common peasants. It is usually located in the noblest part of the house, on the upper floor, with the openings facing the facade. In the common houses it has diverse uses, from bedroom, storage of the harvest of certain products, chests for clothes or corridor-distributor (Graña García & López Álvarez, 1996, p. 401). It is the place where families celebrate family and social events.

The living room plays the role of a social integrator. It is an interior space of the house, but projected outward, which opens to the rest of the neighbourhood on certain dates of special relevance for the community and the family. Thus, around meals and domestic events, the use of this space makes it an integrator of the family within the rural community (García García, 1976, p. 276). It is the place where family members and friends of the domestic group gather for meals on special days, such as patron saint festivities or on farm chores, slaughtering, and *mallegas*. It is also used in family events, such as wedding meals, and it is the place where the deceased are watched over before being taken to the church and the cemetery. And therefore, the living room is a space of social representation of the family itself, but within the

Figure 15. Wood stove, ca. 1920-30. Vilarmayor (Grandas de Salime). During the 1920s and 1930s, the renovation of the kitchen in popular houses began, with the introduction of wood-burning stoves, tiles and new furniture and customs.

dwelling. The furniture here is of a certain quality. We find a large table with chairs and the cupboard or sideboard where the chinaware is kept. The living room, as a space of representation, also houses objects of a symbolic nature, such as the clock, which became widespread in houses of a certain level at the end of the 19th century. With the appearance of photography, the portraits of the ancestors are placed here, highlighting the photos of the ancestral marriages of the family. Thus, this space becomes a space of representation and reproduction of the social and identity capital of the family (Rodríguez Pérez, 2022). The houses also had sleeping quarters, at least that of the main couple, and others such as the *folga* room, which was intended for guests. But given the large number of family members, beds were often shared, and the living room space was occupied by the young children.

STABLES

The *corte* or stable is the space destined for the shelter of animals, bovine as well as equine, goat and sheep; habitually they are located in the first floor of the house. In the houses attached to slopes a part is excavated from the rock to increase the usable space. They are very simple stables, with a manger where the animals are tied up and are provided with fodder. They do not have channels for the evacuation of liquids or similar. The pavement may be

Figure 16. Main hall of the house of the Chousaveya, in Llombatín (Eilao). The house, dating from the 18th-19th century, underwent a major renovation in 1929. This is the time when the space of the central hall and the four rooms on the sides are configured, generating private spaces. The space is whitewashed and painted, and a sash window is opened to let in light and create a viewpoint.

of trodden earth or of the bedrock itself. They are usually dark spaces, with small flared windows as the only ventilation.

AGRICULTURAL CONSTRUCTIONS

Bread cereals (wheat, rye, corn, etc.) have been the basis of the local peasantry's diet until recent times, and the vital calendar of rural communities is structured around agricultural cycles (García Martínez, 2007b). Given that families produced for their own sustenance, and for the payment of the rents of the lands owned by noble or ecclesiastical elites, the farmhouses and villages were equipped with a series of buildings and spaces necessary for the exploitation of the agricultural and livestock resources of the landscape, such as cereal production and other crops such as vineyards, fruit and forest species, or the production of honey.

Around the villages we find the cultivation areas. The *vilares* and *cortinales* are the lands of cereal cultivation, delimited with dry masonry walls (with different typologies), or enclosures of large slabs of slate driven into the ground (*chantos*). These enclosures enclose private properties, meadows, roads, communal spaces, etc., and prevent the passage of livestock. The steepest terrains are adapted for cultivation by the construction of terracing

Figure 17: Stable in Argul (Pezós/Pesoz).

structures, the *zapatas*. Thus, by means of stone walls, slopes and cobblestones, a network of roads, irrigation channels, etc. is formed to form the agricultural space around the villages.

The villages and *caserías* have a series of specific constructions for the processing, conservation, and preparation of cereals for consumption. Once the grain has been harvested in the cultivated lands, the *cuelmos* are transferred to the *eiras de mallar*. These are open spaces, covered with large slate slabs,

Figure 18. Footings to create terraced cultivation spaces in Salime (Grandas de Salime).

Figure 19. Eira de mallar *in Pelorde (Pezós/Pesoz).*

where the *mallega* takes place, an event that in August brings together family members and neighbours to carry out the work of separating the grain and straw, and cleaning the cereal to store it in the raised granaries, the *hórreos.*

RAISED GRANARIES

The bread cycle continues with the conservation of the grain in raised granaries (*hórreos, paneras* and *cabazos*). These constructions are perhaps the most archetypal of Asturian rural architecture and enjoy legal protection and social recognition of their cultural value. In the study area, some reference works have been published on these elements, such as the works of Juaco López and Armando Graña (1983), and Fernández-Catuxo (2011). There is evidence of the existence of raised granaries in the northwest of the Iberian Peninsula since pre-Roman times. In early medieval times the existence of these elements is cited in written documentation (*orrea*), whose typology was probably the same as that of the Galician *cabaceiros*: small circular structures, made with walls of woven rods and conical plant cover, a typology that is documented in the area until the 17th century, according to some descriptions of the 16th century (Alfonso de Carvallo, 1695, p. 26). From the 17th-18th centuries onwards, the *hórreo* model with wooden box and hipped roof began to spread throughout the region, following the models that were being developed in central and eastern Asturias since the end of the 15th century (Graña García & López Álvarez, 1986, p. 460). In our research, the oldest references to raised granaries are traced in notarial documentation, which attests to the presence of *hórreos* with wattle walls (*orrio de bara*, 1583). Already in the 18th century, written documentation records the presence of hundreds of these elements associated with farmhouses, which always repeat the same scheme: four-foot granaries made of chestnut or oak wood, many of which have a space underneath that is used as a stable, cellar or auxiliary space.

The *panera* is a typological evolution of the *hórreo,* it maintains the same scheme but instead of a square floor plan, it increases its surface with a rectangular floor plan, since it is designed to house larger harvests. Their construction spread in the area from the end of the 18th century; they continued to be built until the first decades of the 20th century, and we find them especially in the eastern part of the Navia river, in the municipalities of Allande and Eilao/Illano. From the inscriptions engraved on them and the data of the written documentation, we know that from the first half of the 19th century many hórreos were replaced by paneras (Graña García & López Álvarez, 1983). In them, there are also carved decorative programs of

Figure 20. Hórreo in Pelorde (Pezós/Pesoz).

Figure 21. Panera in Estela (Eilao/Illano).

Figure 22. Mondoñedo style cabazo in Santesteba (Eilao).

the so-called Allande style (Graña García & López Álvarez, 1985), mainly *tetrasqueles*, clocks, monstrances, etc. At the end of the 19th century and up to the middle of the 20th century, another type of overhead granary spread throughout the region, the *cabazos*, a building derived from the raised granaries of the neighboring region of Galicia. These are rectangular buildings with wooden slatted walls, more suitable for air circulation and corn preservation (Fernández-Catuxo García, 2011; Arrieta Berdasco & Ferreira Martínez, 2022).

HYDRAULIC MILLS

One of the most studied elements in the works on vernacular architecture are the hydraulic mills, wide-spread throughout northern Spain due to the abundance of rivers and streams that allow the use of hydraulic energy for milling. Their use made it possible to transform the cereals produced in the farmhouses into bread flour for domestic consumption (García Martínez, 2007b, p. 59). The presence of hydraulic mills in the area has been documented since the early Middle Ages, in the documentation of ecclesiastical archives such as that of the monastery of Santa María de Villanueva de Oscos. With the data we have today and without archaeological excavations, we cannot certify the real age of many of these mills, although most of them, or at least their location, is recorded in the Ensenada Cadastre (1752). In some cases,

during the prospecting works, we have located remains of old canalizations, with post holes carved in the rock of the riverbed and indications of wooden dams, which indicates that many of the present mills are in the same location of other previous ones.

The typology is common to all these mills: a dam that cuts the river and diverts the water (*a turula)* into a channel that leads the water to the dam where the water is dammed (*banzao*), at a sufficient height to descend through the bucket and come out with pressure to move the horizontal wheel mechanism (*rodez*), which transmits the movement to the millstones (*moas, molas*). In the most modern examples, the machinery is made of iron and includes sieves for *peneirar* (sifting the flour and separating it from the bran).

WINE PRODUCTION

Historically, vineyards have been one of the most important agricultural productions in the middle Navia basin, and in the past, they occupied a significant area of the lower quality land (Pasarín Arne, 2004). Most of the farmhouses in the area had their own vines or vineyard cultivation areas and produced wine for domestic consumption and surplus for sale. Its cultivation was carried out either next to the houses, with wooden trellises supported on pillars and walls, or in vineyards on suitable land. The constructions of wine

Figure 23. Interior of the Sequeiros mill (Pezós/Pesoz).

production would be the subject of much more extensive work, so we will limit ourselves to briefly outline them. The peasants had communal or private wine presses, where the must was extracted with large wooden presses, or they did the process themselves by treading it in vats (truncated cone-shaped barrels open at the top, or in baths (large monoxylic pieces in the shape of a bathtub). The grapes matured in barrels in the cellars, which can be found inside the house, in small buildings near the farmhouses, or located in the vineyards, where the wines are kept in barrels or *bocóis* until consumption. The cellars are of two types: either a room in the lower part of the house, occupying dark, humid spaces in contact with the ground, or in free-standing buildings, of small dimensions and one or two floors. The vats are stored on the lower one, and the upper one maintains an auxiliary use. The orientation is usually towards the north, to prevent the sun's rays from entering and to keep the room cold and humid. Occasionally in the vineyards, we find sets of cellars such as the one in Busmayor (Grandas), where families used to go during the harvest season.

Figure 24: *"Molín veyo" (old mill) of Brañaveya.*

Figure 25. *Cortín in Valledor (Allande).*

BEE PRODUCTION

Beekeeping has a long tradition in the study area and is one of the most important activities of the homestead (López Álvarez, 1994). Honey for domestic consumption and wax were obtained from the hives. Most families owned several beehives (*trobos*), distributed around the house or in *cortines* located in the most unproductive or scrub areas. The *cortín* is a circular structure, 7 to 10 meters in diameter, which is in places far from domestic habitats, in unproductive areas, and can house several dozen hives,

thus protecting them from bear attacks. The chronology of this typology is uncertain, although there are documents that date its origin to the 17th century. Many of them are still in use today.

FORESTRY PRODUCTION

In Asturias, the chestnut tree (*castanea sativa*) has historically been a fundamental resource for rural societies. The chestnut was a staple food in the rural diet, sometimes replacing bread for several months of the year (Fernández Benítez et al., 2002, p. 54). Traditionally, chestnut trees were planted in *soutos* (chestnut-growing forests), on the edges of farms or in communal spaces. Each farm had several trees, considered as another property of the farm, which could be sold or rented. Chestnut trees had a mixed production, oriented to both fruit and timber production. To this end, work was done on the cultivation of the tree by means of pollarding, which consisted of pruning the upper branches to obtain shafts without cutting down the tree and thus not losing its fruit production.

Chestnuts were harvested in the autumn, by shaking the branches to release the burrs, which were then collected and stored in the *corripas*. The *corripas* are dry stone constructions, between 2 and 4 meters in diameter, where the chestnuts were stored with their burrs. There, they were covered with

Figures 26 and 27. Pollarded chestnut in Villanueva de Santu Adrianu (Asturias). Corripa at Sequeiros (Pezós/Pesoz).

ferns and vegetable matter until the burrs rotted, and after two months the chestnuts were removed and taken to the house to be cured and preserved in *hórreos* and *paneras* (García Martínez, 2007a, p. 118). Dozens of these constructions have been preserved in the study area.

HUNTING STRUCTURES

In this area, we can also find a constructive typology of a hunting character, the *cousos* for hunting wolves. These structures consist basically of an enclosed enclosure of masonry walls of a certain thickness (up to 2 meters), and between 2 and 3 meters high. In the case of those preserved in the upper Navia, some are quite large (75x44 meters). They form a closed enclosure, without entrances, and topped by an overhang towards the interior. Inside these corrals, a bait was placed, dead or alive, to attract the predator (generally wolves), which, once inside, could not get out. The

Figures 28 and 29. Couso dos lobos of Pelorde (Pezós/Pesoz).

oldest references to the construction of these structures date back to the early medieval period in other areas of the Iberian Peninsula (Ordóñez Castañón & Concepción Suárez, 2017, p. 75). In the future, it would be interesting to carry out archaeological interventions on these elements to characterize them and determine their chronology.

CONCLUSION - FUTURE PERSPECTIVES FOR THE CONSERVATION OF THIS HERITAGE

The perspective for the conservation of vernacular architectural heritage is discouraging. The crisis of the rural environment in some European regions, together with industrialisation and changing patterns of land use, have led to rural depopulation and little interest in the preservation of these assets. As a result, a significant part of the vernacular architectural heritage has fallen into ruin and neglect.

In recent years, a network of associations dedicated to the defence of ethnographic heritage has emerged in Asturias, with the aim of increasing social awareness of the value of these elements and the need for their conservation. However, the problems do not have a simple solution. For this reason, we believe that the most viable solution at present is the graphic documentation of this heritage (both photographic and planimetric), research into its characteristics and history, and the implementation of heritage education actions that transmit the importance of its preservation to young people. Documenting and studying the ethnographic heritage of rural communities is a fundamental tool for the future, as valuable lessons can be gained from this knowledge. This means recording and understanding how a piece of land has been occupied, and how a human group has developed techno-ecological adaptation strategies throughout history. It also means understanding ways of life and production, material culture (architecture, artefacts, etc.), as well as the intangible world linked to these objects: mentalities, religiosity, forms of social organisation, leisure, etc. This type of study makes it possible to establish links between culture, heritage, landscape, and contemporary societies.

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THE GREEK ARCHIPELAGO'S ARCHITECTURAL FORMS OF SUSTAINABILITY - FROM TRADITION TO FUTURE

Athanasios Kouzelis

ABSTRACT

The paper aims to highlight the importance of traditional know-how for the development of a future sustainable built environment in island regions. Considering that sustainability is a multidisciplinary science, which ensures the constant sufficiency of economic, environmental, and social resources, its historical background and perspective are sought in a region with a singular geographical composition: the islands of the Greek Archipelago.

Assuming that the study of the past plays a key role in shaping our perception of the present and our views on the future, the aim is to record the structural means of sustainability in the vernacular architecture and material culture of the settlements of the Greek archipelago, in order to compare them with the applied modern innovations of sustainability in the context of the preservation of the cultural heritage of the region.

The main research question is whether traditional sustainability methods are models for the production of sustainable ecosystems by the application of modern technology in order to preserve the unique cultural character of the built environment on the islands of the Greek archipelago. For this reason, the present paper is based on the methodological issues of the utilization of existing architectural and archaeological evidence in order to build a more comprehensive view of the cultural heritage compensation character, in relation to the implemented and future sustainability planning in the region.

Through the noting of sustainability appliances of the islands' vernacular architecture and their correlation with technological innovations, which serve a thriving sustainable future, the aimed deduction is to validate any modern, advanced sustainable know-how, regarding bioclimatic architecture and renewable natural resources for living, so that it becomes compatible with the cultural singularity of the Greek archipelago's islands.

KEYWORDS
Past and modern sustainability, architectural tradition, cultural compensation.

INTRODUCTION

The principles of architectural design and construction typology of the residential tradition in the islands of the Greek Archipelago have developed a specific coding character for the purposes of bio-climatic and ecological sustainability, developed according to the maritime economy and, in most cases the remote geographical distance of the islands from the continental country.

Based on climatic data, the geographical morphology and the economy of the islands of the Greek archipelago, sustainable planning practices were historically developed, which are reflected in the singularity of residential facilities and their spaces' placing, in relation to orientation, sun exposure, materials and construction methods (shell, masonry, roof), ventilation, cooling, water collection, primary production, and livelihood activities, which concern the tangible and intangible heritage of the local societies (Poulios, 2014; Cult, 2014).

The study and classification of the bio-climatic traditions of this island cultural heritage is an interesting scientific source of sustainable development principles and methods, which can be used in contemporary sustainability projects to provide useful empirical architectural, environmental, and economic evidence that benefits the adaptability of new technologies to the existing cultural heritage. The elements of traditional sustainability compared to modern bioclimatic design methods aim to adapt modern sustainability technologies with historically handed down empirical techniques, in order to form a unified architectural fabric that preserves the quality and character of island residential and environmental aesthetics.

The sustainable planning that benefits from the empirical tradition, while protecting the architectural and cultural wealth of the islands of the Greek archipelago, ensures all the necessary resources of sustainability in a distributed sea-land environment, which requires increasingly more interventions due to the touristic interest. As a model of sustainable residential management and development, it offers regulatory and adaptive specifications for the implementation of appropriate spatial planning and construction interventions that use renewable natural and artificial resources (Henche, Salvaj, Cuesta-Valiño, 2020).

In the view of this research approach, the application of modern mechanisms and systems of autonomous energy, as well as the sustainability of material

resources, is proposed to be adapted to a systematic historical and scientific elaboration of the known sustainable achievements of the culture of the Greek archipelago. This includes the preservation and continuity of the morphology of buildings and structures, with the application of improved innovative architectural techniques, which respect the experience and spirit of the people of the region, contributing to the preservation of the historical heritage and the sustainable values and traditions of the Greek archipelago.

RESEARCH APPROACH

The present research approach aims to investigate the empirical conditions and principles of sustainability highlighted by the vernacular architecture of the islands of the Greek archipelago, and their correlation with the possibilities and prospects of modern institutionalized sustainability technology, as a means of developing the cultural image of the residential and bioclimatic life of the mentioned island' settlements.

The main problems to be examined concern: a) the environmental and morphological parameters that have traditionally determined the typology of buildings, residential organization, and the development of sustainable resources and means (solar and wind energy, heating and cooling, natural ventilation, rainwater harvesting, and other related sources) in the islands of the Greek archipelago; and b) the critical evaluation of the existing scientific knowledge and the institutionalized planning strategy applied on these islands, based on the principles of sustainability, and their impact on the architecture of the built environment.

The identity of traditional architecture is approached under the scope of identifying the sustainability elements that constitute this identity, as examples for the present and future design of a sustainable residential environment based on the needs and demands of the inhabitants of the islands of the Greek archipelago.

It is also assessed on critical parameters of European and Greek policies, which seek the sustainable development of cultural heritage in a traditionally structured environment. In the view of these policies intended outcome, the principles of compensatory design and the contribution of architectural restorations, as well as their technical typology of sustainability, constitute critical terms for the cultural upgrading of the settlements of the islands of the Greek archipelago.

Following the abovementioned admissions, the research approach is based on key social, economic, environmental, and cultural concepts (such as empirical sustainability know-how, cultural value, and compensatory architectural regeneration and production), related to the principles and resources of sustainability developed by traditional architecture on the islands of the Greek archipelago, in order to highlight and extract important propositions for contemporary sustainability-based architectural design.

In the light of this approach, the use of modern technology and systems of autonomous energy, as well as the sustainability of material resources, is proposed to be adapted to a systematic historical and scientific elaboration of the known sustainable achievements of the culture of the Greek archipelago. This perspective needs to emphasize the preservation and continuity of the architectural typology of buildings and constructions, so that any innovative architectural appliances will respect the experience and spirit of the people of the area, contributing to the preservation of the historical heritage and the sustainable values of the Greek archipelago's culture.

THE NATURAL ENVIRONMENT IN THE GREEK ARCHIPELAGO AND THE ISLANDS' BUILD TRADITIONAL SUSTAINABILITY

The natural environment of the Greek archipelago is characterized by fluctuations and changes, which over time affect the scope of sustainability on each island with only a few exceptions (of the largest islands, such as Crete and Naxos). The climate of the region is distinguished by summer dryness, with intense solar radiation and strong winds, while during the winter season it shows a significant variation in the amount of rainfall. The average monthly sunshine ranges from 53.5 hours in the month of December to 405 hours in the month of July, and the average temperature in winter is 9^0-14^0 and in summer 27^0-31^0 degrees Celsius.

Due to the sea surrounding the islands, there is high humidity during the transitional months (October, November, April and May), with winds that increase the levels of discomfort. The frequency of the winds is particularly strong during the summer months, blowing from sunrise to sunset, with maximum force during the midday hours. On an annual basis, windless days are minimal, and northerly winds with speeds of 4 to 6, on the Beaufort scale approach 60% of the wind, while southerly winds cover only 20% of the total percentage of winds with speeds of 3-4 Beaufort. In particular, in many

coastal areas' steep places, the intensity approaches 9-10 Beaufort, because stormy downhill winds are created (Deli, 2022).

In most islands, the natural environment is characterized by poor vegetation, fluctuating rainfall, and a wide variety of mineral resources. Traditionally, the first sources of water supply in the settlements were reservoirs, wells, cisterns, and taps where there was running water. Due to the topography of the islands, the inhabitants, in order to prevent rainwater from rapidly flowing into the sea, built special stone embankments (terraces) in order for it to be absorbed into the ground, given that the water table is affected by the infiltration of brackish seawater (Gikas & Tsobanoglous, 2009).

The terrestrial constitution of the islands contains mainly sedimentary and igneous rocks, while the rocky morphology of the lands, due to the minimal existence of plains and plateaus, determined and still determines residential location and development. Despite the dry thermal nature of the ecosystem of the islands, the vegetation favoured by the local climate concerns endemic cases, such as the vine, the olive, the fig, and the pine. Due to the low height of the rocky areas on the islands, many beneficial native shrubs thrive, such as holly, dogwood, myrtle, laurel, and many others. On many coasts of the
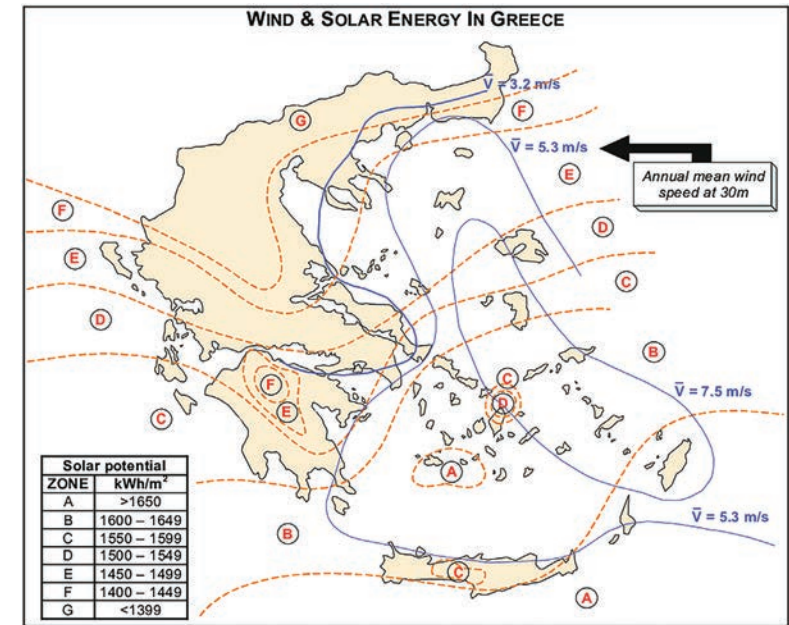

Figure 1. Wind and solar potential in Aegean Sea. Source: Kaldellis J.

islands, due to the prevailing conditions of salinity, temperature and humidity, there are rare endemic species, which include small shrubs and grasses such as sagebrush (Salicornia europaea), amaranth (Suaeda maritima), saltwort (Salsola soda), Limonium, and wild grass (Cynodon dactylon) (Delipetrou & Georgiou, 2010).

The fish fauna of the marine environment contains thermophilic, tropical, and subtropical species, most of which have been the main food of the islanders. In the exploitation of marine resources, in addition to fishing, the pumping and desalination of seawater in salt pans and salt flats was also developed, for the production of salt, an essential material for the nutrition of the inhabitants and the preservation of their food (Lampropoulos & Kourteli, 1995).

The man-made natural environment of the islands of the Greek archipelago is mainly the result of agricultural production as it developed in the centuries-long interaction of farming and animal husbandry activities in relation to the existing conditions of the flora and fauna (endemic and imported from the mainland). An ecosystem has been formed in the contours of the agricultural lands, due to the nature of traditional agricultural management practices, which sustainably utilized the limited natural resources of the soil, plant, and water environment. Over the years, the local cultivations formed a peculiar island landscape, where, in addition to the endemic plants, organized tree crops of fruit, vegetable, and forest species were added. Besides, secondarily, pastures were developed on uncultivated lands, which, in addition to the production of meat and dairy products, contributed to the fertilization of cultivations and their enrichment with decomposed residues of plant and animal origin (Sfenthourakis & Triantis, 2017).

A VERNACULAR ARCHITECTURE OF UNIQUE ISLAND SUSTAINABILITY

The currently preserved, traditional settlements on the islands of the Greek archipelago are residential complexes with a special spatial planning and morphology that developed from the 16th to the beginning of the 20th century. In the majority of them, their location arose from the need for security from all kinds of dangers (pirates or conquerors), and the exploitation of natural resources for the benefit of social sustainability. Specifically, for security reasons, some settlements were formed on mountainous rocky plateaus or on the tops of steep mountains, while in the remaining cases they were built near

or next to the sea in areas that ensured good climatic conditions and access to primary production (fishing, agriculture, animal husbandry, beekeeping, forestry, hunting, mining of minerals and ores, etc.). For the location of the settlements, the orientation and the solstice of each area were mainly taken into account, in order to avoid the disadvantages of the natural environment, such as strong northern winds and humidity, in favour of the advantages of maximum sunshine and sea breeze (Papageorgiou & Pozoukidou, 2014).

Most settlements are organized around an open space, that is, a plateau that constitutes the gathering place, where there is almost always a church, a market, and a fountain, while around the plateau the residents' buildings are structured in a row and in relation to the terrain. In the larger populated settlements, there are more open spaces with a corresponding configuration of the neighbourhoods. The residential complex branches out through a complex and dense network of public roads, which in addition to protection from the strong winds, favours maximum sun exposure and the most unobstructed view possible.

Figure 2. Pyrgos' central square (left) and its public laundry room on the island of Tinos (right). Author's archive.

The central square in each settlement is paved as a dance floor ('chorostasi'), in which there is usually a marble fountain and plane trees that offer cool shade during sunny days (e.g., Pyrgos Tinos, Mesta Chios). In this area, in addition to being a point of social intercourse and recreation, customary and economic activities took place, which contributed to the cultural well-being of the inhabitants of the settlement.

The open spaces that can be found apart from the central square are usually various platforms, which in some coastal settlements were used in the past as threshing floors, or water mills (e.g. Alefkandra of Mykonos), two very important works of collective interest. The formation of these platforms was
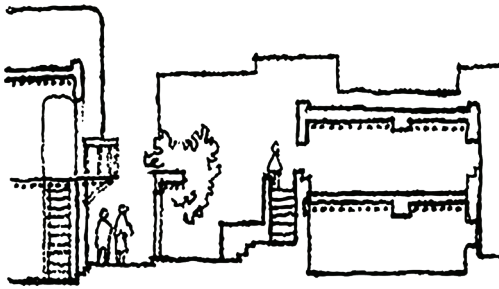
Figure 3. A typological section of vernacular dwellings in Cyclades. Source: Doumanis & Oliver, 'Shelter in Greece.'

done with slabs in a circular formation, the size of which depended on the practice of threshing (on foot or with horses), or with the sprinkling technique of the biological washing of household textiles (wool carpets, kilims, etc) (Karpathios, 2023).

The building composition of the settlements consists of a continuous and staggered arrangement, which follows the relief of the ground. The layout is organized either as a linear sequence along a central street, or as a perimeter around the central square. Due to the empirical construction know-how, the entire building was adapted to the solution of the problems arising from the climatic conditions, utilizing the positive environmental factors with a view to the construction of buildings with the maximum possible economy of materials and space. In many cases the buildings were erected in recesses or sheltered sides of hills, in a staggered arrangement or even in overlap or connection with underlying buildings, while in rare cases with a hollow form, which was favoured by the composition of the soil (Santorini and Anafi) (Doumanis & Oliver, 1974).

The majority of buildings consist of the type of the so-called vernacular residence. Their floor plan is slightly irregular due to the shape of the plot and the layout with simple geometry, connected or placed in line with the adjacent houses. These non-agricultural dwellings usually have limited free space, however, they possess the peculiarity of being able to extend in height to an adjacent relative's residence, as lofts, forming a multi-level single complex of interior spaces and accesses that serve the collective daily living and domestic household occupations. The construction of the base of the houses was done with three to four rows of mudstones with a total width of up to one meter, while on the floors the thickness of the masonry was less than 80 centimetres, consisting of one or two rows of mudstones (Dimitropoulos, 2001, & Papaioannou, Dimitsantou – Kremezi, Fine, 2001).

Particularly characteristic of the masonry connection is the construction of architectural arches (vaults) from slates, stones, or marble with the main objective of supporting the roof or separating rooms, a technique that also offered the creation of an opening in the drum (tympanum) for ventilation. The opening of this kind was mostly rectangular, or even triangular or

curved. The frames were made with pilasters and transoms which were either monolithic or boarded.

The access openings (casings and shutters) were made of panelling timber or with nailed joints, the frame of which was nailed to the opening of the masonry. The exterior sections were mainly single-leaf windows and double-leaf doors. The doors consisted of two leaves in the nailed frames for better sun exposure, ventilation, and lighting. In the residences, the doors were usually single-leaf but always cut into two sections. The frames consisted of three vertical boards of 2 cm. thick, which were nailed internally to two horizontal ones. The internal doors were also wooden panels, consisting of two vertical sections and three horizontal ones with decorative reliefs (Markantonatou, 2016, Daniil, 2018).

The construction of the roof was made of rows of parallel beams (traves) that were placed on the opposite walls, the gaps of which were covered with ropes, boards, or reeds. In order to seal the roof, branches were first placed, and then clay soils, koras ani, or theraic earth were placed on top. The clay soil was placed in two layers, as a sandy waterproof sediment. The entire wooden construction constituted a horizontal covering of the buildings regardless of the typology of the stone vaulting of the roof (arch, arch roof, naves, and transept). The beams were limited to 2.5 meters, because on the islands of the Greek archipelago the most suitable were the small cypresses, whose trunk offered a light and durable beam due to its cross-section. The creation of buildings with a larger capacity was dealt with by the addition of corresponding spaces above the existing ones, or by adding spaces next to the existing ones, or by other techniques such as the creation of an 'intermediate arch' or a 'post mezzanine', with a corresponding covering of watertight roofs (Papaioannou, 2003).
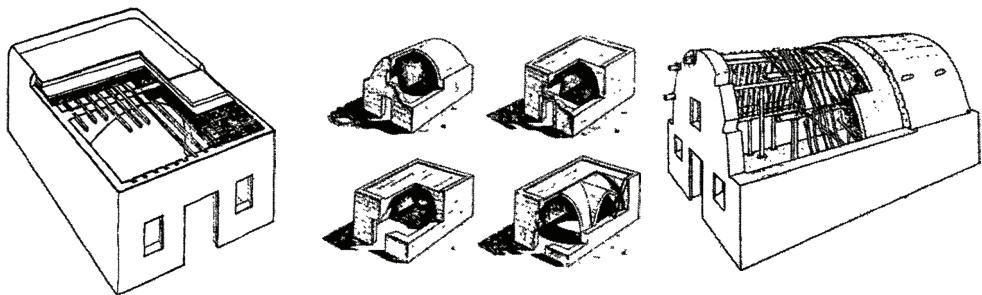

Figure 4. Traditional typology of watertight roofs on Aegean islands. Source: Helleniki Paradosiaki Architektoniki, vol II.

For the function of the roof as a rainwater collector, a perimeter parapet with a small slope was placed inside to facilitate the entrapment and runoff to the gutter leading to an underground cistern. The cistern was built at a depth of up to 5m, and was either inside or, more commonly, in contact with the residence or in its yard (Markantonatou, 2016). However, since not all houses had cisterns, there were private wells and public fountains, and wells with drinking water (e.g., the plateau of the three wells in Chora of Mykonos). For the watering of plants, special buckets were kept in the courtyards or under the sun lounge, while for the watering of the animals, stone troughs (circular open tanks) with a large well-windlass (maganopigado) were used for pumping water from underground.

Figure 5. Ventilation opening, morphology and chimney types. Source: author's archive.

For heating during the cold days in the dwellings, structural openings were made that allowed winter sunlight (large windows to the south, SE and SW, or skylights above the entrance doors). Also, in several cases, closed balconies (sunbeds) were built on the south facade, which functioned as a warming chamber in the living area of the residence during the winter months. Heating during the morning and evening hours was done through built-in stoves, which were mainly built in the kitchen (as an oven) or in the living room. The morphology of the hearths generally followed the configuration of a semi-domed recess, inside of which the combustion took place, with an opening in a cylindrical or rectangular chimney that formed a single structure with the lateral masonry. The tops of the chimneys were formed either from clay in a pithos-like form (as a holed pot) or were a continuation of their stone construction, with a slate roof that allowed the smoke to escape (Filippides, 1982).

The natural ventilation of the buildings' interior, and especially of the residences was based on the location of the openings determined by the direction of the winds in the area, which were decisive factors for the removal

of both thermal loads and humidity. Due to the existing weather conditions, ventilation was sought through small openings located high on the north side of the building, which also functioned as skylights. The northern inflow of air, in combination with these openings, functioned as an extractor fan, while the opposite air flow contributed to the heating and dehumidification of the interior rooms.
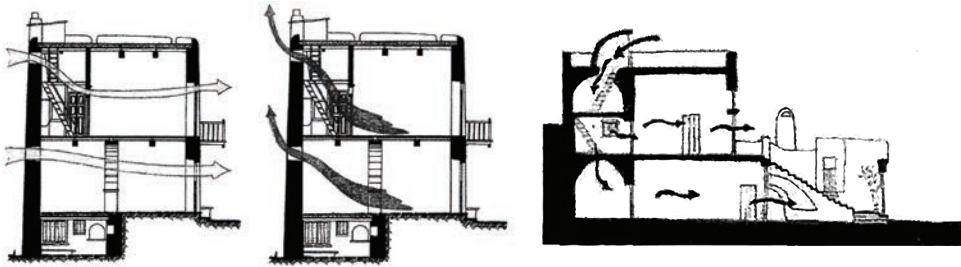
Figure 6. Aegean vernacular buildings' physical ventilation flows (source: Markantonatou NTUA).

Cooling inside the buildings was achieved by the thermal mass of the stone floor, which, due to a lower temperature than the overlying air, causes cooling. Condensation of dew took place in the underground spaces during the summer months, due to their inclusion in the subsoil. By shading the external spaces, it was possible to prevent the penetration of solar radiation and heat into the above basement spaces, in combination with the natural humidity given by the plants of the courtyard or the balcony during the sea breeze. The existence of many arbours (grapevine beds) with rich foliage in the yards resulted in the shading of the walls and the coolness of the space in the summer months, creating a satisfactory microclimate, while in the winter months it allowed the sun's rays to enter the house, dispersing the thermal masses on the surrounding walls, as they are composed by deciduous plants (Nikoloudis, 2013; Konstantinidou, 2008).

With windmills, a construction tradition dating back to the 11th century, wind energy was harnessed to grind grain or produce olive oil. They were built on the islands of the Greek archipelago, due to the scarcity of water resources from streams, in areas where strong winds prevailed. These areas were mainly hills, slopes, or coastal places near the settlements which were called mill sites because they usually contained more than one windmill. The architectural typology of windmills is based on the way the impeller rotates, the shape and size of the building (Vaos & Nomikos,1993.) In most areas, they

had a circular plan (xetrocharis) and their roof, along with the mechanism, rotated to take advantage of the strongest wind at any given time. In the rest of the areas where the prevailing wind had a constant direction, the roof did not rotate, and they did not necessarily have a circular plan (pitched, single-track or non-retractable). In addition to windmills on some islands with developed beekeeping (e.g., Thasos, Rhodes, etc.), there were also wax mills, which were a kind of large manual press for the production of pure wax from the harvested combs of the beekeepers, which they used as a source of artificial lighting (Mavrofridis, 2021, pp. 6-8).

For the needs of bio-fertilizer and free food, unique buildings were built for pigeons, the so-called 'peristereones' (pigeon houses). They were usually built at a relatively satisfactory distance from settlements in locations near streams, sheltered from winds, and with enough openings so that the birds could find shelter and also be able to fly freely. Pigeon houses were peculiar buildings of normal volume with self-sufficiency within the space they were erected. Their main face did not face north, and if their location did not ensure protection from the winds, this was achieved by extending one or two side walls beyond the corners of the building to form a wind barrier. In cases where the ground was sloping, the building followed the slope, so that one side of the building was higher. The frames were wooden, solid, without cracks or breaks, and well adapted to the openings, so that birds and animals did not enter dangerously (NTUA, 2011).
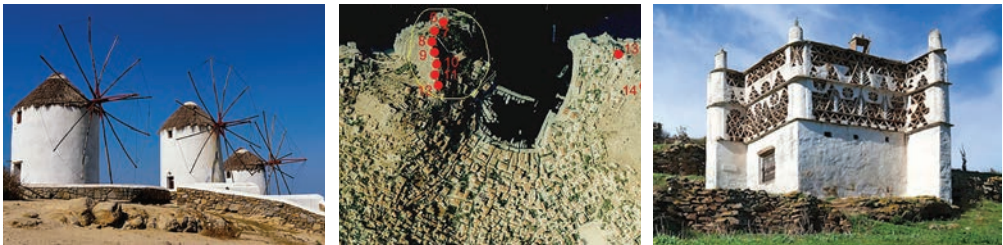
Figure 7. Myconos' windmills (Left). Source: author's archive. Mills site on Hydra Island (Middle). Source: ktimatologio. Pigeons' houses (Right). Source: Kontogiorgis.

The usual pigeon houses were built of slate in two stories. The lower floor was an auxiliary space (agricultural warehouse), while the upper floor was intended for the accommodation of birds, which did not only concern pigeons, but also sparrows or swallows. The peculiarity of the facades, which did not face north, was the construction of perforated openings (bird's nests) of slates arranged in triangular, circular, rhomboidal, radial, and flower-

shaped shapes, with a variety of combinations that compose a lacy decorative art. The decorations, entrances, and windows were made at a height of more than two meters from the ground, while the walls were plastered on the outside with a special gloss (Kontogiorgis, 2011).

The coastal residential landscape also included small shipyards (Tarsanades and Karnaja), where small and large sized vessels for fishing and sea transport were built and repaired. Platforms next to the moorings of the ports were chosen as suitable places, in order to carry out the work directly in terms of raising and lowering the boats and ships.

Figure 8. Shipyard in Samos (left). Source: Mechane tou chronou. Threshing floor in Crete (right). Source Cretan Magazine.

In addition, the hinterland near or next to the settlements included buildings and constructions that served agricultural production. Such constructions were mainly the threshing floor, the warehouse, the stable (mitato), and the terraces. The threshing floor was built as a flat round space paved with stone slabs, surrounded by rectangular stone slabs about fifty centimetres high, or with stones built without clay (xerolithia). The diameter of the threshing floor was suitable for the animals (oxen or horses) that trod the grains (wheat, barley, etc.) turning around its axis, in order to separate them from the straw. Threshing floors were usually built in open places, hills, or ravines, in locations where there was a strong wind, to facilitate the threshing of the grains (Cretan Magazine, 19.04.2021).

The storeroom was a simple stone structure where the inhabitants stored the local harvests (wheat, barley, beans, chickpeas, lentils) in bundles, for threshing or consumption. It had almost the same form as the local pen (mitato), which was usually a small square-plan building made of dry stone, of up to 2 meters high, covered with tree trunks, reeds, and clay for waterproofing. The main uses of the pen (mitato) were for the rest and protection from adverse weather conditions of the shepherds and farmers,

and the storage inside of the fertilizers for the plantations, or even the production of cheese from the milking of sheep and goats. The pen's interior included a stone hearth, alcoves or built-in wall boxes for tools and food, and a cheese cellar (koumos) for ripening the cheeses. In its outer space there was a cistern for the animals and a stone-built table with stone seats for the hours of rest or the supervision of grazing (www.dimosmylopotamou.gr/sightseeing/mylopotamos/mitato.html).

Figure 9. Shepherds' stone huts and dry stone walling terraces on Kythnos island. Source: www.greekgastronomyguide.gr/oi-xerolithies-tis-kythnou

Special terraces (pezoules) were built on the slopes of the hills around the settlements, which were filled with soil for the purpose of growing cereals and vegetables. The support of the terraces on the ground was done with an embankment of dry stones, i.e., a wall made of stones without the use of mud. The type of terraces varied according to the topography, the slope, and the geological substrate of the slopes. According to the practices in force at the time, anyone who wanted to cultivate hilly and mountainous areas, for which there were no proofs of ownership, could do so freely by acquiring ownership rights over them (Dimitropoulos, 2001). The entire arrangement of the terraces required the vertical section of the slopes in equal-height curves, a technique that produced a peculiar contouring that characterizes many areas of the islands of the Greek archipelago even today, forming together with the above-mentioned traditional constructions the structural and architectural heritage of the Greek archipelago.

The inhabitants of the islands created all these constructions with an artistic sensibility that arose from the use and exploitation of the same resources available to them in the natural environment, guided by their prudent economy, in order to sustain needs in the unfavourable and adverse circumstances of geographical isolation.

THE GREEK ARCHIPELAGO AS A SITE OF PRESERVABLE ARCHAEOLOGICAL IMPORTANCE, AND THE CONTRIBUTION OF ITS ISLANDS' ARCHITECTURAL TRADITION TO SUSTAINABILITY

The architectural peculiarity of the traditional settlements of the Greek archipelago, in addition to the historical necessity of sustainability from which it emerged, also constitutes a protected archaeological property due to its characteristics. This finding arose during the 1960s when the islands of the Greek archipelago became places for tourist vacations, with the result that the need to protect valuable residential areas in the region was legally established.

In particular, the first legislation was made in accordance with article 79, par. 6 of the General Building Regulation (ΓΟΚ) of 1973, where it was determined that with the issue of Presidential Decrees 'settlements or parts thereof may be designated as preserved because of their special, historical, folklore, urban planning, aesthetic, or their architectural character'. Also based on article 80, par.2, it was defined that 'in settlements or areas that deserve special attention due to their natural or architectural environment' there was the possibility of imposing special building conditions and restrictions, under the supervision and approval of the local Architectural Control Exercise Committees (the later ΕΠΑΕ - Town Planning and Architectural Control Committees).

The second legislation arose from article 4, par. 1 of the Constitution of 1975, which distinguishes the natural from the cultural environment, setting the principles of the declaration and protection for "monuments, traditional areas and elements". Since then, subsequent revisions of the Constitution (2001 and 2008) further strengthened the protection of the cultural environment, introducing and enshrining in the constitution the principle of "sustainability", according to which the State has the obligation to preserve - among others, the cultural environment. The classification of settlements as 'preservable' was later changed to 'traditional' by Law 622/1977, which amended articles 79 and 80 of the Government Gazette of 1973, also establishing the issuance of Presidential Decrees for the classification of settlements as 'traditional' (Papageorgiou & Pozoukidou, 2014).

The first 421 traditional settlements of the country were declared en masse with the aforementioned Presidential Decrees, while some general rules and restrictions were also defined, until more specific terms and rules, adapted to the architectural characteristics and traditional constructions of each

settlement, were determined through specialized architectural and urban planning studies.

Although numerous declarations of traditional settlements have followed since then, the Presidential Decree (P.D.) of 1978 is, from a legislative point of view, a point of reference and a milestone, because the urban planning conditions and the morphological rules it set were considered by many as the minimum level of rigor, which subsequent acts of characterization had to observe. This is also confirmed by the relevant jurisprudence, as in many cases of characterization -after 1978 -, the Council of State requests at least the compliance with the building conditions and restrictions set by the P.D. of 1978 (Council of State, D200/2008). The jurisprudence of the Council of State gives a great conceptual breadth to the terms "cultural environment", "monuments", and "traditional areas and settlements" contained in article 24 paragraph 6 of the Constitution. For example, it has been decided that the protected "cultural heritage" includes "man-made monuments and elements that come from human activity and skill and make up the historical, artistic and technological heritage. These include the buildings and constructions in general, the settlements or their parts, which are declared preserved or given the status of traditional". (The Granada Convention for the Protection of Cultural Heritage and the Constitution, 1985).

Also, it is worth noting that although the protection of traditional settlements is mainly governed by the current urban planning legislation, the architectural and urban planning elements deemed to be valuable can also be protected through the provisions of archaeological legislation, which concern the category of "historic places". The archaeological law in force in the Greek territories enables the protection of homogeneous sites that display remarkable architectural, technical, folklore, ethnological, social, industrial, or in general historical, artistic, and scientific elements. (Law 4858/2021, article 2)

"Sustainable management" for cultural heritage arose from the need for the conservation of monuments, as a means of promoting human civilization based on the preservation of cultural heritage. As a concept, it was introduced in 2005 in the Operational Guidelines for the Implementation of the World Heritage Convention, in which the management of cultural heritage is directly related to the economic viability of monuments. According to this convention, the objective of sustainable cultural heritage vis-à-vis cultural

heritage monuments requires the activation of the public sector in order to highlight the direct and indirect positive effects of conservation.

The concept of cultural heritage, tangible and intangible, includes not only important monuments of historical value but also agricultural constructions, human practices and traditions. Thus, the case for the protection and sustainability of traditional settlements is a multifactorial issue consisting of technical, historical and social aspects. The contribution of the local communities that live in such historical environments is decisive because the purpose of protecting traditional settlements does not only include the preservation of their buildings, but also the well-being of their inhabitants (Vecco, 2010).

The importance of highlighting cultural heritage from the point of view of the sustainable development of island settlements was particularly summarized in the report of the ESPON project (EPSON: European Observation Network for Territorial Development and Cohesion in 2013). It states that the management of cultural and natural resources is a key issue for the sustainable economic development of the islands and also considers that the abundance of natural and cultural assets combined with a strong cultural identity are the most important criteria for the social sustainability of island settlements.

At the international level, a specific policy was adopted by UNESCO in 2015 to integrate the perspective of sustainable development into the processes of the World Heritage (WH) Convention, and to increase the contribution of heritage to wider social, environmental, and economic challenges. The adoption of this policy was a milestone in promoting more holistic approaches linking heritage to sustainability in the light of an innovative framework for assessing and monitoring the contribution of culture to Sustainable Development Goals and policy areas (UNESCO, 2015).

However, the implementation of this internationalized policy has faced problems, due to differences and gaps in financial resources. While the 2015 goals highlight the importance of an integrated vision of heritage for sustainable development, the majority of existing publications in the field discuss the issue from narrow perspectives, such as the use of tourism for economic development, or the management of natural resources and its implications for local communities, without linking these issues. Therefore, there is still a critical need to reflect on the contribution of cultural heritage

and architecture relating in particular to sustainable development, and under what conditions it can be effectively utilized to achieve long-term sustainable development in all cases (Giliberto & Labadi, 2022).

All the aforementioned legal arrangements concern the current policies that can contribute to the preservation of the cultural heritage of the islands of the Greek archipelago and their sustainable development, both directly and indirectly. Directly, through methods and applications of re-use and compensation for the damages suffered by the traditional settlements, and indirectly, through the highlighting of the architectural and cultural values, which form the basis of the symbiotic process of the inhabitants with their natural environment, created with the aim of sustainability.

By valuing the contribution of the island's traditional architecture, one can see the full utilization by the inhabitants of the elements of the natural environment with a view to solving their practical needs, despite the significant lack of resources and technical means. The use of the landscape, orientation, the local building materials, the organization of space based on climatic conditions, the conscious formation of a suitable microclimate inside and outside the residence, the use of specific construction techniques - which can have practical application in our time -, the function of the climatic factor as a source of inspiration and ingenuity in planning, in combination with the absolute respect for the natural and built environment, were the tools that were utilized for the benefit of an efficient and economical residential microclimate. All this empirical know-how still constitutes a model for the design and development of residential complexes on the islands of the Greek archipelago.

The main elements of the utilization of the natural environment by traditional architecture relate to empirical specifications of bioclimatic design, based on which sustainable planning that is being carried out, and will be carried out, on the islands of the Greek archipelago in the future can also benefit. The building specifications are mainly related to the orientation, the arrangement of the spaces, the openings, and the sustainable construction technique in general. Traditionally, buildings were built with a SE orientation as a rule of thumb, in order to harness solar heat in the winter. The layout of the spaces and individual building volumes was organized based on orientation by placing the auxiliary spaces on the north side, and the main spaces on the south, with the creation of shaded external surfaces providing coolness

in the summer. Natural lighting was ensured on the facades with vertical windows and skylights, as well as special roof openings (opaia). Moreover, the diffusion of lighting in the interior spaces was helped by the reflectivity created by the light-coloured and white coatings on the walls.

All the openings possessed singular compositions, whose general geometric organization differed case by case, although they had approximately the same shape, giving a particularity to each building form, as a practice of recognizability. The shape and stone-carved composition of the skylights consisted of various types: the semi-circular with horizontal bands of openings, the semi-circular with a perforated central pattern (naturalistic or geometric), the rectangular, the arched and the circular, which usually bore a coat of arms of a secular or religious character (sun wheel, star, double-headed eagle, six-headed eagle). Correspondingly, the shape and composition of the door panels and window shutters followed the outline of the opening, which either had a linear or vaulted canopy. Their shape was divided in the windows into two vertical halves, while in the external doors into two or three more horizontal sections for safety and regulation of the wind inflow (Oia, Portes, NTUA, 2016).

The construction technique served sustainability through the use of local building materials, mainly dry stones, slates, lime mortar, clay, ash (aspa, theriac soil), bricks, reeds, straw, seaweed, and limited amounts of wood, glass, and iron. The masonry was made of a large thickness in order to ensure a high heat capacity and thermal inertia, ensuring thermal insulation. The walls as the main component of the building shell, which separates the artificial interior from the natural external environment, together with the waterproofed floor and roof, met three basic requirements for the entire building: to function as a selective solar collector, as a thermal loss barrier and as a thermal storage (Axarli & Papadopoulos, 1982).

The singular characteristic of the entire form of the buildings is the monolithic appearance that resulted from the general composition of

Figure 10. Door with three opening parts & overdoor opening (above). Source: author's archive. Astypalaia Settlement's monolithic composition (below). Source: mydolcecasa.com.

the vertical and horizontal surfaces to which the plaster gave a single and unbroken sculptural appearance. Despite the fact that the construction methods were adobe structures of different layouts, with large or small joints, their final appearance due to the use of lime or clay mortar acquired a surface texture similar to that of the cast form, even in individual sections or the ends of the buildings (chimneys, cisterns, cornices). This peculiarity was praised by Le Corbusier during his tour of the Greek archipelago in the 1930s, considering it as equal to the modern style he advocated, referring characteristically to the goddess of settlements that 'Architecture is the skilful, correct, and wonderful game of volumes in the light' (Hyperifanou, 2014).

THE APPLIED SUSTAINABLE ARCHITECTURE AND ITS BIOCLIMATIC INNOVATIONS IN THE ISLANDS OF THE GREEK ARCHIPELAGO

The issue of sustainability in the islands of the Greek archipelago emerged a few decades ago, as a result of scientific intervention in the context of studies related to traditional architecture with the aim of reusing and restoring existing buildings. In particular this happened in 1975, the year the Council of Europe designated it as the 'Year of Architectural Heritage', promoting the protection of architectural monuments with the slogan 'a future for our past'. Since then, a program for the revival and development of traditional settlements was organized under the auspices of the EOT (National Tourism Organization), with the maintenance and restoration of buildings and housing complexes in order to house tourist facilities (guest houses, museums, restaurants) or other functions (community offices, workshops, shops, etc.).

In 1988, with the Presidential Decree (P.D.) of 17.06.1988 (Governmental Gazette, 504D), more settlements were added to the list of traditional ones, establishing regulations and special conditions for the construction of new buildings on the islands of the Greek archipelago. This P.D. in conjunction with the subsequent P.D. 11.09.1989/G.G.345D, regulated the coverage and building factor of the plots, imposing the division of the volumes of the buildings into their complete separation, defining the maximum height of the buildings, and the maximum number of floors. It also defined morphological commitments, which, for example, concerned, among other things, the proportions and dimensions of the openings, the construction of water tanks, sheds, and outdoor roofs made by a wooden frame of rectangular cross-section, the installation of air conditioners and solar water heaters in places of the building that are not visible from the common areas, etc.

By the breaking up of building volumes, the conditions were created for the construction of holiday homes, and small and medium-sized hotel facilities, which significantly changed the image of the residential landscape on the islands with architectural studies that tried to adapt to traditional principles of sustainability by applying modern sustainable construction innovations.

From the study of the individually applied sustainable architecture, a gradual departure from the traditional forms and patterns that established the image of the residential landscape on the islands of the Greek archipelago is established. For example, only the houses that were built on old foundations of demolished traditional ones were shaped based on the cube-shaped composition, so that they are not morphologically distinguishable from the neighbouring ones in the residential environment. One such case is a residence designed by D. Manikas in Chora on the island of Ios in 1969, which simulates the traditional ones with stone walls and small openings adapted to the orientation and the solstice. It is a residence of permanent residence with an internal division of spaces in winter and summer rooms, with openings and shades that regulate lighting and ventilation depending on weather conditions. In addition, it has traditional thermal insulation and waterproofing that utilizes the storage of rainwater in an underground cistern (Themes of space+arts, 2007).

On the other hand, architectural constructions made later, such as the 'House of the Winds' by Agni Kouvelas-Panagiotakos in Akrotiri on the island of Santorini in 2001, and the bioclimatic summer residence of Cometa Architects on the island of Kea (2014-16) are examples of solitude in the island space, with organization and form that constitute an undoing of the landscape, regardless of the application of sustainable specifications to their design. In particular, both cases serve holiday leisure, with the result that more importance is given to the external spaces instead of the internal ones. Because, due to their isolated location they are exposed to strong winds and heat, the interior spaces have been designed in such a way as to protect them from extreme natural phenomena on the one hand, and to take advantage of natural ventilation and lighting on the other.

Regarding their construction, modern thermal insulating materials, such as pumice bricks were used in combination with traditional stone structures and the use of concrete. For the waterproofing and insulation of the roof, the traditional technique was used, while in the case of Kea, a solar thermal
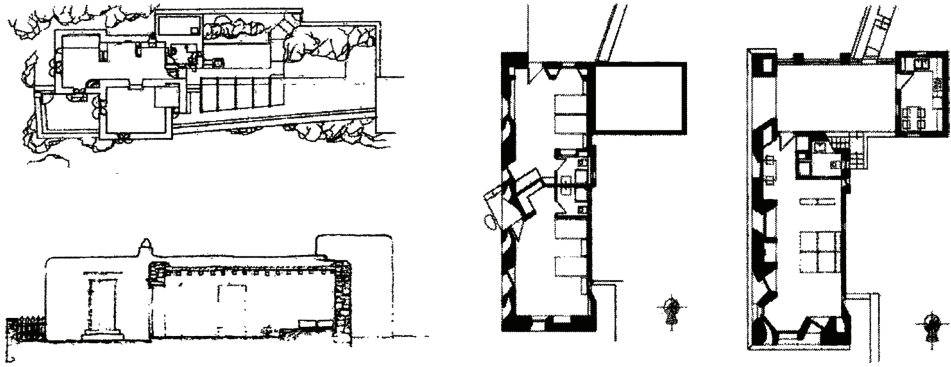
Figure 11. A house in a village on Ios. Architect: D. Manikas (top left). The 'House of winds' on Santorini. Architect: A. Kouvela-Panagiotakou) (top right). A Bioclimatic summer house on Kea. Architect: Cometa-Architects. Source: Skipetari & Stilpnopoulou (below).
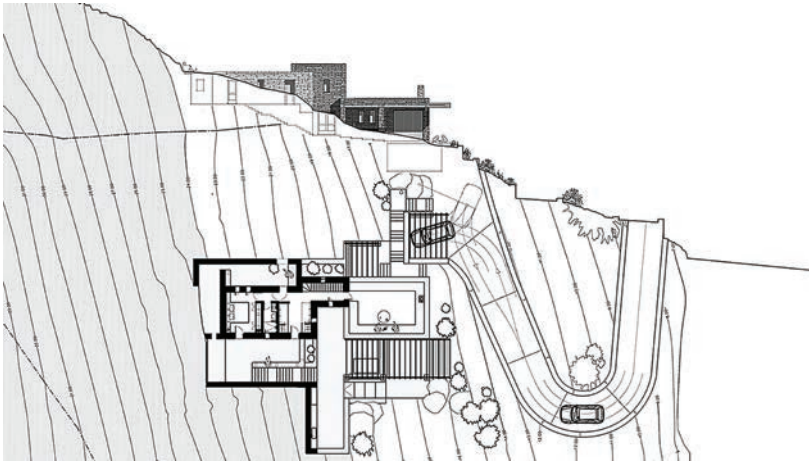
system was added to produce hot water for washing and heating, which is supplemented during cold and sunless days with the operation of an energy stove (Kouvela-Panagiotakou A., 2016).

Contemporary architectural applications of insular sustainability influence building design based on technologies that serve the construction or restoration of each building as a passive and energy system, combined with renewable energy sources. The configuration of buildings as passive systems always requires an unobstructed orientation towards the solstice, and the arrangement of skylights, which in combination with the heat capacity of the internal structural elements (floor, walls, and roof of thermal storage) ensure the necessary thermal mass during the cold season of the year.

In order to avoid overheating during the hot season, natural cooling is required with appropriate placement of ventilation ducts on the shady and northern sides of the buildings, in combination with the thermal insulation of the external walls, and the placement of shades on the openings and walls that receive the most radiation. An important role is also played by the selection of suitable vegetation in the places that receive the most solar radiation. Deciduous trees are usually preferred, which provide the necessary shade in the summer while allowing solar radiation in the winter. For the adequacy and regulation according to the needs of natural lighting, the number and size of the openings are calculated based on the location of the activities in the building, in relation to the solstice, with a construction that does not allow intense radiation.

The modern technology of renewable energy sources provides the possibility to take advantage of natural energy sources to meet energy needs, contributing to the reduction of the energy requirement of energy from conventional sources. Renewable energy has the advantage of being inexhaustible, as the sources it exploits, such as the sun and water, constitute a recycling system, unlike conventional sources, which do not recycle (Biska & Stratigea, 2015).

As renewable energy sources are considered: solar energy, wind energy, wave energy and energy from biomass. Solar energy is the light, heat and radiation energy that comes from the sun. This format is considered the most inexhaustible, as it is always available and with zero operating costs. It is environmentally friendly since no pollutants are emitted from its conversion to electricity. Solar radiation is utilized by passive and active systems, which take advantage of solar energy and convert it into heat. It can also be converted into electricity through the technology of photovoltaic systems, which, although they have the advantage of having zero operating costs, have location and installation costs as disadvantages that significantly affect their utilization in the context of residential architecture.

Wind energy is the form of energy that has traditionally been used on the islands of the Greek archipelago. In modern wind turbine technology, the wind is converted into electrical energy in addition to mechanical energy. Conventional wind turbines are either of a horizontal axis (which rotate around an axis horizontal to the ground level), or of vertical axis (which rotate around an axis which is perpendicular to the ground level). Vertical axis turbines are considered as more efficient because they behave better in

wind direction changes and can work even with the effect of relatively weak winds. In contrast, horizontal axis wind turbines are always oriented in the direction of the prevailing winds. Nevertheless, they are the most widespread around the world.

Wind energy is still the most efficient source of energy for the islands of the Greek archipelago because it is abundant and free. The use of a wind turbine for 20 years relieves the need to supply conventional fuels (oil, wood, etc.) reducing carbon dioxide in the atmosphere. The most common form of construction of wind energy systems is the wind farm, which consists of an array of wind turbines, in numbers proportional to meet the needs of the islands in areas with high wind power.

Regarding the production of energy from sea waves, through the technology of converting wave energy into mechanical and electrical energy, this has not yet been developed in the Greek archipelago, despite the fact that it is an inexhaustible renewable source. Despite its potential, wave energy is still in its early stages of development compared to other renewable energy sources. High construction costs, technical challenges, and environmental difficulties are some of the obstacles that need to be overcome to make wave energy a usable and sustainable energy source. However, with continued research and development, these challenges are expected to be addressed in the future, to the benefit of sustainability.

Since biomass is a domestic source of energy, its utilization for energy contributes significantly to reducing the dependence on imported fuels and improving the trade balance, ensuring the energy supply of the islands of the Greek archipelago. Also, the energy utilization of the biomass on each island strengthens agricultural employment with the use of alternative crops and the retention of the population in their homes, thus contributing to the socio-economic development of the region.

CONCLUSIONS AND DISCUSSION

The principles of architectural design and the material forms of residential tradition on the islands of the Greek Archipelago have developed a specific coding character for the purposes of bioclimatic and ecological sustainability, developed according to the maritime economy and the remoteness of the islands, which can serve as a model for other similar island regions. The vernacular architecture that we cherish today as 'picturesque' is in fact

the product of a long struggle for survival in an adverse environment by generations that have managed to squeeze their means out of the available natural resources in a sustainable manner (Stasinopoulos, 2006).

Thus, the highlight of the singular character of the architectural tradition and the installations and mechanisms of autonomous energy, as well as the service of basic subsistence needs, requires a systematic, historical, and scientific treatment of the known sustainable achievements of the culture of the Greek archipelago. Emphasizing the lasting consistency and standardization of the sustainable morphology of traditional buildings and facilities, an application of improved innovative interventions, created by the experience and spirit of the people of the sea, can as a design model ensure on the one hand the archaeological value of residential complexes, and on the other hand their sustainability as ecosystems in the future.

The archaeological value of traditional settlements, which has been determined based on article 6 of Law 4067/2012, 'Protection of Architectural and Natural Heritage', states that in these areas, after urban planning or landscape studies, special conditions and building restrictions should be established and to determine special uses. In light of this institutional arrangement, architectural design can contribute to the cultural compensation of all systems and constructions that have traditionally contributed to the sustainability of settlements on the islands of the Greek archipelago. Cultural compensation, as a planning model, aims to restore and strengthen vernacular building methods, as well as solar and wind energy structures based on the so called 'spirit of place' ('genius loci'), utilizing domestic natural and economic resources with a view to achieving specific local sustainability goals, which significantly reduce the dependence on imported supplies of building materials and energy (Kouzelis, 2019). However, in order for this planning to be carried out, the current zoning legislation and the general building regulation, should first be revised based on practices that facilitate sustainability both at residential and environmental level.

In particular, the planned reduction in the surface area of common areas must be lifted, as well as the separation of buildings by promoting their free configuration from all sides, in order to follow their serial or organic urban layout, so as to ensure better shading, heating, and cooling throughout the year. The only exceptions may concern tourist hotel units on the coast outside settlements, the facilities of production and energy units, warehouses,

shipyards, and other buildings for productive and economic use in inland locations. Also, the implementation of the study of any kind of building must be done with the correct application in the construction and application of the building typology as passive systems, in combination with the ongoing maintenance of the systems installed in the buildings, so that they continue to function properly providing the maximum energy benefit.

Along with the existing residential functions, the abandoned communal ones must also be revived, as for example, the tree-planted pastures and the water mills have been, where energy and water are saved for cooling, and washing clothes and fabrics, a habit which also contributes significantly to social intercourse. As for wind and solar communal energy utilization structures outside settlements, these should be located in such a way as not to affect the traditionally shaped architectural landscape, in locations such as the invisible rocky hills and the small islets adjacent to the islands.

The set of required modern sustainable architectural typology constitutes a complete design guide that effectively combines the tradition of authentic building with the future development of energy renewables. A traditional building may not, in many cases, meet today's comfort standards, but it has given us direction on the required strategies to mitigate the use of non-renewable energy sources. Through the optimization of these strategies, it will be possible to satisfy both the desired standards of comfort and well-being, so that sustainability is liveable in any case.

Given the morphology of the islands of the Greek archipelago's singular architecture, the approach to sustainability, as a historical entity based on the conditions of the place and human needs, in combination with the available construction toolkit, constitutes a beneficial cognitive field that can resolve the future structure and function of its island settlements based on the renewable self-sufficiency of energy and material resources that will serve the cultural authenticity of the lives of their inhabitants, as *'a past for the future'*.

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EXPERIMENTING WITH SCENARIOS AS TOOLS FOR ANALYSING CONFLICTING IDEAS IN BUILDING CONSERVATION

A scenario exercise based on ideas of John Dewey

Leif Östman

ABSTRACT

We have been involved in an inventory of old buildings in a coastal area, where there are obvious conflicts between the preservation of wildlife, tourism, and cultural heritage. This situation has led to a favoured neglect, which might result in the destruction of cultural heritage. The aim of the inventory was to evaluate the value of these buildings as representations of the area's seafaring history and to propose regulations for the area's planning.

Almost all original functions have ceased to exist. There is no longer any staff needed for piloting or servicing the lighthouses on the islands, and there are very few fishermen left. The aim of this paper is to clarify developmental concepts by means of scenarios and the implications of potential development for this cultural heritage in the long run. The mode of study is based on the ideas of John Dewey and his "Pattern of Inquiry". The approach focuses on specifying cases through which one can distinguish relations and causes with an impact on the outcome.

I present and discuss three different scenarios based on specific interests regarding this coastal area: protecting nature and allowing the built heritage to deteriorate, turning the buildings into exclusive vacation homes through material investments, or renewing coastal fishing to provide resilience in case of a deteriorating food supply due to climate change. The paper exemplifies the qualities of the objects in relation to building conservation practices in Finland and a broader critical perspective on cultural heritage. However, the main outcome is a comparison of scenarios as a test of ideas to promote a better understanding of conflicting ideas and to test the idea of scenario-building as a method for supporting and managing a productive dialogue about these conflicts.

KEYWORDS
Scenario construction, seafaring buildings, pattern of inquiry, building conservation

INTRODUCTION

Architectural design and planning inherently involve projecting into the future within a specific context. Conversely, building conservation is rooted in history, focusing on the preservation of structures at their original sites, with an emphasis on maintaining their continued use. This field often encounters a clash of interests—commercial entities may push for change and demolition when market values decline, or buildings being abandoned and falling into disrepair. Such tensions are reflected in media narratives and legal disputes that escalate to the highest courts, highlighting the divergent visions stakeholders hold for the future of historical edifices (Nousiainen, 2024).

Regulatory frameworks established by government and local bodies provide guidelines for action, yet these actions are contingent upon resources that are frequently limited. A cursory examination of government funding in the Nordic countries reveals modest support for private entities engaged in the renovation of culturally significant buildings (Sveriges riksdag, 2022, p. 89; Norges regering, 2022, p. 12.30)—often just tens of thousands of euros, a fraction of the hundreds of thousands or even millions typically required for refurbishment projects. In Finland alone, the aggregate budget for all renovation projects reached approximately 12 billion euros in 2022 (Statistics Finland). It is clear that governmental support is insufficient for the comprehensive and meticulous conservation of all listed buildings. Given the prevalence of underutilized structures, a re-evaluation of our approach to building conservation is imperative.

In this study, the focus is on buildings situated on remote islands, forming part of a screening for a masterplan review. The master plan for this area, encompassing vast tracts of protected natural and geological formations, should incorporate strategies for the preservation of cultural heritage. This heritage is embodied in structures associated with defunct lighthouse services and an extensive array of fishermen's cottages, which now stand largely unused (Korsholms kommun, 2022).

This paper examines the divergent values and objectives inherent in the practices of engaging with the built environment, professional documentation, public discourse, and administrative regulation. Collectively, these practices establish a multifaceted forum that addresses the historical context, future preservation, and the inevitable disruptions of conservation. Recognizing that the past is immutable, our study focuses on our current relationship with

history and our aspirations for the future. The question to be answered is: What will the future of the archipelago look like, and what impact is to be expected from this, regarding local culture and heritage?

The purpose of this study is to present three prospective scenarios for these islands, providing a foresight into possible conditions in the next ten to twenty years. These scenarios are intended as tools for fostering dialogue and understanding potential challenges, conflicts, and the most appropriate solutions for the future. The approach merges a Deweyan philosophy for problem solving and outcome testing (Dewey, 1938, pp. 101-119) with a design-oriented research methodology in conservation that seeks viable solutions aligning with diverse criteria of utility, market value, and revitalization, while respecting cultural heritage.

Figure 1. Map of the area in the Gulf of Bothnia. Kvarken, the narrow strait between Sweden and Finland, is highlighted. Source: Map data from OpenStreetMap. Tiles style by Humanitarian OpenStreetMap.

This paper will not delve into the intricacies of the Finnish listed buildings system, nor will it define specific conservation criteria. It posits that preserving a material evidence of old fishermen's culture and seafaring services is essential for future generations to appreciate the historical significance and the once-central role of fishing in coastal communities. These isolated locations, often rendered inaccessible by sea conditions, hold a wealth of history. Although the lighthouse service buildings are designated as national monuments, the lighthouses themselves have been unmanned for decades. Out of four lighthouses in the region, three are recognized for their considerable historical importance. Additionally, the area's designation as a nature reserve, with a significant portion recognized as an UNESCO

World Heritage site due to geological land uplift, presents a dichotomy: the municipality views this as a tourism opportunity, while the Regional State Administration Agency advocates for minimal visitation to preserve the reserve's integrity (Turunen & Strandberg-Panelius, 2023, p. 53ff).

BACKGROUND

The foundational task of this study was to compile a comprehensive inventory of all extant structures within the designated area, adhering to municipal guidelines for planning inventories. The survey identified approximately 150 buildings, predominantly quaint cottages and a few dwellings historically occupied by lighthouse keepers. Many of the older edifices, dating back 100-150 years, are considered part of Finland's cultural heritage (Museiverket, 2009) (short RKY in Finnish), a status conferred in part due to the scarcity of preserved buildings. Traditionally constructed from timber, historical structures in Finland have faced various fates—some succumbed to fires, others were destroyed during the Great Wrath (1714-1721) or razed in the post-World War II modernization efforts (Nousiainen, 2024, pp. 38-43).

The Land Use and Building Act, Chapter 1, section 1 (Act, 1999), prescribes that:

> *When a land-use plan's impact as referred to in section 9 of the Land Use and Building Act (132/1999) is investigated, the purpose of the plan, earlier investigations and other factors affecting the need for investigation must be taken into account. Investigation must provide the data necessary for assessing the significant direct and indirect impact of the plan's implementation…*

In the Land Use and Building Decree, Chapter 1, section 1 (Decree, 1999): "Investigation must provide the data necessary for assessing the significant direct and indirect impact of the plan's implementation" and later it is specified as, among other aspects: "townscape, landscape, cultural heritage, and the built environment". It is noteworthy that the stewardship of building conservation primarily resides with municipal governments in Finland, rather than state authorities (Act, 1999, p. § 39). This decentralized approach to preservation aligns with democratic principles, fostering citizen engagement in local environmental matters, and resonates with Habermas' concept of communicative action (Habermas, 1996).

Currently, many of these buildings serve no functional purpose. Lighthouses require only intermittent servicing, and the once-thriving local

fishing industry no longer sustains livelihoods. Some fishermen's cottages have found new life as holiday retreats, yet their modest size (max. 35 m²) (Planläggningen, n.d. unpublished) and remote location (20 - 30 km off-shore) render them impractical for brief visits.

The structural integrity of these buildings remains relatively stable, but neglect will inevitably lead to their degradation. A quintessential example is the fisherman's cottage: a diminutive, traditional timber structure characterized by a gabled roof and petite windows, often constructed using repurposed materials. For instance, the timber framework might be reclaimed from an older edifice. Foundations are typically rudimentary, resting on stacked stones or a single stone at each corner.

Historically, these cottages served as seasonal hubs for seal-hunting expeditions on the ice (Forststyrelsen 2, n.d.) and, during late summer, as communal sites for herring fishing—a social highlight for many families who would salt and store their catch for winter sustenance. This necessitated the presence of 'salt houses' for initial storage purposes. Human activity in the archipelago traces back to the Stone Age, with the earliest written records dating to the 14th century (Björkholm, 2017). While the region once boasted numerous

Figure 2. Fisherman's cottage on Skötgrund. Photo: Author.

fishermen's cottages—today ranging from the oldest, about 150 years old, to those erected in the 1970s during a salmon fishing boom—only a few salt houses remain today (Östman & Rönn, 2023). Fishermen traditionally navigated in small, tar-coated wooden boats, utilizing a limited array of cotton nets that also required tarring and daily drying. The summertime air was likely perfumed with a blend of seaweed, tar, and remnants of salted herring.

In the absence of machinery, early inhabitants of Kvarken manually cleared pathways (known as 'båtlänning' in Swedish) from the rocky beaches to create rudimentary harbours. These paths, where boats were hauled ashore, remain visible today, bearing witness to the significant land uplift characteristic of the region — a phenomenon that contributes to Kvarken's World Heritage status, along with its moraines and numerous erratic boulders scattered both on land and within the fishing waters (Association of World Heritage Sites in Finland, 2025).

The valuation of cultural heritage can be viewed from two perspectives: one regards it as an essential, existential backdrop for culture, and the other as a repository of knowledge (Kirkeby, 1998). Harrison and Smith see heritage as part of a meaning-making process in society, primarily as a means to

Figure 3. Salt house. Photo: Author.

interpretations of present culture, with its background in history (Smith, 2006, p. 46ff; Harrison, 2013). This can be seen as related to the idea of an existential backdrop, which stands in contrast to the idea of conservation as a kind of archive. They both see interpretation of heritage as related to power, exemplified as governmental nation-building listings (Smith, 2006, p. 30; Harrison, 2013, p. 165). In contrast to this, Smith sees memory and remembering as emotions of the individual, in contrast to collective or administrative relations to heritage (Smith, 2006, p. 63ff). Central to both authors is a wish to disentangle heritage from its political and elitist past and allow broad public access to their heritage, and as a contribution to their understanding of the present.

Moreover, there is a discernible distinction in the approaches to engaging with heritage—whether as a set of practices we interact with or within. At least four distinct perspectives emerge:

- The built environment: Focused on usage, material conditions and economic value.

- Documentation: A professional practice grounded in knowledge of structures, history, and evaluation measures against professional standards.

- Popular discourses: Encompassing both local interpretations and media narratives.

- Administrative management: Governed by legal frameworks and formal decision-making processes.

Recent critical approaches towards conventional interpretations of heritage also question the distinction between culture and nature in conservation (Harrison, 2013, p. 207), and Harrison claims that listing as such tends to underline the abandonment by present culture (2013, p. 161).

Another architectural feature of the area is the lighthouse buildings. Historically, lighthouse keepers and their families resided on the islands, necessitating residential quarters, storage facilities, and the lighthouses themselves. Constructed from materials such as timber, brickwork, or iron, these structures are historically significant, though not ancient. Notably, one iron lighthouse shares its origins with the engineering office responsible for the Eiffel Tower (Uppslagsverket Finland, n.d.). While each lighthouse boasts a unique

Figure 4. Path for boat dragging. The annual land uplift of approximately 7 mm helps to date these historic sites. Photo: Author.

design, their collective value lies in their representation of past cultures, and as a distinct feature in the landscape.

Currently, none of these structures are formally protected as listed heritage sites. However, the lighthouse buildings are recognized as being of national importance (RKY) (Museiverket, 2009). Certain segments of the archipelago are designated as Nationally Valuable Landscape Areas (VAMA, objects 115 and 116) (Ministry of the Environment, 2021). Although RKY listing does not guarantee preservation, it requires consideration in planning processes as per legislative mandates (Act, 1999, Chapter 3).

Kvarken's landscape is a flat, stone-laden moraine between Sweden and Finland. The ongoing land uplift forces maritime plants to perpetually migrate seaward (Lantmäteriet, n.d.). Due to the flat terrain, ecological changes occur rapidly, quite noticeable within a single generation. The region's low water salinity, resulting from minimal Atlantic exchange and inflow from

large rivers into the Gulf of Bothnia, creates shallow waters conducive to fish spawning. These areas are particularly vital for herring and as a migratory route for salmon.

The listed lighthouses and fishermen's cottages fall within a nature preserve, classified mainly as Natura 2000 sites, but also including privately protected areas. Here, lagoons and primary shoreline forests are prioritized for conservation (Miljöministeriet, n.d.).

The listed lighthouses and fishermen's cottages fall within a nature preserve, classified mainly as Natura 2000 sites, but also including privately protected areas. Here, lagoons and primary shoreline forests are prioritized for conservation (Miljöministeriet, n.d.).

The goal of Natura 2000 is to safeguard these habitats as representative examples of archipelago ecosystems. New construction is restricted to outside the designated areas, with the government offering compensation

Figure 5. Lighthouse on Valsörarna from 1886. Designed by architect Henry Lepaute of Paris, with housing for the lighthouse keepers visible in the background. Photo: Author.

Figure 6. A shallow bay with a sill, indicative of the area's dynamic coastal ecology. Source: Miljöministeriet, n.d.

for building rights. The continued use of holiday homes is permitted (Parliament of Finland, n.d). A recent proposal under the Nature Conservation Act suggested expanding the preserve areas in 2021 and 2022 (Finland, 2023; Mattfolk, 2022), but this was met with opposition from local communities. This led to a subsequent survey investigation of the regional environmental administrations credibility (Turunen & Strandberg-Panelius, 2023). The current proposal seeks to confine the nature preserve to government-owned territories (Forststyrelsen, 2022).
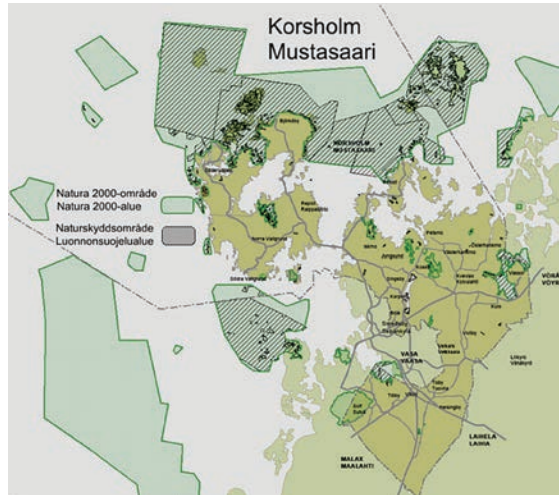
Figure 7. Map with Natura 2000 preserve (green colour) and additional nature preserve areas (raster). Source: Korsholm Municipality, n.d.

METHODS

The methodological approach of this paper is based on the ideas of the pragmatist philosopher John Dewey (1859-1952). The scenarios are seen as experiments, as an inquiry into an undetermined situation: What will happen with the old buildings in a situation with many conflicting interests? Scenarios are not to be seen as scientific endeavours, according to Schwartz, but rather as an art (1991). Ramirez et al., on the other hand, sees it as an established research methodology scholars now use to produce "interesting research", manifesting epistemological issues that the broader futures field has grappled with (Ramirez, et al., 2015).

Dewey stands for a kind of instrumentalism. His instrumentalism is a philosophical approach that emphasizes the practical application of ideas and concepts. Rooted in American philosophical pragmatism, it posits that the value of an idea lies in its usefulness and practical application rather than its abstract truth (Rorty, 1983, pp. 16-17). Dewey viewed knowledge as an active tool for problem-solving, where ideas serve as instruments to navigate and adapt to the world. His approach involves experimental inquiry, akin to the scientific method, where hypotheses are tested and revised based on their outcomes, emphasizing empirical evidence and adaptability (Dewey, 1938, pp. 107-111; Campbell, 1995, pp. 46-53). Instrumentalism evaluates theories and concepts based on their success in achieving desired outcomes, prioritizing practical results over theoretical consistency. In essence, Dewey's

instrumentalism is about using ideas as practical tools to solve real-world problems, with a focus on empirical testing and adaptability. The process starts with setting the problem, proceeding to institution of operative ideas that are predictions and can be tested. The testing of ideas can be conducted by means of reasoning, in combination with facts. "The operative force of both ideas and facts is thus practically recognized in the degree in which they are connected with *experiment*" (Dewey, 1938, p. 114). The scenarios here are experiments with ideas and facts and produce insights into potential outcomes.

The research methodology employed in this study is anchored in scenario technique (Ramirez, et al., 2015), supplemented by literature reviews and comparative scenario analysis. This approach aligns with design thinking principles, aiming to dissect and illuminate various facets of complex issues. Schwartz claims that scenarios should serve as thought-provoking learning tools. They should be grounded in empirical facts and real-world observations to the greatest extent possible, addressing potential future developments without claiming predictive power (Schwarz, et al., 2023; Schwartz, 1991); Schwartz, 1991).

Ramirez et al. see scenario methodology as a method aiming at providing interesting results, to open discussion further (Ramirez, et al., 2015). Planning practice can very well be routine practice, in this case, as a passive practice in accordance with regulations, which will not be enough to safeguard a future of the built environment in an area of limited maintenance. Nousiainen highlights the inherent contradictions within cultural heritage conservation, marked by diverse stakeholder views and competing interests (Nousiainen, 2024), thus framing the central challenge of this study. Svels has studied the processes leading to the current situation and concludes that there has been an imbalance between governmental and local interests, and dissatisfaction with the organization of decision making and earlier conflicts about the implementation of Natura 2000 (2017).

The scenarios developed herein are informed by prior fieldwork, the author's planning experience, and stakeholder engagement. They are not intended as forecasts of likely outcomes but as conceptual models that elucidate the potential impacts on the built environment. As such, they serve as a foundation for formulating proposals that could reconcile conflicting interests, all while maintaining a commitment to preserving elements of cultural heritage.

SCENARIOS

The three scenarios that will be discussed are:

1. Protecting nature and allowing the built heritage to deteriorate
2. Increasing means for holiday homes
3. Renewed coastal fishing

The scenarios need to be clear and distinctive as a basis for discussion and limited in numbers (Ramirez, et al., 2015). The first one is seen as logical due to the limited interest and resources spent on the built environment by the governmental administration as a major landowner. Finland has a long tradition of exploiting shores for summer homes. This municipality is home to about 4000 such units (Statistics Finland5, n.d.). The standard of summer homes continues to improve as a long-term trend according to the nationwide report about summer homes (Voutilainen, et al., 2021). Thus, one can expect an increased willingness invest also in these remote islands. The third scenario is constructed as a contrasting scenario based on historical trades and indicated potential risks from ruptures in the global food production due to climate change and a trend of fish species migrating northwards (Food and Agriculture Organisation of the United Nations, 2015).

Scenario 1. Protecting nature and allowing the built heritage to deteriorate

Norrskär, the largest dwelling, notable for its extensive array of buildings on government land, faces a critical juncture. The prevailing decree appears to preclude alterations to the natural environment, built structures, and the terrain. Nevertheless, activities such as fishing, hunting, and dredging—the latter necessitated by land uplift—are provisionally permitted, as outlined by the Ministry of the Environment. The fishermen's cottages, a distinctive and stratified ensemble, remain as vivid testaments to the archipelago's commercial past. The unveiling of a new decree proposal about establishing a distinctive nature reserve drew an audience of approximately 200, underscoring the community's vested interest (Nordström, 2022).

Central to the discourse are concerns regarding administrative transparency, usage rights of the buildings, and the implications of dredging. A 2023 survey reveals a narrative of scepticism towards the authorities' steward-ship of the fishermen's cottages and the enactment of decrees. Moreover, there is a discernible shortfall in the upkeep of government-maintained (Forststyrelsen) heritage buildings, precipitating their decline (Turunen &

Figures 8 and 9. Ritgrund main building, pilot station. To the right detail of rotten structure behind the plates. Photo: Author.

Strandberg-Panelius, 2023). This scenario paints a picture of minimal investment, a laissez-faire approach to natural progression, and a history of restricted island access.

The lighthouse on Ritgrund stands as emblem of neglect, with the primary structure reportedly irreparable, despite its national significance and government ownership (Östman & Rönn, 2023).

An estimated 20–25% of the approximately 60 structures on Norrskär—spanning both private and public domains—have been neglected for years (Östman & Rönn, 2023). The island's character is defined by the lighthouse precinct and the harbour's fishermen's cottages. It is projected that the neglected buildings will vanish within two to three decades. Presently, about 25–30 buildings appear well-maintained. The lighthouse service's historical narrative is readily apparent, even in vacant edifices. However, the legacy of traditional fishing near the harbour is less perceptible, as evolving fishing practices and the transformation of cottages into holiday homes—with structural updates and additions like verandas—obscure the past. Ultimately, without intervention, the remaining fishermen's cottages will require comprehensive refurbishment, likely entailing a complete exterior overhaul. Without concerted preservation efforts, the island's open vistas may also give way to natural forestation.

Figure 10. Norrskär with its open, windswept landscape. Photo: Author

Scenario 2. Increasing material means for holiday homes

This scenario is informed by the historical trajectory of wealth accumulation among the affluent. Post-war, the popularity of summer cottages surged, particularly during the 1960s and 1970s, peaking in the 1980s (Statistics Finland4, 2022). Over two decades, average wealth in Western Finland soared by 100%, with the upper quartile gaining an additional 25% (Statistics Finland3, n.d.). Should this trend persist, we might anticipate a wealth doubling by 2040, providing ample means to invest in holiday homes. Despite a potential slowdown in this summer-home vacation trend, there is a notable shift among young retirees towards adopting their holiday homes as primary residences (Kietäväinen, et al., 2014). The proliferation of remote work has also led to approximately 30 per cent of the population designating their homes as their primary workplace (Statistics Finland, 2023). At Norrskär, robust internet connectivity is available. However, the remote location dictates that travel is weather-dependent, and during winter, access is nearly unfeasible. Conversely, the islands' exclusivity may appeal to affluent tourists.

Presently, the local masterplan regulations cap residential size at 35 m², with an additional 15 m² allocated for storage, thus restricting expansion. The market value of these properties is markedly low, or non-existent. Nonetheless, refurbishing these modest cottages requires minimal material resources, allowing for significant material replacement. To date, only a

handful of such renovations have occurred, with minimal changes preserving the visual integrity of the lands.

Regulatory modifications permitting larger buildings could lead to the proliferation of sizeable holiday homes and a shift in architectural styles. The lighthouse keepers' dwellings, substantial structures on the islands, remain under government control, with the responsible agency showing little inclination towards sale or lease.

Projected over a 20-year horizon, these cottages may acquire significant market value as the number of owners with ties to the fishing industry dwindles.

Figures 11 (above) and 12 (below) illustrate two instances of renovation: Object 11 serves as a holiday cottage, while object 12 is utilized by a fisherman, both having undergone refurbishment. Photo: Author.

Owning a fisherman's cottage could attain exclusive status, akin to possessing a luxury yacht for only brief sailing excursions. This shift is likely to prompt exterior renovations and a desire for constructed amenities to enhance outdoor recreation. Additionally, there will be a call for larger, more secure harbours, influencing the coastal landscape.

Scenario 3. Renewed coastal fishing
The revival of coastal fishing could be seen to perpetuate traditional fishing culture. However, current trends do not bode well for such continuity, given the recent warnings about declining populations of key species like salmon and herring (Ministry of the Environment, 2019). Despite intentions to bolster these populations, the reality presents a stark contrast. Furthermore, today only one third of all fish consumed comes from Finnish waters (Luke. Natural Resources Institute Finland, 2022). The number of fishermen has decreased by 50 per cent in 20 years and more than 90 per cent of it is open-sea trawler catch of herring (Luke. Natural Resources Institute Finland, 2021).

Historically, fishing was a family-centric endeavour, with small open boats transporting entire families to the islands for a collective effort in fishing and fish conservation. This practice has evolved significantly over time. From a substantial communal activity, it has transitioned to partnerships of two, and now, with advanced technological equipment, a single fisherman can manage the task alone and deliver fresh fish for consumption.
Modern boats have expanded in size and functionality, now featuring cabins complete with cooking and sleeping amenities. The enhanced speed of these vessels allows expeditions to and from the islands in under an hour. Coupled with the precision of GPS navigation, fishermen can embark on their journeys before sunrise or amidst fog, negating the need for traditional fishermen's cottages. While such cottages may offer convenience for extended stays, fishermen are unlikely to invest in them at market rates comparable to holiday homes. Instead, they may prefer access to a new plot specifically for newbuilds for this purpose.

The potential resurgence of fishing as a professional endeavour would have a minimal impact on the built environment. Families with existing cottages would likely maintain and modernize them; however, the necessity for a land-based cottage is diminishing. The answers of a recent survey address this transition from professional fishery to summer holiday homes and

Figure 13. Current state of the art fishing boats. Photo: Author.

concludes that "archipelago life must be preserved" (Nordström, 2022). This encompasses safeguarding the recreational opportunities for cottage owners, establishing clear guidelines for the upkeep and expansion of existing structures and harbours (such as adding a sauna to a storage building), and recognizing navigation on waterways as an integral part of archipelago life. The survey also touches upon the contentious issue of dredging, highlighting the need for careful consideration in these practices (Nordström, 2022).

CONCLUSIONS

The scenarios produced insights into potential outcomes. They constitute reasonings that open the possible future, allowing for criticism and improvements. Schwartz maintains the idea that none of the scenarios should be the middle way (Schwartz, 1991). According to Schwartz, it is normal that one will see interconnections between different scenarios (Schwartz, 1991). All these scenarios stand for an extreme, the third may even be farfetched. One could think of more scenarios, but according to Schwartz this is seldom an advantage (Ibid.). The experiment with scenarios seems to support the idea of scenarios as a tool for studying potential futures of cultural heritage – both in the sense of analysis and as a tool for exchange about development. The answer to the initial question is that the future will be a mix of conservation

and continuation in present culture, where nature and heritage constitute a framework for new cultures, with nature conservation administration as the major governmental agent (replacing the historical governmental seafaring officials), and locals visiting as the major human activity in the area, with a profound shift towards leisurely activities.

The central issue at hand is the suitability of current conservation planning practices in safeguarding elements of cultural heritage within the built environment. Analysis of various scenarios indicates that designating areas as nature preserves with minimal human intervention may prevent significant alterations to historical structures, albeit at the cost of their gradual decay. Conversely, introducing commerce that fosters a new cultural paradigm will likely necessitate a complete overhaul of existing structures. For instance, revitalizing the fishing industry will not resurrect the erstwhile culture; rather, it will give birth to a new one, rendering the traditional fishermen's cottages obsolete. Governmental support for the maintenance of these buildings is projected to be insufficient. The survival of numerous lighthouse buildings, in their current form, is doubtful without novel applications, thereby necessitating private investment.

A pivotal question arises: Which aspects of cultural heritage warrant preservation? The remnants of the historical fishing culture are scant, primarily because it was unassuming and predominantly manifested through fishing practices. The cottages and lighthouse buildings stand as testaments to bygone eras, yet their significance may elude the younger generation. In the preliminary discussions about regulations the standpoint is mainly in the conventional discussion about what should be preserved – in the sense of preserving historical material formats. A crucial consideration for the conservation of fishermen's cottages is that they should exemplify, at least in a handful of instances, construction utilizing rudimentary methods and the repurpose of materials. Consequently, establishing a museum might be imperative, given that most existing structures are slated for renovation, if not decay. The other point of view inherent in the discussions relates to how the buildings can be used in the future, which can be read as an interest in managing it in the interest of current local cultures, in contrast to the conservation imposed by external cultures such as governmental authorities and administrative measures. Smith found that visitors used the places as tools for renegotiating of meaning (of work), community, and family life, in a survey of visiting industrial social museums (2006, p. 236).

The protracted history of discord between local communities and the nature preservation authorities complicates the quest for a resolution. The Management Plan for nature preserves, as stipulated by the Nature Conservation Act (5.1.2023/9, 2023, p. § 57), falls under the purview of the same controversial nature preservation authorities. Ideally, this plan should serve as a platform for engaging all stakeholders in dialogue—not solely on nature conservation but also on consensus-building regarding the objectives, strategies, and stewardship of cultural heritage. Presently, Finland lacks mechanisms for broader discourse on the conservation of cultural environments. While local master plans can incorporate guiding principles and regulations, they are typically formulated with limited public participation, relying instead on the recommendations of architects, planners, and officials from the administration, and as Julin finds, professionals are often masters of the discourse and thus can influence the outcome (Julin, 2025, p. 234).

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THE CONTRIBUTION OF TRADITIONAL TIMBER CLADDINGS TO REGENERATIVE DESIGN STRATEGIES
Inputs from literature, craftspeople's experience, and field observations in Sweden, Norway, and France
Geraldine Brun

ABSTRACT

The regenerative paradigm conceptualized by the scholar in landscape architecture, John Tillman Lyle (1996), resonates with older principles from vernacular architecture and traditional construction methods. This paper aims to supplement the regenerative design framework established by Lyle with inputs from our heritage, focusing on timber claddings. The traditional craft of cladding façades with lapped wood elements was scrutinised in Northern Norway, West of Sweden, and Champagne in France. Supplementing the literature with field observations and craftspeople's experience showed the adaptative nature of traditional practices and appears as a replicable method to inform regenerative design. Beyond a method to scale down Lyle's principles, this paper provides inspiring examples and specifications for regenerative design of timber claddings. A cladding of wood can be made of local species and last longer than it takes for the resource to replenish. Pine, spruce, and alder were the most encountered species, and their specificities should be accounted for when choosing the manufacturing and assembling methods. The results show that cladding's design should be based on an evaluation of four risks: wood decay, erosion, deformation, and cracking. The performance partly depends on the durability of wood, which is a function of wood ageing, understood as the combination of wood formation and weathering. Against rain, horizontal shiplap gives an efficient protection while vertical claddings easily adapt to openings. Designing, making, and maintaining timber claddings with a craft approach is a way to prioritise for sustainability and to foster resilience and diversity in both our built and natural environments.

KEYWORDS
Regenerative design, timber cladding, traditional craft, heritage, architecture

INTRODUCTION

Ecosystems have the innate regenerative capacity to recover from disturbances, which goes beyond the abilities to function, conserve, or even improve. This ecological insight into our environment is at the origin of the development of regenerative design. Regenerative strategies offer the opportunity to advance the mechanistic sustainability paradigms (Devi & Jeyaradha, 2023; Du Plessis, 2012) by considering the positive and putatively long-term impact an element can have on the bigger system it inhabits (Mang & Reed, 2012). Adopting development strategies based on long-term benefit is a way to increase our environment resilience, fostered as well by the diversity of place-specific regenerative designs.

To deal integratedly with places, principles for regenerative design and architecture have been defined but the resulting frameworks are considered too complex to implement in construction projects (Clegg, 2012; Greenwell & Makela, 2022; Pediaditakis, 2021). The complexity of the established frameworks is due to a lack of quantifiable variables and an abundance of intangible concepts. Supplementing an intricate theoretical background with tangible inputs can make regenerative practices more intuitive and thus widespread (Clegg, 2012; Devi & Jeyaradha, 2023).

This paper aims to make the regenerative design principles established by the scholar in landscape architecture, John Tillman Lyle (1996), more intuitive by integrating inputs from our heritage, based on the observation that the regenerative paradigm resonates with older principles used to shape buildings for centuries (Kellert et al., 2011). For example, regenerative architecture is reminiscent of vernacular buildings, which "embodied the local characteristics of a place" such as the climate, the history of the traditions, and the native materials (Nagashima, 1999).

Wood is a cultural and visual material potentially issued from local natural forests supporting biodiversity and is also renewable, biodegradable, and stores carbon. Traditional timber architecture like the 800-year-old storehouse at Ingatorp's church in Sweden and the 700-year-old boards and shingles of Staveloftet in Norway show that wood can be used to craft long-lasting constructions (Hakonsen & Larsen, 2008; Nilsen, 2021). Thus, wood is a relevant material for regenerative design and preserved elements of our wooden heritage can be tangible sources of inspiration in terms of place-specific design alternatives (Devi & Jeyaradha, 2023).

Timber claddings are gaining popularity in Europe and have a long tradition in Scandinavia and other places where the precipitations are a menace for the buildings. This paper focuses on timber cladding to specify Lyle's framework at the scale of a single architectural element, and to present a methodology reproductible for other elements. The research question addressed in this paper is "how can the traditional craft of cladding façades with lapped timber elements inform regenerative design strategies?".

MATERIAL AND METHODS

To answer the research question, the tradition of timber cladding was studied in three different geographical areas: Nordland in Norway, West of Sweden, and Champagne in France (see figure 1). Those three areas are equally spread every 1500 kilometres on a South/North axis and are close enough to show some similarities but distant enough to cover a wide spectrum of designs. Methods that were once adapted to a place can become relevant in another one since ecosystems are constantly evolving, especially in a fast-changing climate, and spreading knowledge globally can become inspirational rather than source of standardization (Cole, 2012; Wahl, 2016).

Traditional practices are practices representative of a specific area and relying on small-scale technologies and local resources. They do not follow standard written rules; instead, they are adaptive and changing with generations,

Figure 1: The three areas of study, represented in green on the map.

but also from one craftsperson to another, and have hardly been captured in written words (Wahl, 2016; Norwegian Institute of Wood Technology, 1997). Therefore, historical literature presents fragmented knowledge, and traditions are sometimes kept alive by marginal practitioners, or frozen in our preserved built environment, which is hard to make sense of today (Nilsen, 2021).

To grasp the tradition of timber cladding, literature was reviewed, and field observations were conducted with a deliberate focus on crafted board claddings of lapped elements because they are easily repairable (Alexander et al., 1977, p.1094). Their repairability makes them relevant for regenerative design strategies but also makes it hard to tell for how long they have been standing on a façade, and dendrochronology was used in some cases for getting more trustworthy dating (Edvardsson et al., 2021). The species identification was confirmed by microscope when needed, for example for alder wood, which is hard to recognize when weathered (Lindblad & Melin, 2023).

In addition to estimating the age of the claddings and the used species, craft observations were systematically used to characterize the typology of the boards and the façades. To conduct reliable craft analysis, I solicited practitioners and professionals in the field of built heritage. In Sweden, I got the support of the craft researcher-practitioner Robert Carlsson for observations and discussions. In Norway, the craft researcher-practitioner Sverre Walter Tørriseng shared with me his expertise of traditional claddings under field observations and discussions. In Champagne, the practitioner Laurent Roussel and the built heritage technician Jean-Marc Marande guided my fieldwork and my interpretations. Lyle's principles for regenerative design strategies (see table 1 on next page) were used to collect relevant data and answer the research question.

RESEARCH AND RESULTS

1. *Letting nature do the work* and the impact of wood ageing on claddings' performance.

Wood ageing outdoors is commonly referred to as weathering and implies changes of the mechanical and chemical characteristics of wood. By interviewing craftspersons, Brémaud et al. (2023) showed that wood ageing can be understood as a larger process, which includes the formation of wood in the tree. The mechanisms of wood formation depend on many parameters at the individual level, the site level and the species level. The durability of

PRINCIPLES AS FORMULATED BY LYLE (1996)	SYNTHETIZED EXPLANATION BASED ON LYLE (1996)
1. "Letting nature do the work"	Prefer natural processes and means (possibly augmented) to engineered and chemical ones.
2. "Considering nature as both model and context"	What will work or not is dictated by a place's networks of energy and material flows.
3. "Aggregating, not isolating"	Save energy by designing parts as integrated elements of a whole instead of aggregating them later on.
4. "Seeking optimal levels for multiple functions, not the maximum or minimum level for any one"	Define a range of optimal values.
5. "Matching technology to need"	When possible, prefer a long-term perspective to a short-term strategy based on economic wealth.
6. "Using information to replace power"	Conduct careful observation to take suitable action instead of excessive safety margin.
7. "Providing multiple pathways"	The variability of conditions should result in more than "one-way flows from producer to consumer."
8. "Seeking common solutions to disparate problems"	Some properties of one process can be useful for a quite different other process.
9. "Managing storage as a key to sustainability"	Keep the balance between "the rate of replenishment" and "the rate of use".
10. "Shaping form to guide flow"	Induce flows using form instead of industrial means as "fossils fuels, steel, and concrete".
11. "Shaping form to manifest process"	Let the process be visible to increase our understanding of the world.
12. "Prioritizing for sustainability"	Prefer regenerative technologies to industrial ones in development projects.

Table 1: regenerative design principles (Lyle, 1996) for data collection.

wood depends on those mechanisms; for example, aspen trees growing on a rich soil give durable wood and the wood of pine and spruce is more durable for mature trees (Thörnqvist, 2024).

According to the craft researcher-practitioner Jon Bojer Godal (2012, p.21), growth rate should be low from the first years, giving a small ratio of juvenile wood. In any case, field observations have shown that cladding boards issued from fast growing trees can perform well, for example the 150-years-old cladding on Jöttas house (Karlsson & Carlsson, 2013, see C9 in figure 2), and some 200-years-old boards of pine on the belfry of Kungslena church (see figure 3).

For both pine and spruce, the butt log should be preferred to obtain durable wood and boards, which do not crack (Godal, 2012, p.32). In any case, the cladding boards on Jöttas house were taken from various places of the logs, and a board of pine was even taken from the top log (Karlsson & Carlsson, 2013, see C11 in figure 2). For pine, the lowest meters of the trunk have the highest ratio of heartwood, which is less permeable than the sapwood (Vadstrup, 2000). This is also the part of pine trees with the highest concentration of resin and, according to the scholar in architecture Søren Vadstrup (2000, p.38), this "natural impregnation of the wood is far more effective and lasts incomparably longer in terms of time than various artificial wood impregnation methods."
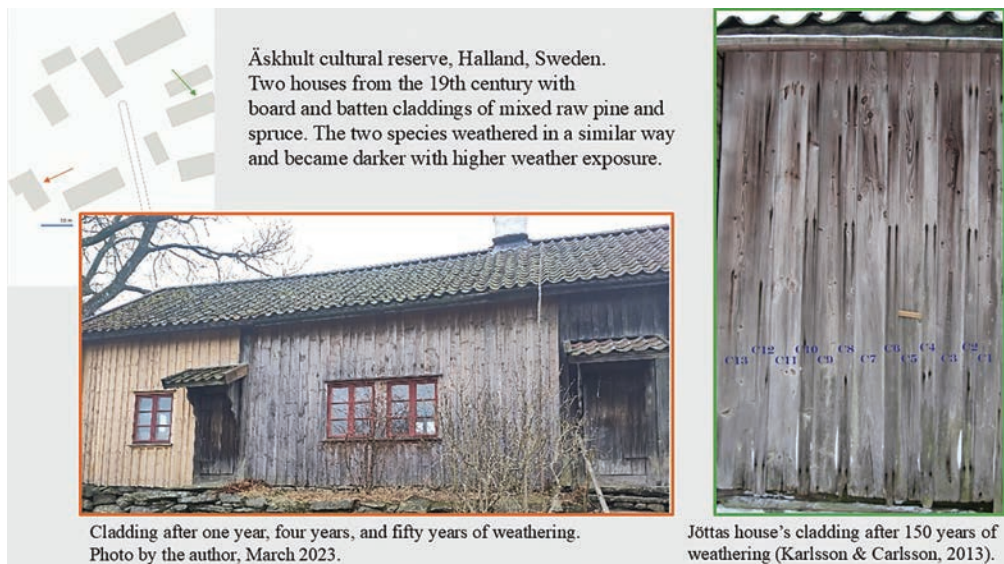
Figure 2: Board and batten claddings in Äskhult – Sweden.

In Äskhult, pine and spruce were used indifferently for cladding façades and are hard to distinguish from each other after weathering (see figure 2). In any case, their wood has different properties as pine wood contains more extractives than spruce wood, which is generally less permeable (Thomassen, 1985). To increase the amount of extractive in pine, different methods can be employed, consisting in triggering the tree's defence reaction (see for example Sjömar, 1988). As reported by the scholar in architecture Peter Sjömar (1988), this could allow getting durable wood like the one obtained from trees dead on roots, which also has the advantage to present only few checks thanks to slow drying.

Some wood formation processes are cyclic, and one can decide whether to fell trees in the winter or during a warmer period of the year. While winter felling is the most popular for conifers among craftspeople, especially if the wood is to be air-dried (Thörnqvist, 2024), felling deciduous trees in the summer can present some advantages. For example, it has been observed that the wood of alder resists biological attacks better when trees are felled in the summer (Fleischer, 1779).

Another way to obtain durable alder wood for cladding or roofing is to waterlog shingles for three years in a mineral-rich bog (Mahn, 1855, p.14).
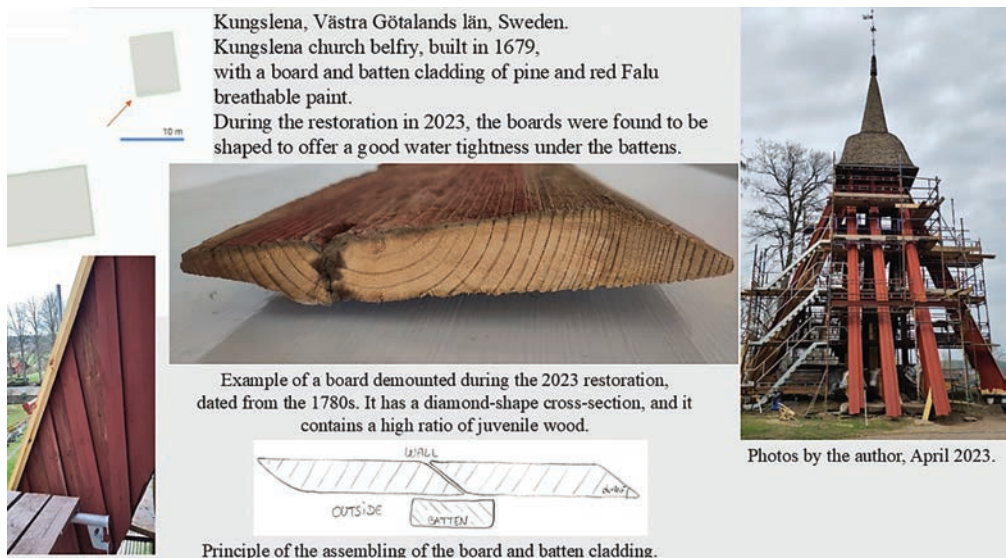
Figure 3: Board and batten cladding in Kungslena – Sweden.

In the humid climate of Champagne, claddings of alder wood perform well because rain forms a hard rind on the boards' surface, as Roussel (personal communication, July 2023) and Marande report (personal communication, January 2024). Alder wood has been used for cladding in Bohuslän as well and, according to the craftsman Nils Andersson, it performs best on north façades and should stay uncoated (Carlsson, personal communication, April 2023). Alder wood seems to become hard and durable in contact with water and, on the other hand, Sjömar (1988) reported that with the years of exposure, the pine timbers of houses' walls become harder and harder.

The mechanisms of wood ageing have an impact on wood's mechanical and chemical properties and thus on timber claddings' performance. Traditional craft knowledge can inform us on those mechanisms that wood sciences do not fully explain yet, and teach us how to acknowledge, enhance, or modify wood properties by letting nature do the work. However, the intangible heritage of craftmanship is not fully accounted for in our built heritage, partly because the best quality of wood was not systematically employed (for example, for sheltered claddings as the one observed on Jöttas house's, figure 2, and the one on Kungslena church belfry, figure 3), and partly because the potential use of natural processes is hard to detect.

2. *Considering nature as both model and context* and the quality of local timber cladding.

In Champagne, the posts of the buildings are traditionally made of oak, which grows fast in the clay-rich soil, together with other species such as birch, poplar, and alder (Peudon, 1981). Timber claddings protect the posts and the wattle-and-daub filling from the rain and are found mostly on the west façades (see figure 4), the so called Vêrvegg "weather wall" in Norwegian (Godal, 2012). The shiplap boards resist better erosion caused by rain and wind when the joints and fasteners are covered with battens (see figure 4 and Brun, 2023). The fact that alder wood is light and relatively soft (Piton, 1981), makes it easy to work (Herlitz, 1932, p.126; Mahn, 1855, p.13), but also prone to rapid erosion.

According to Grindhal (1941), black alder can grow in any conditions of humidity but thrives well in the same humidity conditions as the ones preferred by spruce. In alder coppices, spruces often appear, which benefit from the protection of the overcover of alder with some thinning (Hallander, 1930; Herlitz, 1932). The nitrogen-rich soil resulting from the roots of alder

Frampas, Champagne, France.
Workshop with a shiplap cladding of alder called "tavillon",
unmaintained for more than thirty-five years according to the owner.
The abrasion around the fasteners causes
the boards to detach.

20 m

Photos by the author, January 2024.

Figure 4: Shiplap cladding in Frampas – France.

gives the best possible conditions for spruce wood production, if the soil is not too acidic (Herlitz, 1932). Figure 5 illustrates this symbiosis between spruce and alder, both in the built and the natural environments. The trunk of the black alder tree is at least as big and straight as the ones of the surrounding spruces and exhibits fewer low branches. Alder is among the deciduous trees whose wood shrinks and deforms the least, but depending on the site, the level of internal tension can be much higher than for conifers, and the logs should sometimes rest for several months between felling and sawing (Jeuneux, personal communication, February 2024).

A place's network of energy and material flows includes the local weather and tree species. Both the trees and the wood of alder like humidity, but to be used as cladding, the design should be adapted to the risk of mechanical abrasion, depending on the local weather conditions. As in a natural woodland, wood issued from different species can cohabit on a façade.

3. *Aggregating, not isolating* and the choice between horizontal and vertical lapped elements.

On frame houses, it is natural to nail the cladding boards horizontally directly on the posts, while on log houses, it is more natural to nail the boards vertically, crosswise to the logs. This explains the trend of horizontal claddings in Champagne and vertical claddings in Scandinavia, except in places

Barn likely from the early 20th century in Bohuslän, Västra Götalands län, Sweden. Board-on-board cladding of spruce and alder seen from inside. Photo by Carlsson, August 2023.

Forest in Mariestad, Västra Götalands län, Sweden. Alders and spruces by a stream. Photo by the author, February 2024.

Figure 5: Symbiosis between alder and spruce – Sweden.

with driving rain like Western Norway, where claddings can be installed horizontally on vertical battens used to create ventilation (Drange et al. 2011, p.174). The shiplap cladding in figure 6 is today a rare example of cladding mounted horizontally on vertical battens on the coast of Northern Norway, where Vestlandspanel "Western Norway cladding" was once a typical rear-side cladding (Norsted, 1980). Based on the information from the antiquarian Terje Nordsted and on figure 6, one can hypothesise that horizontal shiplap's aesthetic was depreciated, especially with boards of various dimensions, but that it was used on little visible façades and particularly in the absence of openings (typically between two houses or on the rear).

In the presence of doors and windows, board and batten claddings are well suited as their installation requires no special sawing (see figure 7). The boards on the sides of the opening are nailed first, before the rest of the cladding is installed under and over the window to fill up the space left between. The designer Stewart Brand (1995) refers to board and batten claddings as a forgiving cladding system, probably due to how easy it is to adapt to openings and corners, as well as to different board dimensions (see figure 8).

Traditional claddings were often designed and assembled in ways that balanced aesthetics and logistics. Whilst horizontal shiplap presents advantages in rainy climates, installing vertical claddings on buildings' main

façades is a way to save efforts while obtaining a pleasant aesthetic even with boards of various and variable dimensions.

4. *Seeking optimal levels for multiple functions, not the maximum or minimum level for any one* and cladding boards' dimensions.

In figure 8, we can see a cladding where underlayer boards have different thicknesses down to fifteen millimetres, something I have rarely observed. Board and batten claddings are traditionally 1 to 5/4 inches thick (25 to 32 millimetres) (Drange et al., 2011, p.176). Thick boards mean a relatively small surface of wood exposed, "which should be positive for the durability of the cladding" (Nilsson & Norling, 1989, p.13). On the other hand, the scholar Jean Buathier (1984) wrote about the conifer shingles on the roofs of Haut-Jura that the thin ones (five millimetres) called "tavaillons" have, among others, the advantage of drying fast. Thin boards have a large surface in relation to the volume allowing them to dry fast, which is an advantage to delay decay of uncoated wood that tends to take up more water.

Figure 9 shows a shiplap cladding of oak with boards about six millimetres thick and fifteen centimetres wide, as seemed to be standard for boards split from oak logs in Champagne. Roussel (personal communication, July 2023) reported that he has replaced oak claddings, which were only a couple of millimetres thick after a hundred years on a façade. The thin boards of oak in

Mosjøen, Nordland, Norway.
House with a shiplap cladding on the façade towards the neighbor house.

10 m

The boards have different thicknesses and widths and are joined in the center of the wall. Photos by the author, April 2024.
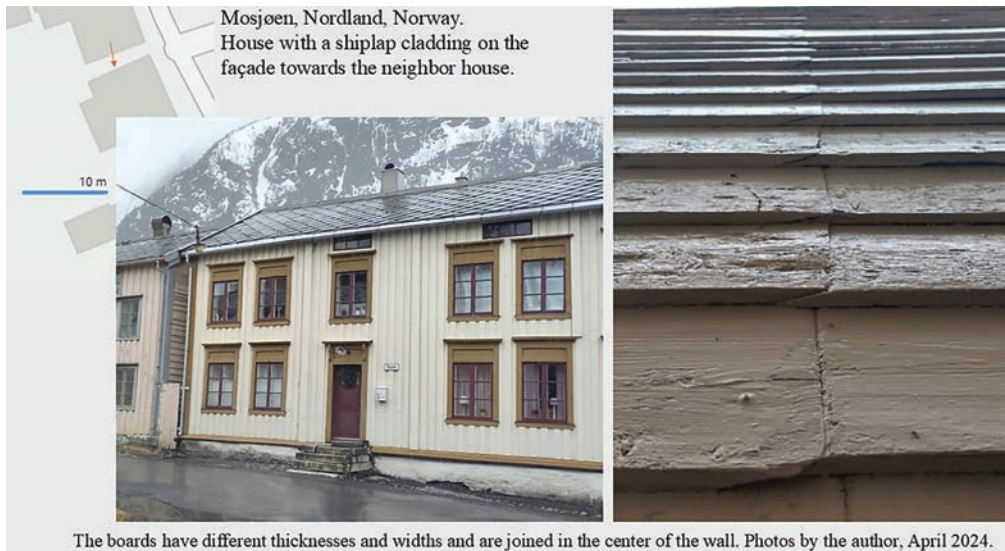
Figure 6: Shiplap cladding in Mosjøen – Norway.

Mariestad, Västra Götalands län, Sweden.
Two houses with board and batten claddings of conifer with red Falu breathable paint, showing two different methods to adapt cladding to openings in the wall, both without any sawing required.

Photos by the author, June 2024.

Figure 7: Board and batten claddings, Mariestad – Sweden.

Gothenburg, Västra Götalands län, Sweden.
House from the middle of the 18th century with a built-in board and batten cladding of conifer with red Falu pigments paint.

Photos by the author, June 2024.

Underboards of fifteen millimeters (left) and twenty millimeters (right).
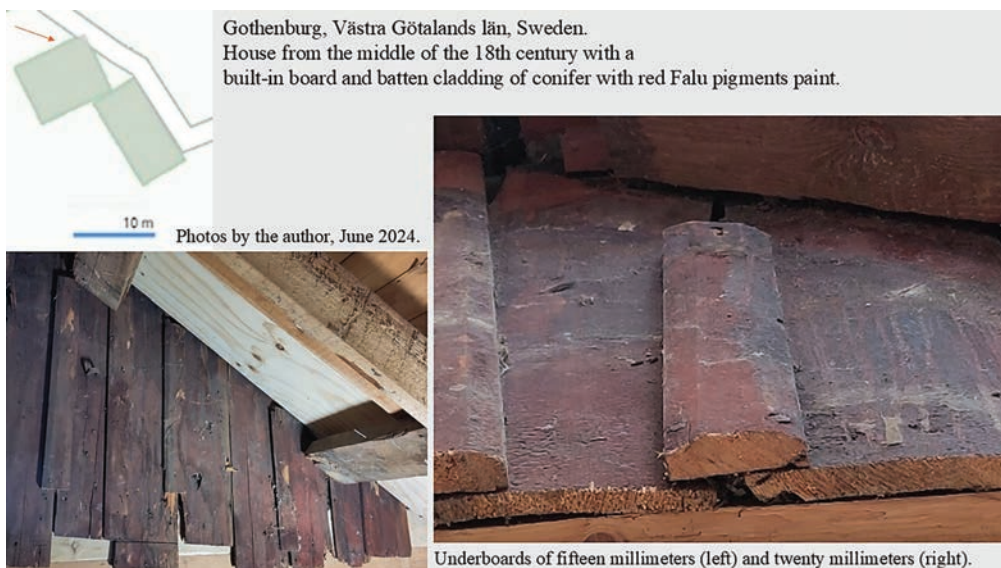
Figure 8: Board and batten cladding in Gothenburg – Sweden.

figure 9 deformed a lot, but the facts that the cladding is horizontal and that the boards are overlapping in two directions insures good rain protection. The shiplap cladding of poplar has boards fifteen millimetres thick, which also deformed. When thick boards warp, they risk pulling out the fasteners (see figure 10).

According to Roussel (personal communication, July 2023) who crafted the poplar shiplap cladding in figure 9, alder is less prone to deformation than oak and poplar and thus performs better as cladding (see figure 8). In general, alder wood shrinks little (see for example Gaudin et al., 1999, p.8) and is not prone to splitting (see for example Mahn, 1855, p.13). In any case, my field observations show that alder boards tend to split in the ends (see figure 4), as concluded in a craft study where alder shingles were split from green wood and cracked under drying for thicknesses under five millimetres (MiGo:byggnadsvård, 2020). In the latter, end splitting might have been triggered by fast drying. Another factor could be the growth conditions of the alder, which are often straighter in forests and alder marshes than on shores.

For Drange, Aanensen, and Brænne, the thickness of cladding boards should be managed in relation to their width: "Cladding boards should be at least nineteen millimetres thick, and the width usually between hundred and
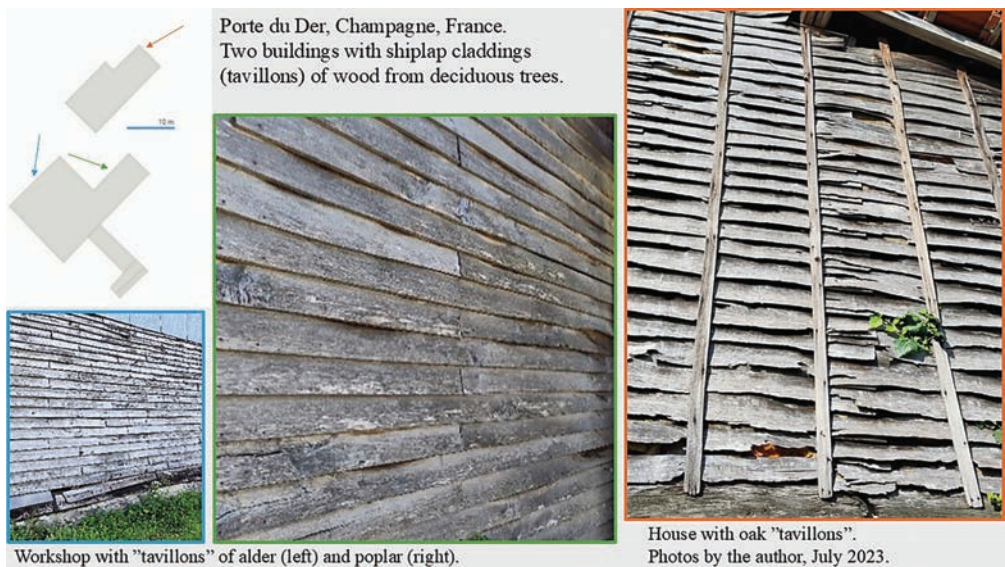
Figure 9: Shiplap claddings in Porte du Der – France.

twenty-five and two hundred millimetres. For widths over hundred and fifty millimetres, the thickness should be at least twenty-five millimetres" (Drange et al., 2011, p.176). They add that thicker boards dry more slowly and thus manage better humidity variations. Thus, wider boards, which are normally prone to cracking (see figure 9 and Hagstedt & Nyström, 1977, p.26), should also be thicker to limit movements and cracking with water uptake and drying cycles.

A wide spectrum of thicknesses and widths can be used for cladding boards. The dimensions must be decided depending on the assembling method, the use of coating or not, and the risks to be addressed among decay, erosion/abrasion, warping, and cracking/splitting.

5. *Matching technology to need* and sawing patterns for cladding boards

In addition to the boards' dimensions, the sawing pattern is another manufacturing parameter, which influences the warping and cracking behaviours. In figure 11, we can see an underlayer board about thirty-six centimetres wide, only twenty millimetres thick. Unlike the two other boards to the left of it, that board was taken in the centre of the log and thus has not cupped. Figure 12 shows the four main advantages of boards extracted from the centre of a log in addition to containing the highest possible ratio

Hova, Västra Götalands län, Sweden.
House from the 1870s with board and batten cladding, likely of pine, and unmaintained linseed oil white coating.
The boards are 24 millimetres thick.
Photos by the author, April 2023.

10 m

One single board has warped, pulling out the nails.   A batten covers the pith crack present only on the widest board.
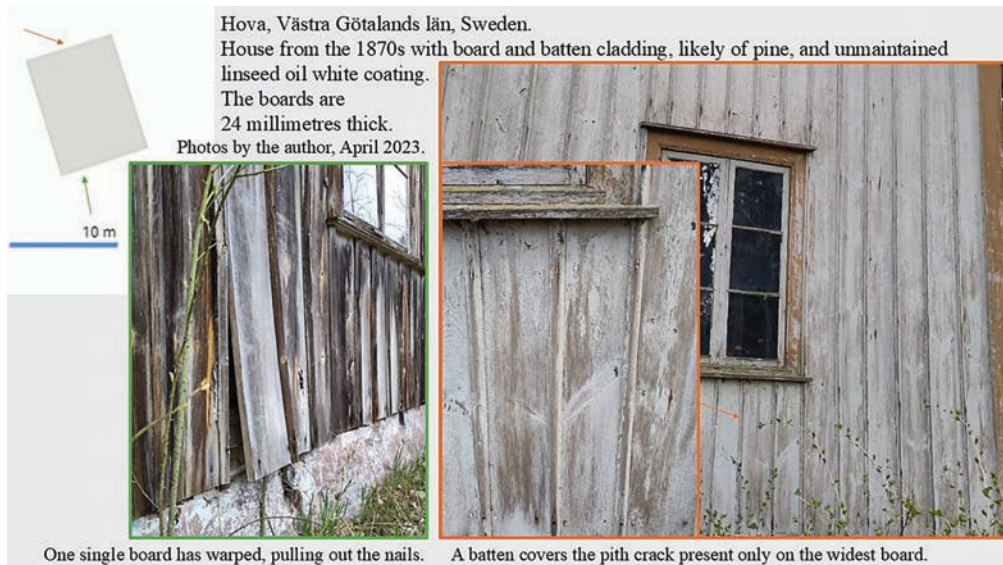
Figure 10: Board and batten cladding in Hova – Sweden.

of heartwood. Those boards have standing growth rings and thus little distance between latewood, which erodes less than early wood, and serves as an armature against abrasion (Godal, 2012, p.175). The extractive rich knots also serve as armature across the board. Lastly, the pith rays, which have the capacity to transport water, are not traversing the cladding boards (Almevik, 2012, p.115).

However, the disadvantage of centre boards is their tendency to present a crack at the pith (see figure 10), sometimes limited to a groove (see figure 11, and Brun, 2023). According to Godal (1992, p.86), boards of pine should be sawn on the sides of the *mergsprekk*, "pith crack" in Norwegian, which spirals along the centre line of the stock. This implies discarding a board between thirty and fifty millimetres thick in the centre. Pith cracking occurs especially in mature conifers, and spruce is less prone to pith cracking than pine, as illustrated in figure 13, where the centre boards present no crack or groove.

From the perspective of long-term benefit, cladding boards should have standing growth rings, meaning that they should be quartersawn or extracted exclusively from the centre of a log and around the potential pith crack. In case of the latter, the rest of the log can be used for other applications where, for example, mechanical strength is a requirement.

Figure 11: Board-on-board cladding in Fåleberg – Sweden.

Figure 12: Drawing showing the advantages of sawing a cladding board from the middle of a log. From left to right: kvistar "knots", årsringar "growth rings", märgstrålar "pith rays", krympning "shrinkage". Source: Almevik (2012, p.115).
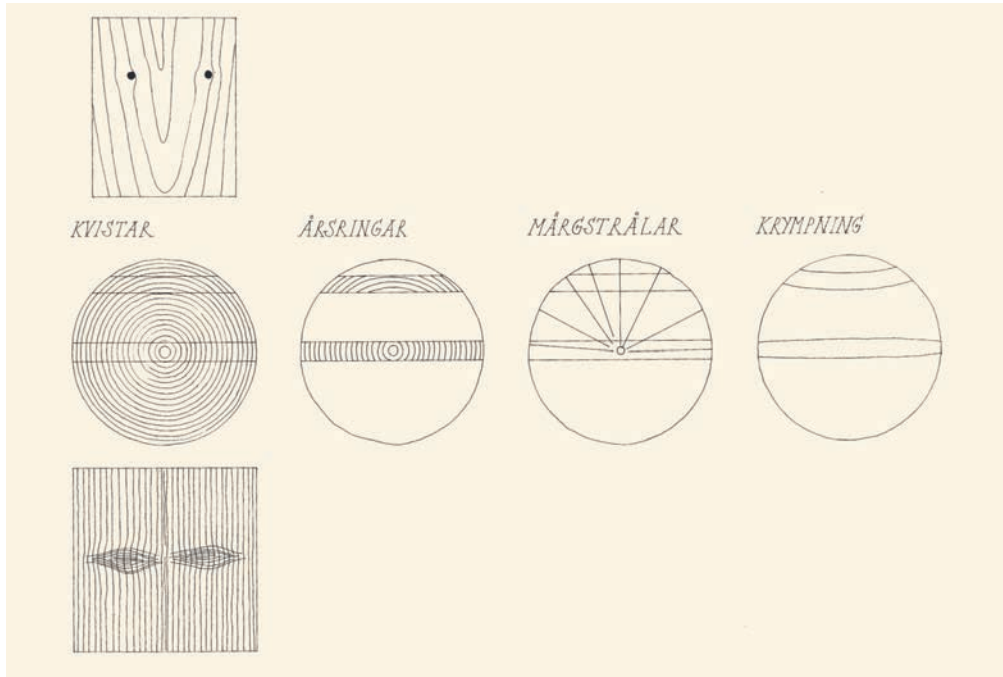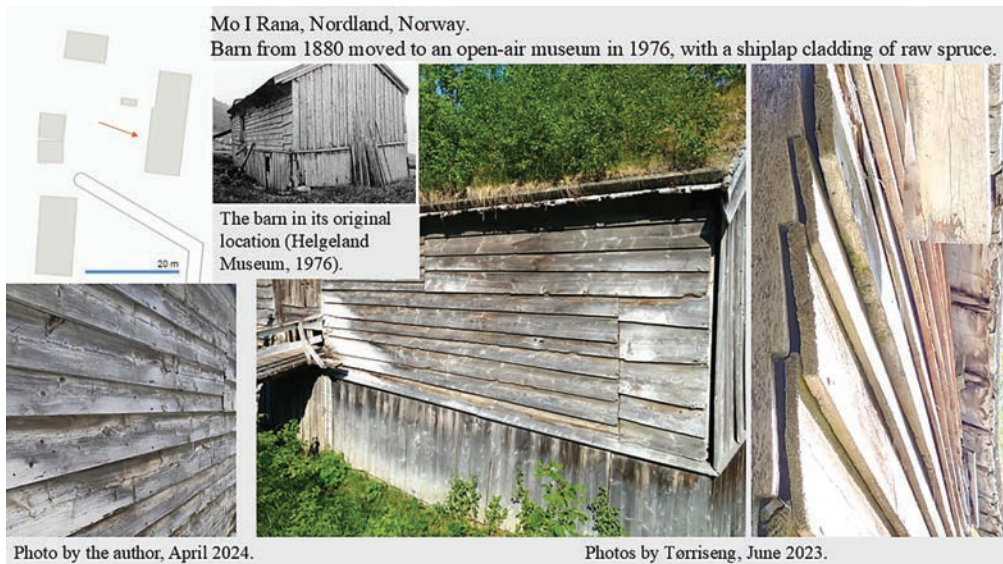

Figure 13: Shiplap cladding in Mo I Rana – Norway.

6. *Using information to replace power* and maintaining claddings

There is a tradition of replacing the lower part of timber claddings because its exposure to moisture makes it decay faster (Brun, 2023). A strength of horizontal shiplap is that it is easy to change only the lower part of the cladding, which is more exposed to humidity (Drange et al., 2011). This is illustrated by the house in Juzanvigny shown in figure 14, where the lower part of the cladding has visibly been replaced recently. The presence of vertical battens only on the upper part suggests that the rest of the boards have also been changed at least once. On the other hand, the house in Soulaines (see figure 14) shows a repair high under a roof, illustrating that horizontal shiplap cladding allows for quick maintenance not only on the lower parts of the façade.

On vertical claddings, interventions due to the accelerated decay of the lower part often take more efforts but remain possible. Figure 15 shows a solution where the façade is split into two parts, probably as a result of repairs on the lower part, as suggested by the presence of wood plugs on the upper part. Claddings were fastened using wood plugs mainly before the 19th century, supporting the theory that those boards are original from the 1730s, as explained by Tørriseng (personal communication, April 2024). On the other hand, figure 16 shows surgical interventions, which allow the preservation of the aesthetic of the façade and to save material.

Juzanvigny, Champagne, France. House with a shiplap cladding (tavillons).

Thilleux, Champagne, France. Barn with an underroof of overlapping oak boards.

Photos by the author, July 2023.

Froes at the MOPO museum of Troyes.

Soulaines, Champagne, France. House with a shiplap cladding (tavillons).

Figure 14: Overlapping elements in Champagne – France.

Thanks to observations or monitoring, suitable maintenance interventions can be performed in time and normally do not result in the replacement of the cladding on an entire façade. Horizontal claddings have the advantage there, but traditional vertical claddings show traces of maintenance as well.

7. *Providing multiple pathways* and cladding as one function, among others

Nowadays in Norway and Sweden, it is usual to designate a cladding by the word "panel". Going back a hundred years in time, panel was a term used to refer to the ceiling of a building in Sweden (Nordiska museet, 1977a, 1977b). Figure 16 shows an example where boards, probably former cladding boards as suggested by the holes typical of wood plugs and the traces of red paint, were reused on a ceiling. Similarly, some former cladding boards were found in an underroof construction during the restoration project of the house Rynesstua (Tørriseng, 2022).

Figure 17 shows a board-on-board cladding and the underroof above it, showing that the same constructive principle with overlapping boards is used for both. An important difference is the size of the overlap, often bigger on a cladding than on an underroof. On that house, another difference is that the cladding boards are hand-planed and have a profile (see Almevik & Renström, 2004, p.116), whereas the roof boards have a rough-sawn surface.

Mosjøen, Nordland, Norway.
Dolstad church, built in the 1730s, with a board-on-board cladding of conifer and red coating.
Several generations of cladding are coexisting and witness different manufacturing methods.

A board with variable thickness (Tørriseng, 2022).

An older generation of cladding fastened with wood plugs (Tørriseng, 2022).

A newer generation of cladding on the lower part of the wall. Photo by the author, April 2024.

Figure 15: Board-on-board cladding in Mosjøen – Norway.

Dønna, Nordland, Norway.
Houses likely from the early 18th century, today parts of Dønna outdoor museum.

Main house: ceiling with traces of wood plugs and south facade with surgical maintenance. Photos by the author, April 2024.

Photos by the author, April 2024, and Tørriseng, 2015. Vertical shiplap cladding seen from the front and the top.
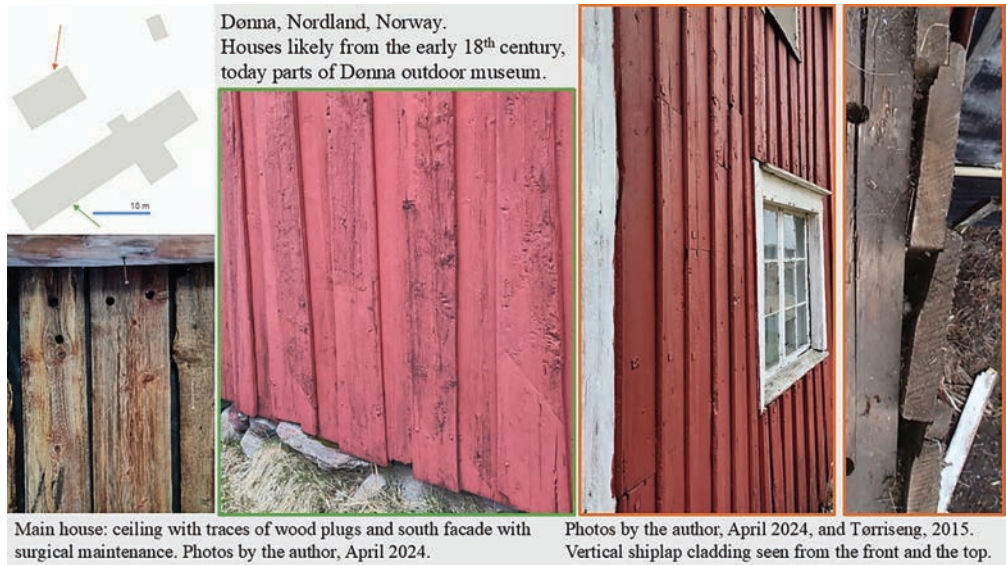
Figure 16: Ceiling and cladding in Dønna – Norway.

In Champagne, the boards of shiplap claddings are called "tavillons", while "tavaillon" refers to shingles in some parts of the French Alps (Gagny, 1993, p.16) and in Jura (Buathier, 1984). Both "tavillons" and "tavaillons" come from the Latin "tavella" meaning plank and were traditionally obtained from splitting wood radially from a log using a froe (see figure 14). Figure 14 shows the underroof of a barn with overlapping boards of oak reminiscent of "tavillons" and illustrating the versatility of planks.

Overlapping boards typically used for shiplap, or board-on-board, and board and batten claddings present a high adaptation and reuse potential. This is due to their simplicity and, in the case of a craft approach, the fact that the potential specialisation into underroof and cladding, for example, happens at a late stage.

8. *Seeking common solutions to disparate problems* **and cladding boards' orientation**

Claddings boards tangentially cut tend to be assembled with the pith side outwards, even though it is not systematic as shown in figure 13. Vadstrup recognizes the quality of boards with standing rings but specifies that "[t]his does not mean that you cannot use boards with more tangential rings for a cladding. The important thing here is how to orientate the pith side"

Hjo, Västra Götalands län, Sweden. House showing the same technique of overlapping elements for the cladding and the underroof.

The cladding above the door is planned by hand and painted with red Falu breathable paint (Almevik & Renström, 2004). Photo by the author, May 2023.

Figure 17: Lapped elements in Hjo – Sweden.

(Vadstrup, 2014, p.2, translation by the author). The craftsman and author Anders Frøstrup reported that "according to old craftsmanship customs, all cladding boards, both in horizontal and vertical cladding, should have the most durable pith side outwards. This custom also implies that the cladding seals best against precipitation" (Frøstrup, 2008, p.168, translation by the author). The idea that a cladding is more weather-tight with the pith side turned outwards, both for horizontal shiplap and vertical board-on-board, was earlier formulated by Godal, who argued that an additional reason to have the pith side out is that the knots are smaller on that side, and thus less likely to crack and to let water in (Godal, 2012, p.86).

For vertical claddings, the butt-end should be oriented downwards so that most heartwood is placed at the bottom of the façade, where the moisture impact is greatest (Drange et al., 1992; Vadstrup, 2000). By orienting boards with the butt-end down and the pith side out, one also avoids the water running in through the knots (Godal, 2012, p.203). Another solution is to mount boards with the top end of the tree down, allowing the grain raised by sawing to be oriented so that it does not trap the water (Nilsson & Norling, 1989). Grain raises due to the reduction of the trunk diameter with the height and is fostered by lignin degradation on façades exposed to sunlight (see figure 18). In figure 18, centreboards are oriented with the top-end down in

the left picture, and the top-end up in the right picture. As we can see on the right, the grain has opposite directions on each side of the pith. The grain direction also changes around round knots, causing the grain to raise and to potentially trap water. Thus, it does not seem particularly relevant to orient boards with the top-end down to avoid grain raising. On the other hand, figure 18 shows that boards with standing rings are generally less prone to grain raising.

Some properties acknowledged for one function can be beneficial for another function. For example, orienting boards with the pith side out offers many advantages, as an alternative to the optimal solution of using quartersawn boards or centreboards.

9. *Managing storage as a key to sustainability* and claddings' durability compared to resource replenishment

Alder wood is considered as non-durable outdoors (Vitruvius Pollio, 1547). However, it is traditionally used for cladding in Thiérarche region (Claessens, 2006, p.32; Gaudin et al., 1999, p.9; Streith, 1989), in the Ardennes department (Unité départementale de l'architecture et du patrimoine Ardennes, 2022), in the Alsace-Lorraine region (Centre Régional de la Propriété Forestière Lorraine-Alsace, 2005) and in Champagne in France. In Sweden, claddings of alder have been observed in Bohuslän (Brun, 2023). In Sweden, alder

Mariestad, Västra Götalands län, Sweden.
House with a board and batten cladding of conifer, with red Falu breathable paint.

Photos by the author, June 2024.

Figure 18: Board and batten cladding in Mariestad – Sweden.

gives reasonable timber dimensions after fifty years (Hallander, 1930) and the yearly growth-rate culminates at about forty years (Herlitz, 1932) before almost stopping at sixty years (Mahn, 1855). In Champagne, it is possible to obtain wood with a diameter of forty centimetres in forty years (Gaudin et al., 1999, p.7). Roussel (personal communication, July 2023) normally uses alder trees of about fifty years to obtain boards fifteen centimetres wide, and because alder trees' hearts start to rot from sixty years.

Figure 9 shows a shiplap cladding of raw alder, which is over seventy years old, and is probably issued from trees younger than sixty years according to Roussel (personal communication, July 2023). In Champagne, alder claddings are shown to perform as long as it takes for the resource to replenish and without being attacked by insects. In Sweden, alder is vulnerable to wood-boring insects, and Carlsson once heard from another craftsperson that alder bark repels them (personal communication, 2023). Observed shingles of alder dated from 1790 on a church roof have the bark on (MiGo:byggnadsvård, 2020), as well as an underlayer board saved from a demolished house in Västergötland (Brun, 2023). That indicates that the presence of bark was not considered a problem but does not allow us to prove its protective role.

Figure 19 shows a cladding with boards likely original from the 18th century, as indicated by a craft analysis, and supported by results from dendrochro-

Gothenburg, Västra Götalands län, Sweden.
Stable of a mention built in the 1780s with a board and batten cladding of pine, with red Falu breathable paint.
A temporary roof protects the structure until a potential full restoration.

Photo by the author, April 2023

Example of an underlayer board dated from the 1750s and containing "age wood". Photo by the author, April 2023, and Fuentes, May 2024.
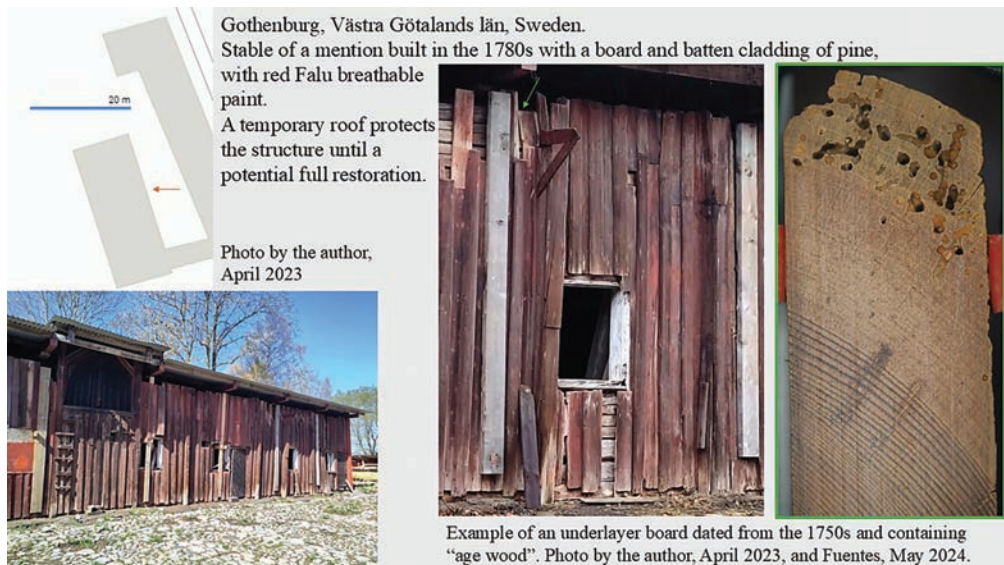
Figure 19: Board-on-board cladding in Gothenburg – Sweden.

nology. The twenty-eight millimetres thick board was taken from a pine over 300-years-old, given that 286 rings are included in the sample captured by the wood scientist Mauricio Fuentes. The presence of *aldersved*, "age wood" in Norwegian and Swedish, characterised by rings smaller than one millimetre, confirms that the wood is issued from a mature tree. This board likely clads the barn façade since its construction in 1782, and thus needs to last at least fifty more years before its age possibly reaches the age of the tree when felled.

Keeping the balance between the rate of use and the rate of replenishment of the resource can be done by ensuring that the cladding's lifespan exceeds the age of the trees when felled. Thus, the use of non-durable wood issued from naturally fast-growing trees like alders can prove as relevant as the use of durable wood issued from mature trees, especially in a context where a cladding's durability is limited by societal trends more than by wood durability.

10. *Shaping form to guide flow* and cladding façades to keep the weather out

The main function of a building's exterior wall is to keep the weather out, and a necessary condition is that "the materials are joined in such a way that they cooperate to make impervious joints" (Alexander et al., 1977, p.1094). The board shown in figure 3 has edges shaped to form a tight joint with the adjacent boards. This was observed only on that building, where the cladding is mounted on a post construction without filling, and thus is naturally ventilated, but where the watertightness is important to ensure that the belfry stands for a long time. According to the tool marks, the board was sawn with a single-blade framesaw and the diamond-shape cross-section was obtained by hewing the wood with an axe. In fact, boards sawn with single-blade framesaws have a rough surface, which can be a motivation to rework them to enhance weathertightness at the overlap.

Figure 16 shows a rare example of vertical shiplap cladding, and it seems at first glance that wind blowing down from the mountain would flow through the joints. A closer inspection revealed that the back of the boards was shaped to obtain a tight joint (see the top view in figure 16). In his report about the former board-on-board cladding of Rynesstua, Tørriseng (2022, p.61) explains how the overboards were shaped by chopping off some wood on the back side of the overboards where they meet with the underlayer boards, to enhance their weathertightness (see figure 20). As commented by Tørriseng (personal communication, May 2023), thin overboards give a more

appreciated aesthetic than thicker ones, both on board-on-board claddings and on shiplap claddings. This can be an additional motivation for chopping off some of the thickness of the overboards.

Figure 21 shows a façade in Arrembécourt designed to drain water out at each floor, helping to slow down the decay rate of the lower part of the cladding. Using the same detail, water is guided away over a gate in Outines, and we can see the resulting pattern on the vertical boards underneath the water edge, attesting that the water is flowing along the triangular teeth.

Figure 22 shows a vertical cladding and more specifically a part of a board high up under the roof. We can see that due to the change in grain direction around the pith, the grain raised on the left side under sawing, creating a much rougher surface than on the right side. All of the left rough side has been attacked by wood-boring insects, while the right smooth side presents no holes. Even though this cladding board is well protected from the rain by the roof, the side with a rough surface probably gathered moist and dirt, creating favourable conditions for wood-boring insects. This observation correlates with a principle I was taught by the craft researcher-practitioner Björn Svantesson: hewing or planing a board confers it a higher durability because it better directs water away instead of absorbing it (personal communication, April 2023). This also explains the preference of using rough-sawn boards to

Mosjøen, Nordland, Norway. Rynesstua, a house built in the 1730s, with a board-on-board cladding, likely of spruce, and red coating.

Principle of the assembling of the board-on-board cladding. "Omlegg" is the overlapping part of the boards. The outside is up on the drawing. Tørriseng (2022, p.61).

Rynesstua before the 2024 restoration (Tørriseng, 2022).

A demounted cladding overboard found reused as underroof board. Photo by the author, April 2024.

Figure 20: Board-on-board cladding in Mosjøen – Norway.

Arrembécourt, Champagne, France.
House with a shiplap cladding (tavillons).
Photo by the author, July 2023.

Outines, Champagne, France.
House with a shiplap cladding (tavillons) over a gate.
Photo by the author, January 2023.

Figure 21: shiplap claddings in Champagne – France.

Mariestad, Västra Götalands län, Sweden.
Outhouse with a board-on-board cladding of conifer, with red Falu breathable paint.

Photos by the author,
June 2024.

Figure 22: Board-on-board cladding in Mariestad – Sweden.

offer a better adherence to breathable paints without binding agents, such as the traditional red Falu paint, whereas oil-based paintings are often applied to planed boards to minimise their consumption (Almevik & Renström, 2004, p.37).

Inducing flow using forms can be achieved at different levels, from a board's surface finish to a façade's design. Inventive solutions have been observed primarily in the case of vertical claddings with lapped elements, which tend to be less watertight than horizontal shiplaps.

11. *Shaping form to manifest process* and live sawing

Live-sawn boards result from cutting through a log without block sawing or board edging. The edges of live-sawn boards follow the shape of the trunk and are often found on older floors or board and batten claddings in Sweden. The claddings in figures 3, 7, 11, and 23 are examples of board and batten claddings with live-sawn boards. In those cases, juxtaposing a board with the butt-end up, with one with the top-end up, allows to save material (Nilsson & Norling, 1989, p.22). The right part of the wall in figure 13 shows live-sawn boards on a horizontal shiplap cladding, something I have observed rarely. Tørriseng (2022, p.73) explains that several boards have variable thickness on the entrance façade of Dolstad church (see figure 15). The fact that the

Figure 23: Board and batten claddings in Mariestad – Sweden.

thickest end is the butt-end suggests that those boards are sawn following the reduction of diameter along the trunk towards the top, often as a result of hand sawing or band sawing (Godal, 2012, p.68). However, this is hardly visible and mainly presents the advantage of limiting grain rising.

By following the conical shape of trunks, live-sawn boards enhance our understanding of the relation between our built and our natural environments. Claddings with live-sawn boards confer an organic aesthetic to the façades.

DISCUSSION

The results show a correspondence between traditional building methods and regenerative design, allowing us to specify the principles of Lyle´s framework in the case of timber claddings.

Wood's natural durability was revealed to be a function of ageing, understood as the combination of wood formation and weathering. For example, literature highlights that the natural durability of pine varies both along and through a log, and craftspeople and built heritage professionals experienced that weathering makes alder wood more durable (§1).

A variety of species were used for cladding façades, which is not reflected in modern mass-produced cladding boards. Timber claddings can even be made from more than one species, as inspired by natural woodlands (§2). To use certain species, projects must be managed differently than in continuous production. For example, deciduous trees should either be carefully selected or the logs should rest several months after falling to avoid excessive tensions in the wood.

The craftspeople's knowledge of wood is specialised at the species level and sometimes at the site level, allowing them to select the right trees for a purpose when possible. Furthermore, the design of timber claddings seems directly connected to the façade implantation but also to the species (§4). For example, the boards' thickness should be managed in relation to the risks to be addressed among wood decay, wood erosion and abrasion, board cracking and splitting, and board deformation, which generally depends on the species (see table 2).

The research focused on claddings with lapped boards because they are made of simple elements that are versatile (§7). Results brought elements

of comparison between vertical and horizontal claddings, showing that the boards' direction is more than just an aesthetic parameter.

Horizontal claddings are particularly suitable for façades exposed to rain because the lower boards are easy to replace (§6), and they offer good watertightness independently of the boards' form stability (§4). The watertightness of vertical claddings can be enhanced by shaping the boards to obtain tighter joints, which also confers a pleasant aesthetic (§10). Vertical claddings are easily adapted to openings and to the use of boards of variable dimensions and live-sawn boards (§3, 4, and 11).

The performance requirements of each building and façade varies. The highest quality of cladding is obtained by extracting boards radially, and in the case of pine, discarding the pith, especially for old mature trees (§5 and 8). When not taken radially, orienting the pith side of boards outwards allows to expose the most durable wood to the weather, obtain better water sealing, and exhibit smaller knots (§8). When not live-sawn, the boards of pine and spruce should be oriented the butt-end down on vertical claddings (§8).

Further research should be conducted to characterise the properties of mature pine and of alder wood and assess their relevance for cladding.

	WOOD DECAY	WOOD EROSION AND ABRASION	BOARDS' DEFORMATION	BOARDS' CRACKING AND SPLITTING
Pine and spruce	Planed or hewed surfaces retain less humidity. The pith side and the butt-end, contain the most durable wood.	Standing growth rings give less grain rising on sunny exposures.	Boards with standing growth rings do not cup.	Pine, especially mature, has a pith crack, which spruce generally does not have.
Alder	Alder likes humidity but should be protected against wood-boring insects in Sweden, possibly by keeping the bark on.	Alder is soft and prone to erosion. Covering the fasteners slow down abrasion around them.	Alder deforms less than wood from other deciduous trees such as oak and poplar, but the internal tensions must be evaluated for each tree.	Thin boards often split at the ends if the tree selection and drying processes are not optimal.

Table 2. Lessons from traditional claddings depending on typical wood species and associated risks.

However, the concept of sustainability allowed us to relate wood durability to resource replenishment and thereby acknowledge the relevance of using naturally fast-growing species like alder for cladding (§9).

The results also informed us about the complementary roles of literature, discussions, and observations. Figure 24 synthetizes the outcomes of the study in terms of methodology development. In the case of the existence of a local tradition of timber cladding, it provides a method to gather inputs step-by-step using multiple sources.

CONCLUSION

The tradition of timber cladding with lapped elements was studied in three areas in Europe by confronting written sources, the experience of craftspeople, and field observations. Observed claddings have performed for decades or centuries and are not always of the highest possible quality as often described
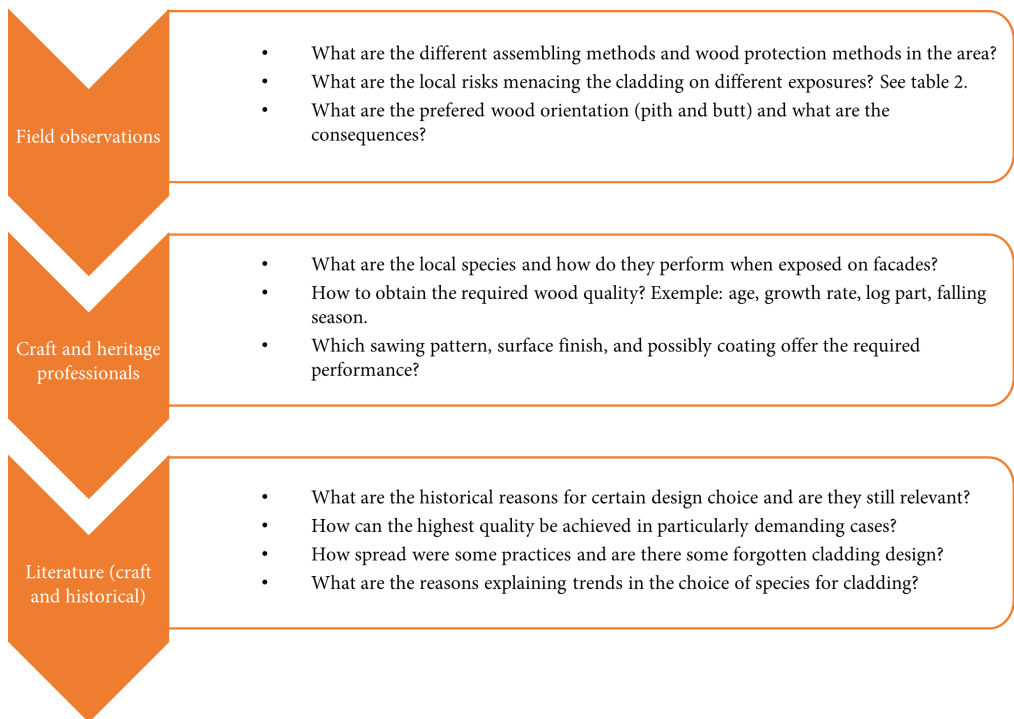
Field observations
- What are the different assembling methods and wood protection methods in the area?
- What are the local risks menacing the cladding on different exposures? See table 2.
- What are the prefered wood orientation (pith and butt) and what are the consequences?

Craft and heritage professionals
- What are the local species and how do they perform when exposed on facades?
- How to obtain the required wood quality? Exemple: age, growth rate, log part, falling season.
- Which sawing pattern, surface finish, and possibly coating offer the required performance?

Literature (craft and historical)
- What are the historical reasons for certain design choice and are they still relevant?
- How can the highest quality be achieved in particularly demanding cases?
- How spread were some practices and are there some forgotten cladding design?
- What are the reasons explaining trends in the choice of species for cladding?

Figure 24: Step-by-step method for implementing regenerative cladding design based on local traditions.

in craft literature, and sometimes recounted in living traditions. This shows that the quality requirements for performant timber claddings cannot be standardised.

Thus, this paper does not provide standard requirements for regenerative timber claddings but demonstrates how traditional construction methods can inform regenerative design. The method presented, based on the study of our tangible and intangible heritage can be used to gather inputs from existing claddings in other locations or adapted to apply to other architectural elements. This shows the scalability of the framework for regenerative design established by Lyle.

Regenerative design of timber claddings can be inspired by the outputs from traditional practices organised according to the first eleven principles for regenerative design (Lyle, 1996). It would be interesting to gain deeper knowledge in the properties of certain types of wood, such as alder wood or pine "age wood", to use them in the right way and places. This shows the importance of conducting research to develop knowledge from traditional craft practices.

The twelfth and last principle of Lyle's framework is "prioritizing for sustainability" and consists in opting for alternatives to industrial technologies in decision-making processes. Traditional craft practices as alternatives to industrial technologies can more easily be implemented in projects where the management and production chain can be re-adapted to the use of local species. Small-scale projects such as the construction of detached or semi-detached houses, which represent over half of the housing in Europe (Eurostat), appear as a possible sector to start from. In that sector, the reintroduction of local craft practices could inspire a new form of efficiency where maintenance, adaptability, and versatility are key values allowing to foster diversity and thus resilience in both our built and natural environments.

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DECORATING HOMES WITH CRUDE CONSTRUCTIONS
Exposed log walls in Finnish home decoration magazines 2017–2023
Iida Kalakoski and Riina Sirén

ABSTRACT

Vernacular architecture is defined as "architecture without architects". Correspondingly, vernacular repair could be defined as "repair without professionals". In both cases, instead of being influenced by educated designers or craftsmen, builders and repairers learn from their peers, such as earlier generations, friends, neighbours, or as very often today, from various forms of media, both social and traditional. Home decoration magazines, for example, are an important platform for sharing domestic repair ideas and practices from one home repairer to another.

In Finnish log houses, they have been used to cover the interior walls with clay, wallpaper or newspaper, for example. Nowadays, many domestic repairers reveal the log surfaces of their homes to create an authentic old house atmosphere. However, this revelation involves a paradox of authenticity, as the surfaces were not originally planned to be left exposed, and with the removal of the covering materials, the building rather loses its genuine historical layers and material evidence. Our article analyses the notions of authenticity associated with the exposure of log walls in home decoration magazines and juxtaposes them with the established concepts of authenticity in conservation theory. The aim is to uncover the differences between professionals' and lay people's perceptions of authenticity.

We reviewed a sample of 97 Finnish home decoration magazines from the years 2017–2023. Firstly, we examined the prevalence of log walls by the illustrations of magazines and analysed the way the exposed log walls were depicted in the images and texts of the articles. We paid particular attention to the situations in which the exposed log walls were connected with the meanings of authenticity. Secondly, we examined the relationship between academic conservation theory and notions of authenticity held by home renovators in the magazines. Seemingly a marginal phenomenon, the numerous reproductions of exposed log walls shape people's perceptions of historical buildings, building types, and their conservation.

KEYWORDS
Built heritage, conservation, authenticity, log buildings, timber buildings

INTRODUCTION

In this article, we examine the current trend in which the log walls, formerly covered, are exposed to be a visible part of the interior décor of old buildings. In building conservation, it is assumed that the cultural and historical value of buildings decreases when materials, such as surface structures, are removed.[1] However, our material highlights the residents' experience that the exposure of log walls increases the sense of historicity in the building. Through home decoration magazines, we seek to answer what kind of authenticity is aimed to be strengthened by the log wall exposure.

In Finland, they have built with logs for centuries. Most of the currently used log buildings were constructed during the 19th or 20th centuries. The interior walls of log buildings have traditionally been covered in various ways: earlier with clay and later with newspaper, lining paper, wallpaper, or boards. Until the mid-20th century, walls were left bare only in secondary spaces or due to lack of wealth. People have added surface structures on top of each other, for both aesthetic and practical reasons. As a result, the wall of a Finnish log building has been a good preserver of material history. The surface structures are a fixed part of the building and its architectural heritage.

Nowadays, many residents of old timber houses remove wallpapers and panels to reveal the log surfaces behind them. Exposure of the ground material is a relatively new phenomenon (Flink, 1999, pp. 9–10, 23–59). Even in those exceptional times when log walls were desired to be bare, instead of revealing old structures people built log walls as new. For example, during the National Romanticism of the early 20th century, the logs supposed to be exposed were carefully selected, and the Folklore Style of the 1960s and 1970s, regarding primarily summer houses, they used industrially equalized logs (e.g., Ahmavaara, 1966; Tempel, 1968).

Nevertheless, they have used old structures or their imitations for decades, for instance in Finnish restaurant interiors. After World War II, many restaurants were staged to resemble log cabins (e.g., restaurant Kestikartano, 1946–1967, Helsinki). From the 1970s onwards, picturesque Mediterranean dining environments became common (e.g., restaurant Kustaankellari, Tampere; Tarinatori, Helsinki, 1980s). In these, the rough brick walls were exposed from under the plaster, partially or completely, and if the walls of the space were not of brick, they could be staged with paint finishes or wallpapers.

Since the 1990s, exposed wall structures have become more common. They have used old structures as creators of a certain atmosphere in the redevelopment projects of industrial buildings, for instance (Hakkarainen & Mattinen, 1984, p. 46). Such changes were inspired, for example, by New York loft apartments (Zukin, 1989, pp. 2, 64). Thus, the exposure of older building materials has not earlier appeared in the same form and extent in Finnish interiors as the current trend.

In Finland, the architectural heritage is very young compared to many other countries, and especially older interiors and their materials have preserved very little. According to our research material, exposed log walls increase residents' experience of the building's historicity, even though, for example, the international conservation document, the Venice Charter, highlighted the value of historical layers already in 1964. This situation shows the contradiction between professionally defined authenticity and the resident's experience of authenticity. Home renovators or home decoration magazines may not necessarily recognize this contradiction.

Our research approach falls within the field of material culture studies. Based on our home decoration magazine material, we ask: 1) what kind of

Figure 1. In the Amuri Museum Quarter in Tampere, they present the living conditions of the working class in different decades of the 19th and 20th century. One museum room demonstrates the method of covering logs with newspaper pages, since they did not have bare log walls even in the lowest-income working-class homes. Photo: Iida Kalakoski, 2022.

authenticity people strive to strengthen by exposing log walls, and 2) how does the perception of authenticity by home renovators differ from that of conservation professionals? We theme the manifestations of authenticity using concepts from material culture studies and conservation theory operating in the field of architectural history. Finally, we consider what kind of reality the trend produces and how it affects Finns' perceptions of architectural heritage.

THEORETICAL FRAMEWORK AND KEY CONCEPTS

Our research focuses on peoples' notions of authenticity associated with the exposure of log walls in domestic houses. We approach the subject from the perspective of material culture studies developed in the traditions of ethnology and anthropology. Our main methodological path is observation, theming, and reasoning.

Interior surface structures lie at the intersection of home decoration and architecture. In the building conservation field, researchers are used to examine architecture, such as the facades of buildings. Building conservation is linked to official guidance, and it is not considered appropriate for authorities to comment on the private home decoration. However, changes made in the interior also affect the overall cultural and historical value of the building.

Minna Sarantola-Weiss, from studies in the Finnish housing and furniture industry, links the interest to home decoration to a certain approach in historical research. In this approach, the world is examined "from below," that is, from the individual's perspective (Sarantola-Weiss, 2003, pp. 28–29). In ethnology, too, homes are examined as active stages of everyday life (Sarantola-Weiss, 2003, p. 31). Thus, the wall surface structures can be conceived as an everyday practice that shapes people's identity.

In art history, wall surface structures have been studied as an artistic expression and class marker of the upper social classes (e.g., Thornton, 1984; Danielsson, 1998; Heikkinen, 2009). In the field of conservation, surface structures are analysed from the perspective of documentation and conservation methods (e.g., Flink, 2006; Heikkinen, 2009). Experientiality and authenticity of surface structures are rare as research subjects.

A log wall is a material that, when exposed, evokes strong images and sensory experiences. Anna Kajander (2022) states that materiality has been

a central interest in ethnological research since the early stages of the field. By the 1980s, scholars started to see objects and materials as perspectives to various cultural phenomena. This orientation was influenced by semiotics and consumer research (Kajander, 2022, pp. 140–142).

Kajander continues that the way we sense objects is a combination of personal and cultural factors. It involves various temporal and cultural layers, perceptions, and memories of atmospheres, appropriateness, power relations, and identities. It is often difficult to recognize and articulate the meanings of the different components of our relationship with objects. In ethnography, which has become central in ethnology, the focus is targeted at the interpretation of meanings and actions that people associate with objects, and the effects of objects on them (Kajander, 2022, p. 146, pp. 150–151).

Individuals not only express themselves and construct their identities but also maintain, change, and create new cultural and social traditions, practices, norms, and ideals through home decoration. When we decorate, we do so within the boundaries and norms formed by cultural limits and assumptions. According to Arja Turunen (2011, p. 24), it is a matter of defining the self by means of material culture. Similarly, the exposure of log walls can be seen as a representation. By exposing log walls, people express their relationship with the surrounding culture. Thus, presenting home decoration in a magazine can be strongly related to self-expression.

Log walls relate to a non-linear concept of time. A log wall not only evokes different impressions in different viewers but also expresses different time levels. In cultural studies, such dense meanings have been referred to with the concept of messiness. According to Visa Immonen (2016, p.190), in an archaeological context messiness refers to the way in which the past leaves its marks on objects as material memories. Their temporality is not perceivable by a series of linear events but of simultaneous traces of various times on each object. An object is thus fundamentally multi-temporal (Immonen, 2016, p. 198). In this sense, a log wall is an example of a material collection of fragmentary memories, created by the material's own nature and various human-induced repetitions and processes of damage.

Anthropologists Arjun Appadurai and Igor Kopytoff developed the concept of object biography in the 1980s to describe the change in meanings that occurs in objects during their existence. The meanings of objects vary based

on their wear, repairs, changing uses, and locations, and this change from one context and use to another also alters their meanings (Immonen, 2016, pp. 191–192). The uniqueness of a log wall not only arises from its original material properties but also from all the wear, nails, and stains that have accrued on its surface over the years. However, the most significant onto-logical change in a log wall occurs during the phase of exposure, when a space-defining functional structure reveals its characterful surface.

HOME DECORATION MAGAZINES AS MATERIAL AND METHODS

We examine peoples' notions of authenticity associated with the exposure of log walls through home decoration magazines. We reviewed a sample of 97 home decoration magazines from the home archive of one of the authors, covering the years 2017–2023. The sample included issues from the following Finnish home decoration magazines: *Avotakka* (27 issues), *Deko* (8 issues), *Glorian koti* (12 issues), *Koti ja Keittiö* (5 issues), *Meidän talo* (28 issues), and *Unelmien talo ja koti* (17 issues). In addition, individual quotes were sought from the websites of various magazines.

In cultural studies, magazines are often seen as introductory material to the subject but as ethnologist Arja Turunen (2011, p. 52) states, the use of periodicals is justified by their close connection to current discussion. Magazines address little-known topics, and in addition to reflecting changes, they often stimulate discussion and thereby enhance changes. In this study, we refer to home decoration magazines as a Finnish, regularly published, image-focused periodical that features short articles on home decoration.

Home decoration magazines emerged as research material because they represent an important cultural actor in the dissemination and meaning-making of interior design trends and the values attached to homes. They have promoted the commercialization of Finnish home decoration since the 1960s, for example (Sarantola-Weiss, 2009, p. 43). Additionally, throughout their existence, home decoration magazines have played a central role in producing discussions about the modern home, and their history is thus closely linked to how concepts such as home, authenticity, history, traditions, and their interrelationships are understood in Finnish society.

As been crucial in bringing the exposure of log walls to broader awareness, home decoration magazines are justified as research material. Exposing log walls is an action that, due to its ease of implementation, quickly replicates

Figure 2. Diverse home decoration magazines are published in Finland. Many of them presented exposed log walls at the turn of the 2010s and 2020s. Photo: Iida Kalakoski, 2023.

from the pages of magazines into peoples' homes. Printed home decoration magazines, along with their websites and social media channels, form an important avenue through which interior design tastes are presented and disseminated to the Finnish audience. Minna Sarantola-Weiss (2003, pp. 42–43) has noted that magazines "are part of the same cultural reality as their readers," active agents that shape readers' behaviour and consumption habits. Thus, home decoration magazines are key disseminators of the log wall trend.

All components communicate in media material — the text, images, headlines, and their mutual arrangement. Therefore, we have treated articles as texts that include not only the written content but also the layout and illustrations. In an illustrated article, two narratives operate side by side: the visual and the verbal. The visual impression of magazines includes at least typography, layout, and photographs (Turunen, 2011, p. 79). A distinctive feature of home decoration magazines is the central role of illustrations.

In the case of exposed log walls, it is particularly important to understand the text in the broad sense described above. Even if only shortly mentioned in the text or caption, the image of the log wall often plays a central role in the overall layout of the article. The appearance and location of log walls are conveyed through images, and the meanings attached to them are expressed in the texts.

Most of the examined text excerpts in the home decoration articles are written as if spoken by the residents but in practice, they may also reflect the interpretations of the reporter. Home decoration magazine reporters speak to the reader mostly directly and equally. The style of commercial magazines is that reporters do not position themselves above their readers (Turunen, 2011, p. 32).

A minority of articles provide tips or repair instructions. At the same time, the discussion reinforces various interior design preferences. From the discussion in home decoration magazines, it can be inferred whether exposing log walls is understood as an appropriate action or not. We argue that the discussion and practices of home decoration are in a reciprocal relationship and shape each other.

The research material was selected based on the following principle. Based on our general observations, exposed log walls were more popular in Finnish home decoration magazines at the turn of the 2010s and 2020s, if compared to the early 2000s. Since we wanted to examine how the phenomenon appears to a wide Finnish audience, we selected for closer examination the home decoration magazines with the broadest possible audience. Thus, we excluded publications focused on specific types of housing, such as rural homes or holiday cottages.

Our research does not aim to quantitatively assess the extent of the phenomenon but is interested in clarifying the contradictions of exposing log walls. Therefore, our sample covers a varied selection of Finnish home decoration magazines published between years 2017 and 2023. Based on the sample, it is possible to outline the images associated with the phenomenon we are studying. In its unique incompleteness, the series is a sufficiently typical example of what might be available to an ordinary home decoration magazine reader.

Based on our browsing, we found that the trend of exposed log walls is particularly visible in the periodicals *Meidän talo* and *Unelmien talo & koti*, published by *A-lehdet*. These magazines emphasize single-family and holiday homes, old buildings, and rural homes. The buildings presented in the magazine articles were mainly constructed between the mid-19th century and the first three decades of the 20th century. Additionally, there are a few typical houses from the reconstruction period, interestingly falling at the intersection of older and modern construction.

There was one or more articles featuring exposed log walls in 28 out of the browsed 29 issues of *Meidän talo*. Accordingly, in *Unelmien talo & koti*, there were 14 out of 16 issues. In these magazines, log construction is also often on the cover: in the examined issues of *Meidän talo*, five covers featured an exposed log wall, and one cover of *Unelmien talo & koti*. Both magazines are also published online through the *Meillä kotona* website.

In the magazines presenting urban and apartment living, such as *Deko*, *Avotakka*, and *Glorian koti*, the exposure of log walls is relatively less presented. This is understandable, as exposing log walls is rarely possible in urban apartment buildings or new constructions, strongly present in these periodicals. In the sample of *Glorian koti*, the phenomenon in search was found in 5 out of 12 issues (none on the cover), in *Deko* in 3 out of 8 issues (one on the cover), and in *Koti ja keittiö* in 2 out of 5 issues (none on the cover). In *Avotakka*, observations were made in 6 out of 27 issues, one of which was on the cover.

After selecting the publications, we re-examined the selected occurrences. Most observations regarding exposed log walls were home decoration articles, yet the collection also included one issue where the only exposed log wall was part of an external advertiser's advertisement (Avotakka, 3/2020) and one where it was included in an advertisement presenting the content of the next issue (Meidän talo, 2/2022). Exposed log walls appeared particularly frequently in the articles that focused on the before-and-after transformations. This is explained by the fact that exposures are mainly done in renovation projects, and marvelling at the change between the previous and current situation is part of the cultural presentation of renovation work. The change is prominent and quick to implement.

From the selected articles, we highlighted the excerpts that refer to the exposure of walls and thus indicate the values associated with the act. We compared these observations to the central concept of authenticity in conservation theory and classified the quotes according to the dimension of authenticity. We will elaborate on the concept of authenticity further in the next chapter.

This research represents the study of the representations of interior design and the interpretations offered to readers, focusing on the magazine discussion about exposed log walls. The bare log walls shape people's perceptions of historical buildings and their conservation. Consequently, it supports practices that threaten the preservation of the values of the built environment. Studying this topic is meaningful because, in examining homes, home decoration magazines also address identity, power, morality, and change itself. It is worth studying a discussion that shapes peoples' identity and behaviour.

AUTHENTICITIES OF LOG WALLS

Authenticity is a well-studied and still debated concept in conservation theory. The prevailing trend is the continuous expansion of perspectives included in authenticity. Authenticity is addressed in home decoration magazines, although the term itself does not often appear in them. However, the pursuit of authenticity presented in home decoration magazines differs from the established views in conservation theory. In this analysis chapter, we present references to authenticity in home decoration magazines compared to conservation theory. We classify the references to authenticity in home decoration magazines into three groups: atmosphere, experience, and story.

Conservation in the Western context refers to repair work that preserves cultural and historical value. This may include conservation, reconstruction, and conservation measures, as well as new construction (Glossary of European Cultural Heritage Policy, 2011). The changes implemented in conservation should both improve the existing situation and adapt to their environment (Perkkiö, 2007, p. 41). Conservation is thus an activity that recognizes the historical, cultural, landscape, and architectural features and values of a building, and conservation theory is a field focused on identifying, explaining, and applying these values.

In Western countries, conservation thinking is tied to authenticity, and conservation principles aim to preserve the authenticity of the work. The word 'authentic' comes from the Greek word 'authentia,' which means genuineness,

reliability, and validity, and it is one of the most central and contested concepts related to the definition of cultural heritage (Matero, 2006, p. 83). In the context of building conservations, the term of authenticity has been applied since the Renaissance. Initially, the term was associated with the preservation of the original characteristics and values of the building (Perkkiö, 2007, pp. 33, 46, 48, 50). Jukka Jokilehto (1938–2023), an international expert in Western conservation philosophy and history, considered authenticity to be a dimension of universal human heritage (Jokilehto, 2011, pp. 7, 92).

In the 19th century conservation of historical buildings, authenticity meant preserving the original material and form, as well as protecting the history and appearance of the site (Perkkiö, 2007, p. 49). The most stringent view in the discussion was represented by art critic John Ruskin, who saw conservation as falsification and destruction, as it tampered with both the material and the aesthetic appearance of the work. For Ruskin, authenticity required the preservation of the historical building in its untouched state. The first international conservation charter, the Athens Charter published in 1931, required conservation to aim specifically at preserving the authenticity of the original material. All new material had to be distinguishable from the original (Perkkiö, 2007, pp. 48, 49).

The Athens Charter was preceded by the theoretical work by Alois Riegl. Not using the term of authenticity, Riegl actually outlined different perspectives of it by defining various values related to buildings. In his article "Modern Cult of Monuments" (1903), Riegl distinguishes between the historical (or documentary) value and the age value of monuments. Historical value relates to the building, its construction, or other phenomena closely connected to the building that can be identified and dated based on the building's characteristics. Age value, on the other hand, generally indicates the age and antiquity of the building, i.e., the passage of time, which is conveyed to the viewer through observations at the site and does not require prior knowledge from the observer. Age value also does not carry the obligation of truthfulness that can be associated with historical or documentary value (Riegl, 1992 [1903], pp. 69–83). Riegl's thinking shows that the values are often ambivalent and the emphasis on one often weakens the other.

The Venice Charter (1964) continued the line set by the Athens Charter by basing authenticity on the permanence of form and material. In the background there is, among others, Cesare Brandi's conservation theory (1963),

which strongly emphasizes the importance of preserving the original material. Brandi also demands the preservation of changes that indicate the passage of time, i.e., patina, so in addition to historicity, aesthetics can be interpreted as part of Brandi's concept of authenticity (Perkkiö, 2007, pp. 49, 50).

According to the Venice Charter, the aim of conservation is "to preserve and reveal the aesthetic and historical value of monuments" and it is based on the original material and authentic "respect for authentic documents". Additionally, it states that "When a building includes the superimposed work of different periods, the revealing of the underlying state can only be justified in exceptional circumstances" (Venice Charter, 1964, Articles 9, 11). Thus, perhaps the most significant document in Western conservation theory takes a very clear stance on the removal of existing structures, which can also be seen in the exposure of log walls.

By the 1990s, the need for a broader definition of the concept of authenticity was widely recognized. Bernard Feilden and Jukka Jokilehto proposed to divide authenticity into four components, all indispensable for authenticity to exist. They identified the components of authenticity as design, materials, workmanship, and setting (Feilden & Jokilehto, 1993, p. 17).

The international Nara Document on Authenticity (1994) focused on authenticity. According to the document, since authenticity is a culturally bound phenomenon it can be expressed at all the levels of culture. Thus, authenticity can be associated with, for example, the form and design of the object, its material and substance, use and function, traditions, techniques and maintenance, location and surroundings, spirit and feeling, as well as other internal and external factors (Nara, 1994, §10, §13; Operational Guidelines for the Implementation of the World Heritage Convention, 1994). Nara thus highlighted, for the first time, the importance of intangible cultural heritage for authenticity (Perkkiö, 2007, pp. 50–52). By incorporating aspects of living heritage into authenticity, Nara broke the centuries-old link between authenticity and the concept of originality, replacing the latter with continuity.

The discussion on authenticity has continued after the Nara Document, and the necessity of intangible cultural heritage as part of international conservation regulations has again been under question (Jokilehto, 2014, p. 45). However, the core idea is to perceive authenticity as a characteristic of the object that expresses its cultural significance in a truthful and credible

manner. According to Frank Matero (2007, p. 85), the widening concept of authenticity encourages us to recognize the continuous and varying history of objects, which includes use, damage, repair, cleaning, conservation – and sometimes destruction. The widening concept also allows different meanings for authenticity in different objects and among different people.

We can argue that as the concept of authenticity has widened, it has become increasingly vague and thus less useful as a tool for valuing built heritage. In the 1990s, the concept of *integrity* was introduced alongside *authenticity*, describing authenticity from the perspectives of the wholeness and the continuity of an object (Jokilehto, 2011, pp. 298–299).

AUTHENTIC ATMOSPHERE

The term "authenticity" was not used in our home decoration magazine material. However, it can be interpreted from the articles that the bare log walls are associated with the ideas related to authenticity. Nevertheless, one of the most common ways to address the cultural values in the material is to refer to the originality of the log walls. The logs are original in the sense that they form the oldest structure of the room, even though they may not have been part of the interior after the first few years allowed for the frame to settle. Originality is often seen as an intrinsic value, morally justified to reach for. The building has the right to resile to its original appearance, as highlighted in the excerpt below.

> *Every renovator hopes to find something genuine and original under the wall and floor surfaces, preferably in good condition, of course. In the renovation of this house, such a beautiful log surface was found under the wallpaper that it was left exposed (Meidän talo, 9/2020).*

The exposure of a log wall representing originality can also be seen as an expression of a longing for continuity. The log wall embodies the concept of the temporal messiness of material reality, as highlighted by Immonen (2016, p. 190). If the presented log wall was perceived as original, it is possible to simultaneously experience the time of the building's completion, the present time, and various eras in between. The "simultaneous multi-temporality" of the interior can be seen as a departure from the rationalist ideals of the 20th century, which aimed for novelty and practicality, and a reach towards the postmodern presentation of parallel narratives.

In some articles, the log wall is described purely through its material properties. The feel of the wood material creates a strong atmosphere in the

room and thus an undefined sense of nostalgia: *"The log wall creates a warm atmosphere "* *(Unelmien talo & koti, 11/2020).*

Emphasizing atmosphere can also be seen as recognizing the content of another important concept in conservation theory: integrity. The most typical perspectives of integrity are architectural, temporal, functional unity and continuity (Jokilehto, 2011, pp. 298–299). Unlike the conservation goals for valuable sites, home decorators often need only one dimension of integrity, such as a harmonious atmosphere. On the other hand, the exposure of logs can be linked to individuality, emerged with commercialization from the 1960s onwards (Sarantola-Weiss, 2009, pp. 54–55). Patterned by Mother Nature, a log wall is certainly unique.

In some of the homes featured in the articles, the character of the log was found to be too strong after the exposure. The phenomenon we call *taming* reflects an aesthetic relationship with the exposed log walls. Although the logs are desired to be exposed, their visual expressiveness is restrained by

Figure 3. In many cases, the article emphasises the special atmosphere maintained by the log wall. Meidän talo, 6/2022. Photo: Iida Kalakoski, 2023.

limiting the size of the exposed area or by placing minimalist furniture or white contrast surfaces alongside the exposed wall surfaces. "The rough brick and log surfaces are paired with clear ceilings and floors" (*Meidän talo,* 2/2021). With taming elements, the home renovator compensates for the stimuli produced by the log wall.

AUTHENTIC EXPERIENCE

The unveiling of log walls involves a kind of dedication to the building expressed through hard work (engagement, see Peters et al., 2020; Viola, 2022). The exposure is a task that many home renovators have done themselves, without professional help, thus the large and visible change in the house has been made with their own hands. In these stories, the removal of surface is often presented as a kind of extension of a condition survey. The logs found in good condition under the time-worn wallpapers serve in the stories as assurance of the house's good condition. The thinking is reflected in the following quotes:

> *The logs and ceiling beams were cleaned in a work party: 10 men and 10 angle grinders sanded all the logs from the intermediate floor to the ground floor in one day. After sanding, the logs were washed. Now they can live their own life and darken over time (Unelmien talo & koti / Meillä kotona, 28.2.2019).*

The French philosopher and professor Gaston Bachelard (2003, [1957], pp. 180–182) approaches the human's dedicated relationship with material or objects in his work "The Poetics of Space". He describes how the care conveyed through furniture polish and a warm woollen cloth enhances the human dignity of the furniture and brings it to life. A well-maintained object expresses order and creates continuity between the past and the present. Similarly, the human effort involved in dismantling, cleaning, and surface treatment can give a special significance to the exposed log walls. The recognized significance challenges the top-down rationality of Modernism, not giving weight to the resident's action for their own living environment (Sarantola-Weiss, 2009, pp. 58–59). The exposure of log walls can be seen as an approach where the resident's preferences are heard.

The added value created through one's own work is linked to the appreciation of log walls as demonstrations of craftsmanship, as in the following excerpt: *"The notches in the wall are magnificent work" (Unelmien talo & koti / Meillä kotona, 22.1.2016).*
The exceptionality of craftsmanship is a modern idea, characteristic for the

Figure 4. Sometimes the article emphasizes the great extent of work required for the exposure. In this case, the log wall was washed with a rotary brush washer. Meidän talo, 9/2022. Photo: Iida Kalakoski, 2023.

industrial age. The wall logs and the insulating materials between them form a rough texture that seems to fit the taste preferences of today's log house residents, even though it often does not match our ancestors' idea of good, presentable workmanship. Thus, today, pride is evoked by a surface that in another time would have been a shameful sign of living in poverty. The rise of modest structures as a marker of social status can be interpreted as part of the 20th-century industrial equality development, where "more" – in this case, wall coverings – loses its special status when it becomes accessible to the majority (Sarantola-Weiss, 2003, p. 102). The devaluation of abundance is also reflected in home decoration as a search for unspoiled originality, the log frame.

According to Pirjo Korkiakangas (2001, p. 75), log walls belong to those "later nostalgized things" that once were mundane and became later "sublimated" because of rarity and reminiscence. Until the 20th century, wood was not often valued as a material in Finland and was rather covered with other materials. Modernism changed the meanings evoked by log surfaces. Nowadays a massive log construction is rare, and therefore valuable. According to Korkiakangas (2001, p. 87), reminiscing about objects often involves the belief

that they worked well, "even better than newer 'substitutes' ". One feature of modernist aesthetics is the appreciation of "primitive" materials and leaving wooden surfaces uncovered. One contradiction related to the exposure of log surfaces is justifying the action with tradition and authenticity, even though its aesthetics stem from modernist ideas.

Finn Arne Jørgensen (2015, p. 3) has studied the appeal of small wilderness cabins and the internet diary sharing their images, Cabin Porn. Jørgensen has noted that the pleasure associated with viewing cabins is based on a nostalgic idea of the life of past generations being slower, simpler, and closer to nature, and therefore better.

Korkiakangas (2001, p. 97) refers to the nostalgia associated with reminiscing about objects, as being linked to the loss of cultural simplicity and familiarity, led to by industrialization, technological advancement, and urbanization. The exposure of log walls is about making nostalgia visible through hands-on work and the concrete modification of the environment. It brings to light a simple and understandable structure that seems to create a direct connection to the builders and residents of past generations. At the same time, the structure revealed from under the layers is perceived as healthy and atmospheric, almost like an extension of the forest, which is considered the primal home of humans.

Despite their appeal, logs are often also perceived as dirty. In addition to the comparisons mentioned earlier, various washes, sanding, and surface treatments performed on log walls can also be considered forms of taming. Some articles, for example, marvel at the resources used to achieve the desired result:

> The beautiful log surfaces in the dining area were revealed from under layers of wallpaper and lining paper. They were cleaned with a nylon brush and treated with tobacco-colored wood wax. Cleaning the walls alone took two days (Unelmien talo & koti, 11/2019).

The exposure of log walls is thus about the romantic aesthetics associated with the material. We interpret the exposure of log walls as a form of escapism: the exposed log walls reflect modern people's tendency to romanticize the past and its people, and the pre-technological way of life. Hands-on work is connected to log walls in two ways: not only are log walls interpreted as evidence of the craftsmanship of past generations but also, they will be exposed by simple craftsmanship of the resident her/himself, participating

in the building's narrative. Through the exposure of logs, residents deepen their relationship with their home and its meanings. Through the sacrifices made for the home, a person not only writes themselves into the building's history but also, through physical labour, scratches, and other memories, the building leaves its authentic mark on the person's life history.

AUTHENTIC STORY

Originality becomes influential only when it is accompanied by traces of earlier phases. Many descriptions of log walls focus on events that preceded or followed the carving phase of the timber, which reinforce the wall's place in the building's historical narrative. The following quote shows how the narrator emphasizes the storytelling elements of the log wall: *"The cottage was built in 1889 from trees felled by a storm. – – Messages of unfulfilled love can still be discerned in the darkened logs of the main room" (Unelmien talo & koti, 11/2020).*

Log walls are associated with both the ability to tell their own history and to share memories of previous residents. This brings us closer to the *documentary narrative value* generally associated with object history. Some articles illustrate how those dismantling the structures encountered various

Figure 5. In some cases, the rough surface of the log is equated with its long and eventful life. Unelmien talo & koti 11/2020. Photo: Iida Kalakoski, 2023.

histories of everyday life and scarcity: *"The surface renovation expanded into an archaeological operation" (Unelmien talo & koti / Meillä kotona, 21.7.2017).*

In the documentary role, the log wall becomes a tool for remembering. However, the value of the exposed log wall rarely appears solely as documentary but rather as part of a continuum, where the passage of time becomes visible. The presence of the log wall can give the resident a sense of belonging to a chain of generations: *"The logs of the old schoolhouse exude peace. Here, one understands their place in the world and feels part of a chain of generations" (Unelmien talo & koti, 1/2021).*

Another perspective on the narrativity of log walls is instrumental. In home decoration magazines, log structures are often mentioned in the headlines, and the images of the exposures are large and attention-grabbing. The log frame is described both in the main text and as key information in the building's fact box.

The appreciation of log buildings is culturally bound. In our material, the high status of log wall is evident in three ways. Firstly, logs are often mentioned in the headlines, introductions, or text highlights of articles if the old house is log-built. Secondly, if exposures have been made, they are often prominently displayed, often in the main image of the article. Thirdly, the exposures are placed in the main rooms of a building, such as the living room or dining room. Thus, log walls carry a special value that residents do not want to leave at the level of information but rather to bring it out for everyone to witness. Therefore, the status value of the exposed log wall can be seen as an instrumental feature, used to express the owner's power or other desirable qualities.

The log structures are presented in our material in a positive way, with only two articles taking a reserved approach to the subject. In one article, the hesitation occurred within the interviewed family: *"The exposed log surface caused discussion within the family" (Glorian koti, 5/2021).* In another, a tip article compiled by the editorial team, typical conservation theory guidance and protective attitudes towards the material were encountered: *"Think carefully before you paint log walls. Once painted, they cannot be restored. If you need a refresh, paint the ceiling or floor white. That will brighten things up!" (Meidän talo, 9/2020).* The almost unanimous positivity reflects the narrative style typical of home decoration magazines and indicates the high status of log frames.

Sometimes the value associated with a log wall is conceived as significant to the extent that home renovators end up choosing an imitation. One family built a new wall of recycled logs in an otherwise timber-framed house. According to the article, *"The goal of the change was to create a rustic romantic atmosphere, so many structural or stylistic elements had to be built from scratch"* *(Unelmien talo & koti / Meillä kotona, 28.1.2019).* In another example, a log wall was painted on a flat panel wall. *"Wow, what trickery!" states the headline of the article (Unelmien talo & koti / Meillä kotona, 18.10.2018).* Based on the articles, we conclude that sometimes imitations carry the same value as the original structure. The various log wallpapers produced by many manufacturers also point in this direction.

Based on our material, we state that home renovators consider the exposed log wall an authentic storyteller. At the same time, it is seen representatively as an object that builds the owner's identity. Unlike clothes or building facades, log walls are usually exposed only inside the building, in private, so the meanings associated with them can only be presented to chosen visitors. This is, of course, changed by the presentation of their private circles in home decoration magazines or, on the other hand, in social media. Nevertheless, the images evoked by the log wall are multifaceted and warm, and therefore residents are pleased to be connected to them.

DISCUSSION: ATMOSPHERE, PRESENTATION, OR PRESERVATION?

Conservation theory aims to create a theoretical framework for protecting and strengthening the values of built heritage. The material culture studies, on the other hand, examine the physical environment and objects created by humans and their relationship to them. Conservation theory can thus be seen as a special area of material culture, where humans reflect on their relationship, theorize, and choose methods for the maintenance of the physical environment to be inherited by future generations. Rationality is usually emphasized in the building conservation discourse. The official contexts avoid the expression of emotions to ensure the tone of objectivity. However, the appreciation of log walls involves not only practical features but also emotion and attachment.

The exposure of log walls illustrates the human relationship with their material environment, that is, how we are eager to conceptualize, modify, and control our built environment. The phenomenon also illustrates the

division of repair and conservation into at least three distinct fields. Two of the fields, highlighted in this article, are academically regulated conservation focused on special sites, and home renovation, reflecting "popular taste", as seen in home decoration magazines. Our article's research subjects are thus deemed interesting through publication in the periodicals. In addition to the conservation of monuments and the repair of private homes, the large volume of building stock, such as residential apartment buildings and public buildings, is mainly repaired from technical-economic perspectives, often overlooking questions of authenticity and atmosphere. The diversity of values in the entire built environment can be understood only by familiarizing oneself with all three of these repair traditions.

In this article, we examined how home renovators comprehend the log walls in their homes and the authenticity they represent. According to our material, home decoration magazines consider the exposure of log walls generally an acceptable and even recommended way to modify and update a home in an old wooden house. Through articles repeatedly presenting similar solutions, home decoration magazines seem to play a central role in forming and spreading meanings and trends related to home decoration and renovation. Our sample provides an illustrative picture of the extent, visual manifestations, and meanings of exposing log walls for their owners.

The appreciation of log buildings and the clear deviation of log construction from modern building practices were identified as the background of the phenomenon. By exposing old structures, the aim is to bring positive features associated with the past into the present and to strengthen the presence of a material considered healthy and traditional. Another side of the phenomenon is the material culture evidence and meanings that could tell their own story and history in situ but are lost with the disappearing layers. These lost values are rarely addressed in the material, as the genuine and original are always considered to be revealed from under the newer layers.

According to conservation theory, authenticity can be examined from various perspectives, such as: genuine old materials (originality), methods of design and construction or ways of use (continuity of heritage), traces or marks of historical events or phenomena (documentary value), patina (age, signs of the passage of time), and the coherent readability of the whole (integrity). In the material we analysed, not only can all these aspects of authenticity be identified but also, it can be argued, that home decorators are

rather motivated by the atmosphere created in the room when log walls are exposed, the experiential nature of the visible surface or the stripping phase, and the direct or instrumental narrativity of the exposed log surface. The home renovator's relationship with the log wall is personal and immediate. Thus, the exposure of the log wall is perceived to strengthen this authentic relationship, even though it may cause temporal messiness that weakens the integrity of the site.

Through the lens of conservation theory, the imagery of home decoration magazines juxtaposes fundamentally different perspectives. While conservation aims to protect its subjects with minimal interventions and material conservation, the focus of home decoration magazine articles is often on large and impressive changes, as well as the creativity and effort through which a beautiful and picturesque home is modified and built. The renovator of an old house, whose primary motivation is to create a cosy and meaningful home, focuses on the atmosphere, experientiality, and narrativity of the home. In such cases, the exposure of the log wall may be perceived as a strong expression of this, and more than mere awareness of the existence of various historical phases. However, if conceived as a conservation of the original construction phase, the exposure can be problematic. From this perspective, the mentions of "original log walls" in home decoration magazines are misleading.

From the standpoint of conservation theory, the perspectives of home decorators widen the conventional understanding. Since the 1990s, conservation theory has particularly sought to recognize the diversity of values in heritage, yet avoiding the step into the realm of experientiality. The pursuit of universal values has overshadowed personal feelings. However, built environment is the physical home of humans, and it is crucial for its preservation to recognize the different types of attachment to it. The broader use of methods from the study of material culture could help building conservation articulate the symbiotic coexistence of citizens and buildings. As an individual phenomenon, the paradox of the authenticity of log walls illustrates the conflict between the preservation of history, the presentation of history, and historical atmosphere.

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NOTES

1 This article is a translated, summarized and developed version from a Finnish peer-reviewed article entitled as *Autenttisuuden paradoksi paljastetuissa hirsiseinissä – Säilyttämisen ja vaalimisen esityksiä sisustuslehdissä vuosina 2017–2023* [The paradox of authenticity in exposed log walls – Representations of preservation in home decoration magazines 2017–2023] that was published in Finnish in a J@rgonia webjournal 21/42, http://urn.fi/URN:NBN:fi:jyu-202401291588.

THE HERITAGIZATION OF DIFFERENT BUILDING TYPES IN A FINNISH RURAL TOWN

Helena Teräväinen

ABSTRACT

Sustainability is supported by both cultural and aesthetic values, along ecological, economic, and social lines. This paper presents four heritage processes with the purpose of revealing heritagization differences in town planning over the past six decades, aiming to support cultural sustainability today. The study is applied to four different buildings in Lapua, a typical small rural town in Finland.

Lapua Cathedral, designed by architect C.L. Engel in the neoclassical style, was completed in 1827 and listed as one of the nationally important cultural heritage environments.

Vernacular houses in Ostrobothnia used to be two-storey, red wooden houses until the 1960s, but they were obviously too modest to be appreciated as cultural heritage. Lapua Town Hall, designed by architect M. Björklund, was completed in 1924 and nearly demolished in the 1960s, but the municipal council decided to repair it. Even though administrative buildings usually have been highly respected, seen as symbols of power, the architectural values of this building were not acknowledged until the 1990s when the first historical building inventory was done in the town. The latest building types recognized as having historical value are factories and other production buildings. The example in Lapua is the old cartridge factory from the 1920s, now known as Old Paukku, the culture centre. The conservation town plan in 1994 was not accepted by the municipal council, but the regional plan raised the value recognition, and it is now listed as a national-level heritage site.

The paper aims to compare how the heritagization of distinct building types differs in one town, as a case study, and through this it aims to support cultural sustainability.

KEYWORDS
Heritage, vernacular, classicism, heritagization, industrial

INTRODUCTION

This paper aims to present variances in the heritagization process in the built environment of the small, rural town of Lapua in Finland.

The Finnish Heritage Agency (FHA) states on its website that it accumulates, maintains, and showcases cultural and historical national heritage, and preserves, produces, and conveys information, but the heritagization process creates a lot of work for devotees, experts, and authorities on both regional and local levels.

Today, the national inventory *"Significant Built Cultural Environments on the National Level",* developed by the Finnish Heritage Agency (RKY, 2009), is accepted, according to Finnish Legislation (Land Use and Building Act, 1999), in the Government Decision on Finland's National Land Use Guidelines (2018) concerning the built cultural environment (RKY, 2009). When this inventory was created, all Finnish municipalities were able for the first time to make their statement on the list. Of course, there had been documentations and inventories on various types of built heritage before: in the 1990s, the so-called *Red Book*, published jointly by the National Board of Antiquities and the Ministry of the Environment, and National Important Landscapes, published by the Ministry of the Environment, were very important.

However, the inventories and listings on the regional and local level are still very diversified in terms of their completeness and extent. Appreciations of evaluations are changing continuously. Age and historical value were the first benchmarks. In the Western tradition, following *The Seven Lamps of Architecture* (Ruskin, 1849), the historical value and the age of a site have also been deeply tied up in Finland with sociocultural power in societies. For that reason, churches and castles were in the highest category, other administration buildings came after that. Because historical value was so important, the life and perhaps the place of birth, etc., of remarkable individuals were also considered to be extremely significant. Not until later in the 1990s did production sites and livelihood structures also become noticeable in the inventories.

However, most of the building protection efforts in Finland are based on, and carried out according to, the Land-Use and Building Act (1999), and in practice depend on planning. Land-use plans are created and ratified by municipalities and need the participation of various regional and local

authorities, citizen associations, and different organizations. In spite of the many citizen-participation possibilities, heritage processes are usually conducted by authorities, namely from "top-down", and not very often from "bottom-up", i.e., starting from citizens' movements.

The paper aims to illuminate and to compare the heritage processes of different building types, how they remained, and became built cultural heritage objects in a Finnish rural town. The results of the case study are assumed hypothetically, as examples to promote the cultural sustainability and cultural heritage.

At the end of the introduction, here are the most important weapons or tools in this research paper, namely the research questions, which are as follows:

A. How does the heritagization of distinct building types differ in the case study?
B. What kind of essential characteristics can be distinguished in the heritagization processes?
C. How can cultural sustainability be promoted using the findings?

THEORETICAL BACKGROUND

This chapter discusses the theoretical background, and the concepts used in the paper, starting from cultural sustainability, heritage and heritagization, cultural built heritage, and cultural environment (also known as "cultural built environment").

When we aim to impact the future, we can look back at the past, and it will inevitably show not only what was valuable enough to be preserved but also the reasons why. The concept of being valuable is used here in all meanings connected with sustainability and sustainable development, i.e., ecological, economic, social, and cultural values. Also, failed attempts to preserve some valuable cultural built heritage can be used to develop better arguments and prevent abortive dismantlement.

Avoiding demolitions of existing buildings should be seen as efficient, like all new attempts to reduce energy consumption in new building constructions, where we try to decrease carbon emissions and fight against man-made climate change. Re-use and sustainable design stand out as a global challenge for architecture as discipline, research field, academic program, practice, and

profession. Evidence for this assessment may be found in the proceedings of the International Union of Architects' (UIA) World Congress in Copenhagen, July 2–6, 2023.[1]

When it comes to heritage affairs in particular, the Finnish Heritage Agency is seen as the authority, and the academic research in this domain is using the concepts defined accordingly. In 2023, architect Iida Kalakoski encapsulated *cultural heritage* and *built or architectural heritage* in her doctoral thesis "Too Much to Handle – Architectural Conservation in the Widening Scope of Heritage".

Cultural heritage consists of resources inherited from the past, which people identify as a reflection and expression of their values, beliefs, knowledge, and traditions. Built or architectural heritage is a sub-category of this concept, which refers to buildings and built environments that are considered culturally, historically, or architecturally significant and worthy of preservation (Kalakoski, 2023, p. xv).

In the context of planning and land-use issues, the concept of *cultural environment* is used in legislation, as well in vocational and academic practice. Also well-established is the concept of *cultural built environment*, which refers to existing buildings and their surroundings in terms of their valuation, or perhaps their preservation. The concepts appear to change slightly in every project and state programme in Finland. In my previous papers, I have mostly used the concept of *cultural heritage*, even though the targets have been physical buildings, their surroundings, and the context of town planning.

Cultural heritage values have clearly been closely connected to *sustainable development* discourses for decades already. Since the 1970s, the notion of development has gradually shifted from a monodimensional, economically focused, and Western vision of development towards a multidimensional, co-evolving, equitable, human-rights based, and context-dependent approach (Labadi, 2019; Torggler *et al.*, 2015, p. 4). In this framework, harnessing cultural heritage can foster an alternative, culturally sensitive, inclusive, and cross-sectoral approach to development (Bandarin *et al.*, 2011).

In trying to achieve sustainability of cultural heritage values, the extensive literature (e.g., Torre, 2002; ICOMOS, 2013) usually refers to its uniqueness, its artistic, scientific, aesthetic, cultural, historical, educational, landscape,

and community values. Cultural heritage sustainability implies the evaluation of cultural, technical, economic, and environmental outcomes (ICOMOS, 2019), but if trying to ensure heritage sustainability in the economic sense, the greatest challenge obviously refers to the lack of funding, despite private or public ownership. So, the economic sustainability of cultural heritage is usually evaluated through the creation and maintenance of sustainable tourism development relevant for local communities (Pepe, 2018).

Soini and Birkland have analysed the discourse on cultural sustainability, using as data peer-reviewed scientific articles written in English and focusing on scientific discourse. They organized the discourse analysis around seven storylines, partly following Hajer (1995): diversity, eco-cultural civilization and resilience, economic viability, heritage, locality, and vitality. A story line is understood as a generative sort of narrative containing various categories, ideas, or concepts, which give meanings to specific phenomena. The storylines here are partly interlinked and overlapping, and of course they differ in contextualized aspects. Measuring cultural sustainability using these is similar to using semiotic tools and meanings of discourse. The complete discourse on cultural sustainability is, according to their research, not possible; instead, the discourse should be understood through those different story lines like a metaphor. Soini and Birkland wrote how the same event or the same concept has been described in diverse and perhaps conflicting ways (Soini and Birkland, 2014, pp. 213-215).

The concept of cultural sustainability is linked to sustainable development, but it differs greatly from the sustainability of culture, which relates to the maintenance of culture per se – of practices, beliefs and identity, including heritage, and the future existence of a given culture (Jelinčić and Glivetić, 2020). Heritage sustainability follows along the same lines, but public discourse seems to focus more on instrumental heritage values than on its intrinsic values. If we use the sustainability of cultural heritage in the sense of preservation for future generations, it can be difficult to balance harmoniously between cultural heritage and the people who would now like to experience it. Also, the concept of culture itself already includes the idea of changing in line with the time; it is not a stationary phenomenon, it is like a river – and nobody steps twice into the same river, as Heraclitus clamed 2,500 years ago.

The heritage process, or heritagization, refers to a process that turns objects, buildings, or phenomena into heritage (Kalakoski, 2023, p. xvi).

When the process of "heritagization" is seen as a cultural phenomenon, it takes place in the same dynamic and dialectic environment where the construction of culture itself comes into existence. And because this is part of the cultural system, the process entails both an individual and a collective dimension, and subjectivation as well as objectivation (Fontal, 2003). The collective memory belongs to a certain community, but the people of the community remember individually. Also, the cultural heritage environment, including both physical and verbal traditions, carries the memories that help the rememberers (Halbwachs, 1992; Teräväinen, 2006).

In the heritage-related framework, it is possible to talk about a constructive process denoted as heritagization. Consequently, nothing can be seen as heritage, but true heritage status is only acquired after a heritagization process. This process occurs as a series of legitimated symbolic universes (Berger and Luckmann, 1966, 2002); in other words, heritage is shaped as a set of meanings legitimized by the institution.

In trying to define different approaches to heritagization, the research follows Olaia Fontal and Carmen Gómez-Redondo (2015, pp. 67-72), who suggest that heritagization can be categorized as three different processes: legitimation, identization, and creation. In the following sections, these concepts are scrutinized in greater depth.

1. **Legitimation = Institutional Heritagization**: One of the principal agents in the construction of heritage is the collective, understood in an abstract and structured sense, i.e., the institution as an abstract personification joining several people who do not act as individuals in decision-making environments, but that comply with norms, customs, and values, and which have been abstracted and consolidated as the foundations of the institution itself.

2. **Identization = Cultural Heritagization:** One of the entities taking part as a significant agent in the heritagization process is the individual subject. In this context, we speak of identization as a discussion and a flow involving the individual and his/her environment. As Prats (2004) points out, however (and unlike in the previous case), here heritage is also used. Heritage assets have a contemporary value, in terms of the new meanings assigned to them, and they help individuals to give meaning to their present-day environment. Individuals, therefore, do

not empathize, they do not learn meanings, but rather they attribute them based on their experience and their sense of environment. Cultural heritagization thus contextualizes the cultural asset into the present.

3. **Creation = Community-Based Heritagization**: The third perspective, which focuses on heritagization from the community's point of view, approaches the autonomous, unguided creation of heritage assets. In this case, the emphasis is not just on bringing the population closer to cultural goods for consumption purposes, but also on encouraging people to shape by themselves their own cultural legacy by means of significant learning, and the retrieval of such an identity tries to define any given society.

RESEARCH METHODS

The research method selected here belongs firmly in the category of "Case Studies and Combined Strategies" among the Seven Research Strategies, which Linda Groat and David Wang defined in their book, Architectural Research Methods (2013). This is also qualitative research per se and of course contains logical argumentation.

Because the main research questions are *How?* and *Why?* Questions, and the researcher had little or no control over behavioural events, case-study research is seen as the preferred method in situations like the ones investigated in this paper. The focus is on a contemporary (as opposed to an entirely historical) phenomenon, in its real-world context (Yin, 1989/2014).

Case-study research aims to deal with cases rigorously and critically. A case can be an individual, a group, a class or an office, or it can be an institution, or several building-type examples as in this study. A case can also be a large-scale community, like an industry, a profession, or a town. Case-study research can also manage multiple cases in the same context, but this is not necessary.

A case study investigates the subject to answer research questions that may initially be loose and that seek a range of different kinds of evidence, disco-verable in the case's context. No one kind or source of evidence is suffici-ent or sufficiently valid on its own. The use of multiple sources of evidence, each with its strengths and weaknesses, is a key characteristic of case-study research. Another characteristic is that at the beginning there are no a priori theoretical notions, whether derived from the literature or not, because until

the data is there and the context is understood, it is impossible to know what theories or explanations would work best or make the most sense (Gillham, 2000).

A case study is basically an in-depth study of a particular situation; it delves into cases profoundly and conducts research from different viewpoints (Shuttleworth, 2008).

The aim of case-study research is to describe phenomena and make new perceptions, rather than to generalize or to find typical features. Usually, this research method is said not to be generalizable, but on the other hand, the widely recognized researcher Bent Flyvbjerg states that opinion to be one of the five misunderstandings about case-study research (2006). He argues that it is also possible to generalize based on an individual case and that, therefore, the case study can also contribute to scientific development.

The author had a more active role earlier in one of the cases, as she was holding public office and worked then as the main architect during the re-use process of Old Paukku in the 1990s. Also, City Hall renovations were carried out according to her instructions in the same time period. In fact, the author has been working and living in Lapua from 1984 until today and has had numerous opportunities to observe and to experience, as well as to photograph and take notes generally in the town. Archival research was carried out earlier in both public and private archives, including the local newspaper (Teräväinen, 2006), and is now being conducted focussing on the four examples in this research.

After leaving the office in Lapua, the author worked from 2000 to 2003 with regional planning and regional heritage programming, which strengthened and expanded both her experiential and scientific knowledge in the issues included in this research (Teräväinen, 2003). From 2006, the author has been working at Aalto University but still living in Lapua. The author is now in the position of an ordinary citizen, acting in the local cultural association Nurkkakivi, which has for about 25 years defended the conservation of the canteen in Old Paukku against several dismantling attempts and planning processes. But the fact that one has been an actor in a case does not mean one is unable to do research on that case; on the contrary, in this way a case study reminds of an action study – one can say the actor's or participant's knowledge is very useful and can reveal issues with so called inside knowledge. This

personal involvement requires critical reflection, both in role of citizen, as professional architect previously working in the town planning office, and as scholar making a case-study research including Old Paukku.

From the epistemological point of view, generally the research can have five different objectives:

1. to produce knowledge, which is needed in practice; here, the product is normally a report
2. to explain (*erklären*) or to understand (*verstehen*) its object
3. to develop better methods (technical knowledge interest by Habermas)
4. to interpret its object (hermeneutic knowledge interest by Habermas)
5. to aim towards societal objectives (emancipator's knowledge interest and critique by Habermas**).**

This research aims to follow two of these: German philosopher Jürgen Habermas's hermeneutic and emancipator's knowledge interests, and critique. The principal aim is consequently not only to describe but also to change the current policies and to enhance the understanding of cultural heritage.

THE FOUR CASES OR TARGETS IN THE STUDY

In this case study, the following four different building types noticeable in the townscape of Lapua are presented, and after that, their life history is scrutinized in the *Discussion* section in greater depth.

- Religious buildings
- Vernacular architecture: Peasant Houses
- Administration buildings
- Industrial buildings.

Lapua Cathedral dates back to the year 1824 and was designed by the architect Carl Ludvig Engel in the neoclassical style and completed in 1827.

In Finland, around 50 churches designed by Engel and his state office in Helsinki are still standing. The builders were descendants of individual local church builders. Architect Carl Ludvig Engel was born in Berlin in 1778, and in 1816, while working in Russia, he was assigned the task of designing the state buildings of the new capital Helsinki of the autonomous Grand Duchy of Finland.[2] Thus, the neoclassical or the empire style became widely known and also respected in Finland, impacting other, even vernacular buildings.
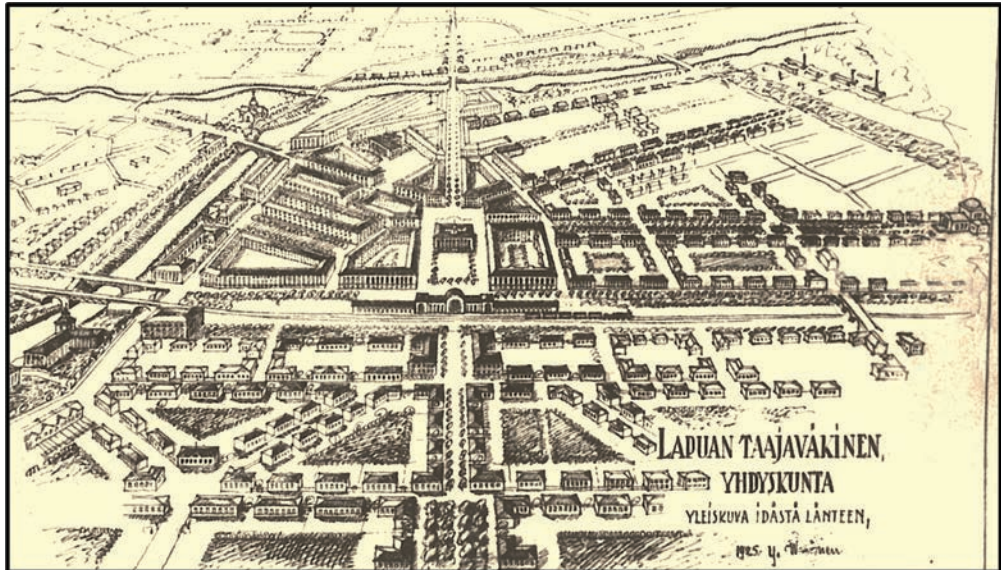
Figure 1. An illustration of Lapua made in 1928. The plan shows Lapua as a semi-urban community, like a small city. Original in Lapua Town Archives.

Figure 2. Lapua Cathedral was finished 1827. The bell tower is from 18th century. On the other side of Lapua river, in the right corner is a red vernacular building, Kosola house. Photo by the author.

Lapua Cathedral is protected by Church law and is also listed in the nationally important cultural heritage environments of 2009. This church is the fifth in the parish and is highly respected among people, who are exceptionally religious even today. The church and other religious buildings are usually viewed as heritage both by cultural and by institutional heritagization.

The typical peasant houses in Ostrobothnia, from the nineteenth century and later, are two-storey, wooden buildings painted red, containing some features of classicism on the facades. These vernacular houses were also common in Lapua until the 1960s, but now there are not many left. Obviously, they were expensive to live in and to repair, and perhaps too modest to be appreciated as cultural heritage objects. Unfortunately, the state did not support reparations either, and people were encouraged to build new, smaller houses and not to repair the existing, old buildings.

According to Kalakoski (2023), vernacular architecture is built outside any academic tradition, and without professional guidance, from local materials and based on local traditions. It tends to be utilitarian, timeless and, within a specific region, uniform. Local traditions are usually not isolated, and the academic architectural styles can slowly float into local traditions; thus,

Figure 3. Kosola house from the 19th century on the northern side of Lapua river. It is part of the same, state level important cultural heritage area as Lapua Cathedral, protected by BCH (RKY) 2009. Photo by the author.

neoclassical features appeared in Ostrobothnia during the nineteenth century. The building tradition was already threatened in the first urban plan in 1928 (Figure 5), but in 1975, Lapua actually obtained the first town plan, which totally ignored the old vernacular houses, and suggested instead three- to five-storey apartment houses; the plan didn't come to fruition, and only a couple were built. But many peasant houses on both sides of the Lapua river outside the actual town plan were ruined and have been replaced by modern housing.

Despite the fact that the vernacular house in Ostrobothnia has been research-ed and documented for many decades by the National Board of Antiquities and regional planning offices, the houses kept vanishing. Later, in 2003, the cultural environment programme "Lakiaa ja komiaa", created by the Regional Council of South Ostrobothnia, sounded the alarm bells; the regional and

Figure 4. Alajoki house from the 18th century is also located in the middle of the town, on the northern side of Lapua river and it is part of the cultural heritage are near the church, too. Photo by the author.
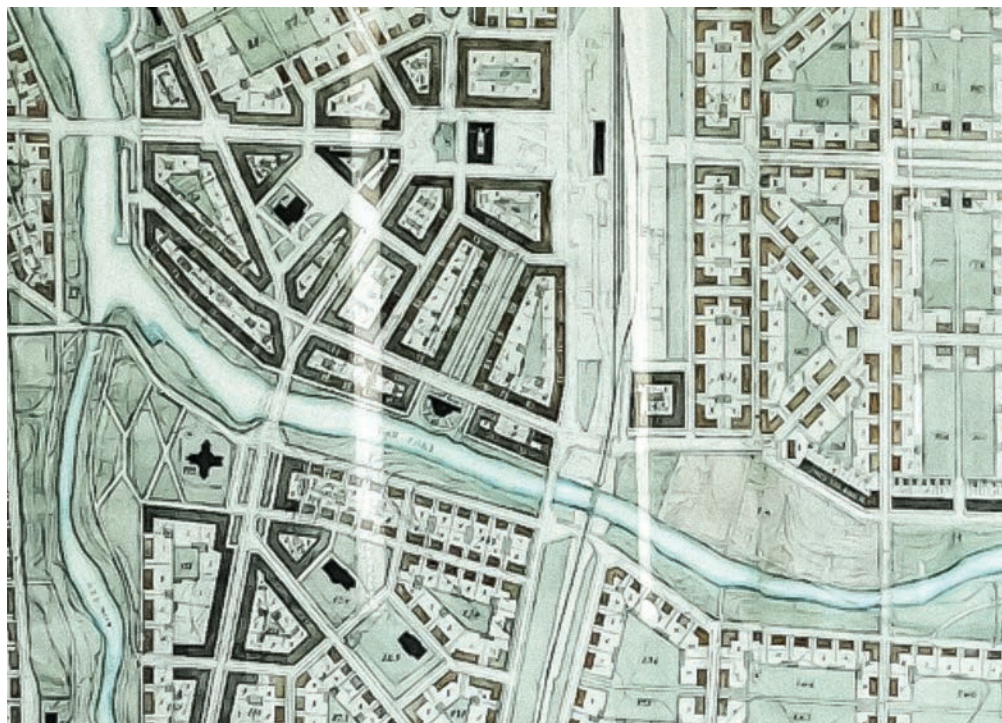
Figure 5. A detail of the first semi-urban plan for Lapua 1928. The row of traditional two-storey farmhouses along the river would be replaced by closed blocks. The illustration of the idealistic plan is in the figure 1. The original is on the wall in Lapua Town hall. Photo by the author.

local heritage is now more widely respected and the research is ongoing. However, today, two highly respected examples of old vernacular houses, Alajoki (Figure 4) and Kosola (Figure 3) are situated nearby Lapua Cathedral and are mentioned in the "Built Cultural Heritage" report (BCH 2009/ Finnish Heritage Agency & Ministry of Environment; State Land Use Objectives). Today, the vernacular peasant house is more accepted as a type than it was 50 years ago.

In history, the castles were strong representers of power; they remained solid over centuries and many of them became the first examples accepted as built heritage. Usually, other administrative buildings were highly respected too, seen as symbols of power. Lapua Town Hall was designed by the architect M. Björklund (later Visanti) in the style of 1920s classicism and completed in 1924. Lapua at the time was a rural municipality and was aiming to be a semi-urban community. The project was obviously a huge attempt by all circles, and thus the heritagization began right away (Ahmas, 1993; Mäkelä, 1985).
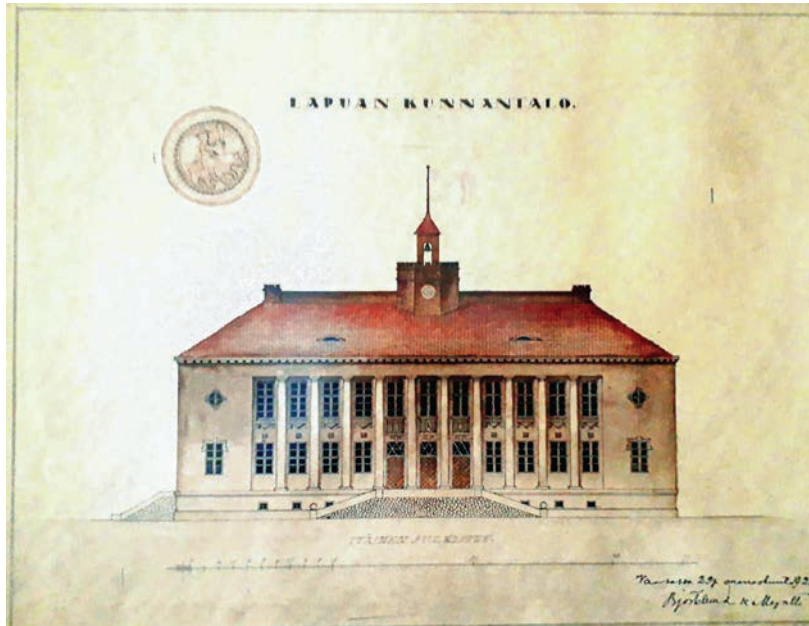
Figure 6. Lapua Town hall. The main façade toward the East. M. Björklund & Myntti, Vaasa 1921. The original is hanging in Lapua Town hall. Photo by the author.

However, initially, the building was not only for the municipal administration - there were also rooms for the local bank, who owned 40% of the building, the local library, and the district court. There was also room for the local police and a jail. A restaurant was located in the left corner on the first floor (Figure 7) The council chamber is on the second floor (Figure 8).

In 1961, it was noticed that the foundations of the building were failing, and the municipality even considered demolishing it and building a new town hall. These kinds of decisions were common at the time in small Finnish towns, but the municipal executives of Lapua decided to repair it by driving piles deep into the ground. The construction works came to fruition in 1966. In 1964, plans were displayed to extend the building inside by making the council hall two storeys high and bringing the attic into use, but these drawings by the consulting architect Veijo Martikainen from Helsinki remained hidden in the archive. The minutes of the commission show that there were actually three alternatives: 1) to repair the town hall; 2) to dismantle it and replace it with a new building; and 3) to dismantle it and build a new town hall in a different place. In discussions, the main argument against it was understandably the expense, but the possible changes in the

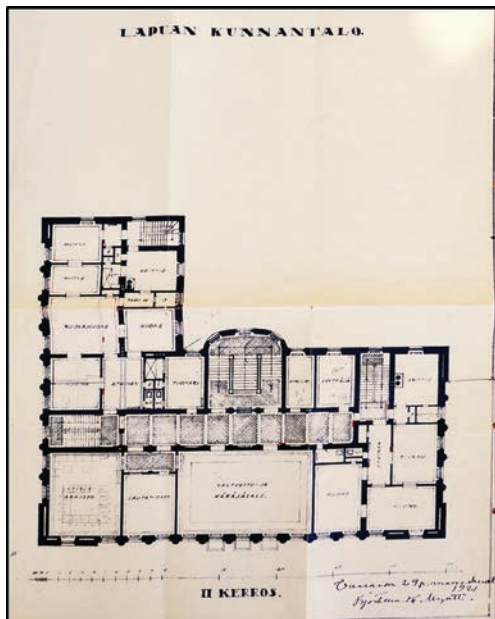Figure 7. Lapua Town hall 1st floor. Originals in Lapua Town Archives. Photo by the author.

Figure 8. Lapua Town hall 2nd floor. Originals in Lapua Town Archives. Photo by the author.
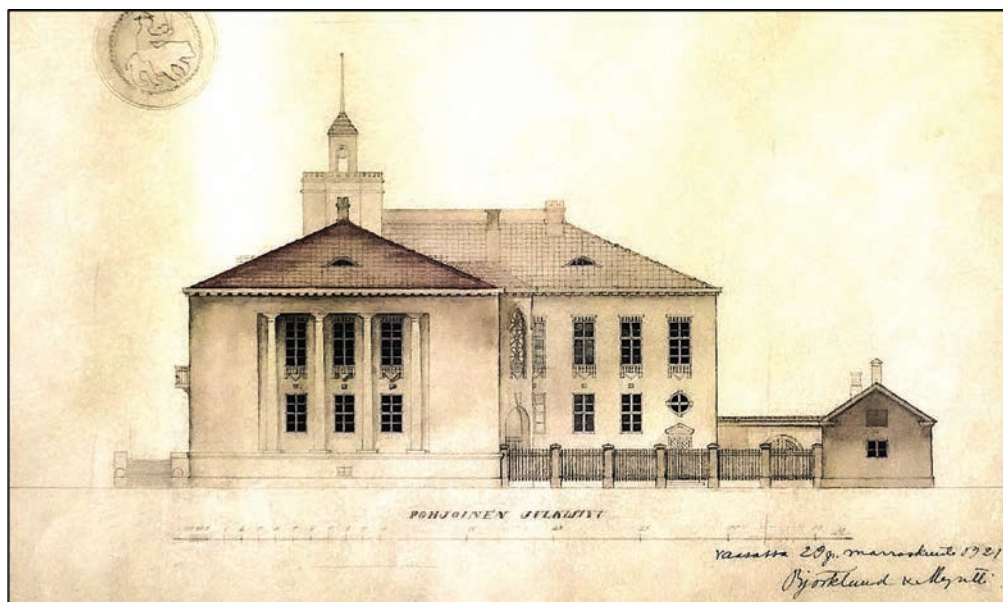

Figure 9. Lapua Town hall. The Northern façade. M. Björklund & Myntti, Vaasa 1921. The original hanging in Lapua Town hall. Photo by the author.

town plan were seen to be difficult, and the building per se was viewed as valuable, because it was possible to repair. A remarkable note can be found in the minutes: *"Lapua Town Hall has been the most representative of its kind in Nordic countries"* (Lapua Town Archives).

The next time the building was compromised was in the new town- and general plan for 1964–1976 by the architects Ahti Korhonen and Erik Kråkström (Figure 11). The aim of the plan was to modify "the village into a city". The plan presented a huge extension and even made it possible to dismantle the building. Other old buildings like the fire station (Figure 10), some outbuildings, and an old bus station (Figure 12) disappeared, but the town hall stayed without extensions (Lapua Town Archives).

In accordance with the new town plan, a modern-style bus station was built in 1967. It was admired and claimed in the newspapers to be the most modern of its kind in Finland. Later it became recognized as a most remarkable example of modernism in the region and was mentioned together with Lapua Cathedral in an architectural guide (Salokorpi, 1979). However, the value of modernism was not widely recognized in the town, and the municipal council wanted to offer the space to the biggest commercial operator in southern Ostrobothnia, and started to change the town plan in 1998, and the bus station building could not be saved. The bus station did not gain the acceptance of the municipal council, even though 2,000 citizens defended the market square and the station building. The local cultural heritage
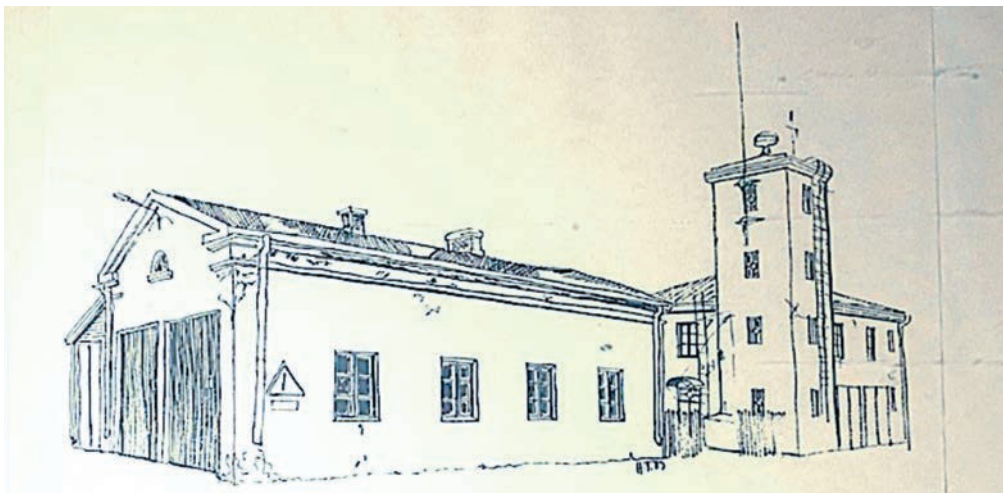

Figure 10. The old Fire Station vanished 1989. Drawing by the author.

association resiliently fought for its preservation, and the Finnish Heritage Agency also recognized the building as a valuable example of modern architecture. However, their first statement used the term "brutalism", which was clearly totally misunderstood by the political powers, and the building was dismantled in 2015 (Teräväinen, 2017; 2018).

The 1999 town plan finally contained the protection mark for the town hall, although the modern bus station would be lost. Even though the town hall had dodged the bullet (demolition) many times, and inside the building massive renovations had been carried out, the architectural style or values were not actually written down until 1993, when the first historical building inventory of Lapua's downtown was published (Ahmas, 1993).

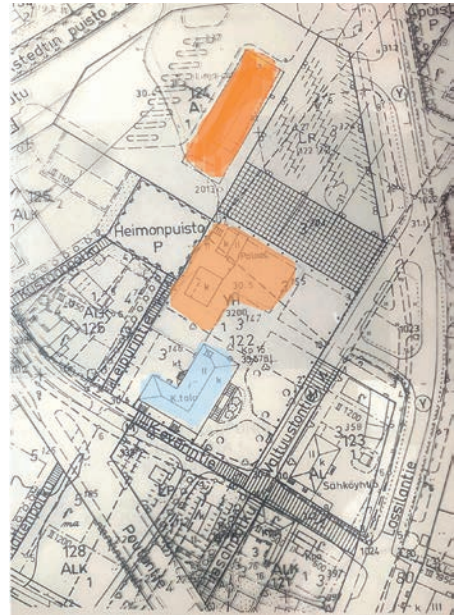The most recent building types recognized as having historical value have generally been facto-

Figure 11. The town plan 1976, Town hall marked in blue, its planned extension and the site for the bus station are marked in orange. Lapua Town Archives coloured by the author.

Figure 12. The modern bus station building 2012. Photo by the author.

ries and other production buildings. An example of the industrial built heritage in Lapua is the old cartridge factory from the 1920s, now known as Old Paukku, the culture centre. The factory area was before totally closed, and unknown as a built heritage site. The municipality acquired the ownership property in 1992 and the site was documented and renovated for another use between 1995 and 2005 (Teräväinen, 2006).

Figure 13. Lapua Town hall in August 2024. Photo by the author.

The first town plan in 1994 with conservation marks was not accepted by the municipal council, even though the re-use design and building was already going on. This has some connection with the strong municipal sovereignty: the local administration was sceptical about all kinds of protectional planning, preventing the decisions made by the state authorities and keeping the power in the municipality. At the beginning of the twenty-first century, the regional plan and the cultural heritage environment programme developed by South Ostrobothnian Council raised the value recognition, and Old Paukku ended up being listed in the "Built Cultural Heritage" report by the Finnish Heritage Agency and the Ministry of the Environment in 2009.

After several phases, a protective town plan was accepted in 2008, but one building in Old Paukku has continued to be threatened with being demolished. The workers' canteen (Ruokala) from 1924 is wooden and none of its reuse or renovation plans have been accepted. The municipality has tried several times to rezone and then dismantle the building, so far without success.

Figure 14. The old cartridge factory was a closed area, only workers were allowed to go inside the gates. Photo by the author.
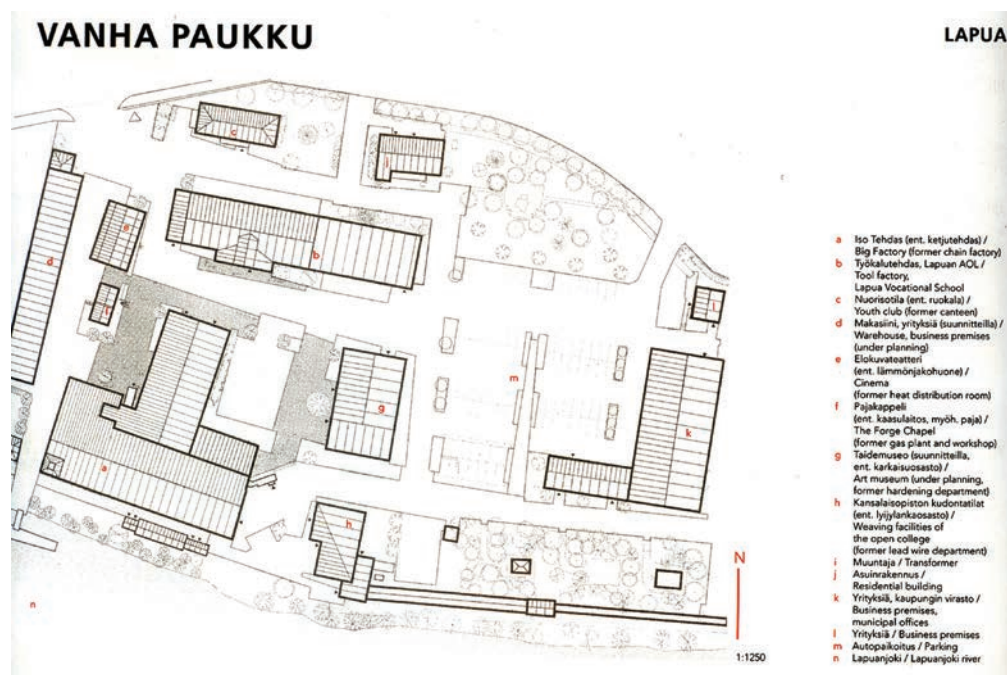

Figure 15. The site plan of Old Paukku in1999. Lapua Town Archives.

The workers' canteen is an important part of the Old Paukku area and its history. The building has important, different kinds of heritage values, including tangible values, because the material and the method of construction are different from other buildings belonging to Old Paukku. Most of the buildings are of brick but the canteen has a timber-framed structure, which in the 1920s was a new kind of construction. There are strong, intangible values connected with the history of the place and the activities there. The industrial history in Old Paukku should retain the social history of the canteen as first being a place for the workers' assembly and later, in the 1990s, as a youth café. Its history is an important factor for the identity of the place: the use, the memory, as well as the topography and impressions, economic, and social activities. Some special properties relating to past events and present consequences are connected to a certain location. The canteen is important for the townscape; its current situation along the street protects the courtyard, and the building figurine is important in the street view. The canteen and the Latomäki building on the other side of the street constitute a pair and are important landmarks on the street (Teräväinen, 2020; 2022).

Figure 16. City Library was opened in Old Paukku in 1997, next year were Music Hall and Art Schools completed on the second floor in Big Factory. Photo from Lapua Town Archives.

It is of course possible to document and conserve the history and construction of buildings, even if the buildings have been demolished or moved away. Collecting memories with photographs and through storytelling are ways to conserve a building's history, even if the building has disappeared. But if we are seriously concerned about climate change mitigation, the building should be repaired, because an existing wooden building is always a usable carbon store. Also, economic values should be calculated for usage, and not only by considering the renovation costs without their possible benefits. This is very difficult, because the municipality, the owner of the Old Paukku buildings, does not have any plans for the future use of the building.

According to the regional museum authorities, the weightiest reason for dismantling the canteen was stated earlier when Lapua town was planning to replace the canteen with a timber school building. The museum argued that the canteen would lose its authenticity, because it had been evaluated as being in such bad condition that too many parts of it would have to be replaced, and almost the entire building would have to be reconstructed and thus be almost new. But as already explained above, authenticity should also be defined by other factors, not only materially, and it is also possible to achieve this by using

Figure 17. A view from the main building to the courtyard. On the left are Forge Chappel and Bio Marilyn. A white corner with two windows of Workers Canteen is seen in the back middle. Photo by the author.

traditional techniques and taking the aim and the context into consideration – in other words, the identity of the place. By moving another building from a different place into Old Paukku to compensate for the canteen, there will be a more significant loss of authenticity values, because the building type, the construction, and the use will not be authentic anymore. Compensation would have a huge negative impact on place (Teräväinen, 2022).

DISCUSSION

Old Paukku and all its buildings represent a very interesting case when thinking about different heritagizations. This section aims to further explore the four previously presented cases. The three distinct types of heritagization introduced can be identified in these building cases from a small town in Finland. Another interesting purpose, and self-evidently more important in the current global situation, is the sustainability of the processes and the state of the climate today.

Institutional heritagization or legitimation in Finland used to be the common, almost the only way that an object could be evaluated as "heritage". In the context of the built cultural heritage or the cultural environment, which are the viewpoints here, the power relations have changed in the period under review in this research paper, and so too have the conceptions about "heritage" in a broad way and cultural built heritage intrinsically. In Finland, the most powerful way to declare something as "heritage" used to be the decisions of the Finnish Heritage Agency (previously the National Board of Antiquities), and if the decision was not to be protected in accordance with the Building Protection Act (68/2010)[3], the municipalities understood the example not to be part of the heritage. In the 1990s, the interpretation changed, becoming more comprehensive and regional, and local views

Figure 18. The four different building types: religious buildings, vernacular architecture, administration buildings and industrial buildings. Photos by the author.

became appreciated too. The planning instrument generally, and thus the local decisions, have been the most powerful in dealing with the built cultural heritage. If urban planning was in accord with the Land Use and Building Act (2000), a strong claim on communication, also top-down and bottom-up could be approached, but still the decisions on the cultural built heritage at national level were made decisively according to BCH 2009.[4] The Land Use and Building Act is now undergoing reform and while still promoting the cultural environment, the power of decisions is obviously given more at the local level, i.e., by the municipal planning. This brings the built cultural heritage at risk in a new way.

In the definition in *Theoretical Background* (Fontal and Gómez-Redondo, 2015, p. 67), the principal agent in "Legitimation" is the collective, but instead of people just acting together, they "*understood in an abstract and structured sense, i.e., the institution as an abstract personification joining several people who do not act as individuals in decision-making environments*", and the values consolidated as the foundations of the institution itself.

The strongest process of the institutional heritagization is signalled in church buildings, and in this case especially in Lapua Cathedral, which was built at a time of very strong authority of the state Church and the state central government in Finland. This case example has been valuable from the beginning, and the laws and planning instrument have accepted that to be true and without any indecisiveness. Also, the example of industrial buildings obviously proves that the legitimation is important, but the process in the 1990's when Old Paukku was changed and partly rebuilt for the new purposes started in a local way, without any notices from the heritage institutions. Later, after 2009, when Old Paukku was listed on the state level as an important cultural heritage environment, the legitimation became more important in the ongoing processes, because the subject was very wide, not a singular building.

In defining *Identization as Cultural Heritagization*, Fontal and Gómez-Redondo (see also section *Theoretical Background*) see the individual subject as important. They clarify the term "identization" as working like a discussion or a flow, which involves individuals and their environment. They see it as important for identization that the heritage is used, and this has been the case in all the examples in this research. However, the use and the flow between the individuals and their environment did not become powerful enough here to make the conversation or restoration always important.

The Cathedral and the Town Hall have been important and valuable among people, and so they have been sustainable, even though the concept of sustainability was not used or even heard of before the 1990s. The Ostrobothnian two-storey peasant house was also valuable and important until the institutions, such as the state and the municipality, did not recognize it as valuable in terms of state financial aid or planning decisions, as in the Lapua master plan of 1964–1976. The red peasant house was apparently so common that the recognized type was not identified in its variations in different environments. Regional planning authorities published a guidebook about the Ostrobothnian house in the 1970s, but obviously the knowledge didn't get through very efficiently (Härö and Kaila, 1975). The densest and most extensive villages were documented and mentioned by the National Board of Antiquities in the 1960s, but a book about Finnish rural villages was not published until 2000 (Kirveennummi and Räsänen, 2000).

For understanding Old Paukku – a former industrial area – the new meanings later assigned to it as a cultural centre with a library, music school, and a place for art for everybody, helped individuals to give meaning to their current environment, even though there were important historical and even architectural meanings, and the identity of the place was connected not only to the ammunition industry but also to World War II and a serious explosion accident in 1976. People know about those events, but they also characterise the place based on their own experience and their sense of environment; thus cultural heritagization is ongoing and contextualizes the new cultural assets (Teräväinen, 2006).

In defining *Creation = Community-Based Heritagization*, Fontal and Gómez-Redondo (see also section *Theoretical Background*) open up a third perspective, which focuses on heritagization from the community's point of view, and which means unguided, almost autonomous creation processes of heritage assets. Here, they explain that the emphasis is not just on bringing the population closer to cultural goods for consumption purposes but also on *encouraging people to shape their own cultural legacy*, by means of learning and remembering and defining their own culture, not just the predominant culture in society.

The community – people in Lapua and their organizations at the time – built the Town Hall together, and they saved it together, twice, even though the architecture in itself was not seen as important. The building has been very

important for the people – perhaps a little scary for the ordinary people but valuable for those who worked there, as well as for the elected, decision-making politicians.

In 1999, the politicians *did not see the Town Hall and its environment specifically as a built cultural heritage site.* They decided to sell the market square with the bus station, which was an important example of modern architecture, and planned the site for a new large supermarket. Today, as Lapua Town Hall turns 100 years old, it is enjoying a lot of different kinds of jubilee celebrations; it is seen as an important cultural built heritage in the community and esteemed also as a regional important cultural built heritage.

Community-based heritagization can also be seen in other examples in the research, but the precise period in the other heritage processes cannot be distinguished here. However, all four case examples presented in this research paper are accepted today as cultural built heritages and part of the cultural heritage environment. Small exceptions can perhaps be seen with the larger heritage entities: in Old Paukku the municipality doesn't accept the workers' canteen as an important part of the cultural built environment; thus the building is not kept in good condition and the town has rejected the idea of restoring it for almost 25 years. Now (2024) the regional museum in Seinäjoki (as a part of the regional administration of the FHA) has almost agreed to it being demolished, because they have strangely concluded that the authenticity of the building would disappear, because the needed reparations would be so wide-ranging and impactful (Teräväinen, 2022).

In 2003, the Regional Cultural Heritage Programme organized many workshops around South Ostrobothnia. In conversations, participants started to envision the Ostrobothnian peasant house as a phenomenon: the form and red colour made the type recognizable, even though the size and the particulars were differentiated. The traditional lifestyle attracted interest and was seen as cultural heritage, mostly intangible, but seen together with the traditional house the cultural heritage became tangible too. The grandiose idea came into being: how could the Ostrobothnian peasant house be placed on the UNESCO World Heritage list? This was the start of more seminars and research projects – for example, the Ruralia Institute of Helsinki University. Because Finland and Sweden have shared many centuries of history together, the fine, decorated farmhouses in Hälsingland were well known and their status on the UNESCO 2012 list inspired more enthusiasm for the research.

In 2016, the Ruralia Institute published Great Ostrobothnian Peasant Houses, where traditional building and its powerful impact on sustainability is high-lighted (Mäkelä and Riukulehto, 2016).

Community-based heritagization, when people have created something together, could be seen as the most powerful element of sustainability, not only as culture or heritage (Jelinčić and Tišma, 2020). In Lapua, some improvements have recently become apparent. The two important rural farmhouses that are situated on the opposite side of the Lapua river near the cathedral are both kept in good condition and in line with tradition. Alajoki house is the oldest building in the town centre but is still in private use. Kosola house has a more colourful history, and after housing the Herättäjä bookstore for many decades, it is now a tourist attraction offering both cultural and commercial services. The building has recently been renovated in a sustainable fashion using traditional materials. Kosola house has recently received the ECEAT[5] certificate. The European Centre for Ecological and Agricultural Tourism declares on its website that it is the leading European organization in the field of small-scale sustainable tourism, with special attention given to rural areas and organic farming.

CONCLUSIONS

At the beginning of this paper, the author presented the research questions, which will be answered after introducing examples of the four building types from the section *Four Cases in Research* and discussing them using the theoretical concept from the section *Research Methods*.

A. How does the heritagization of distinct building types differ in the case study?
B. What kind of essential characteristics can be distinguished in the heritagization processes?
C. How can cultural sustainability be promoted using the findings?

As stated in the previous section, the heritage processes were all different, but some similarities can be found, as shown in Table 1.

In Table 1, the four examples in this case study are shown in the second row, with the building type or the typology of each one in the first row. The construction year, or the estimated year, are in the row below the names. From the left in the cells, are the three types of heritage processes using Fontal and

			Religious Buildings Lapua Cathedral	Vernacular Architecture Ostrobothnian Peasant House	Administration Buildings Lapua Town Hall	Industrial Buildings Old Paukku
Construction year			1827	ca. 1800-1920	1924	ca.1912
The Community Based Heritagization as Creation			People very Religious	Important in 19th century 's People/ families	Important for citizens1924 → now not open	1976→Accident 1992 → purchase by Lapua town
The Cultural Heritagization or Identization			Important architecture from start	Destr. planning 1964–1976! Better in 21st century	1994 listed as an architectural target	Change: 1996 open Culture Centre
The Institutional Heritagization or Legitimation			1827 State and Church protect	2009 RKY BCH examples Alajoki and Kosola	1999 town plan protection	2009 → protection RKY (BCH)
The Owner			The Parish	Private	The Municipality	The Municipality
Cultural Sustainability			**Strong**	Developing examples → **Strong**	**Strong** ⇨ weakening	**Strong-** But Canteen in danger

Table 1. Comparing the different heritage processes using the concepts by Fontal and Gómez-Redondo.

Gómez-Redondo from their article "Heritage Education and Heritagization Processes: SHEO Methodology for Educational Programs Evaluation" (2016). They used the three heritagization types in evaluations of certain educational processes. In this research paper, those are taken to clear up longer processes that describe the different phases of the heritagization regarding four types of cultural built heritage in Lapua. The time period of the observations is actually 40 years – in other words, the time the author has lived and partly also worked in the town. However, the history of examples extends back two centuries, and as a result, archive research is also used. This case study does not actually deal with educational processes directly, but without doubt the long periods of heritage processes elsewhere include similarities to the educational processes. The concept of heritage identification includes a lot of research and documentation, and introductions and learning – that is to say, the same features and processes as actual educational processes.

This case study proposes that heritagization is an educational process in the community. The process has usually been seen as guided top-down – in other words, from state level towards actual operators like municipalities and the people. Also, today the subjects of the cultural built heritage that

are recognized as being important on the state level are obviously the most carefully protected targets.

The table reflects how the religious building in this case study was handled as an important built heritage and protected through the process of *Institutional Heritagization or Legitimation* from the beginning. However, recently in Finland many modern church buildings have become endangered if the local parish lacks money, because in many places a lot of people are resigning from the church. The two other heritagizations, identization and community-based creation, have grown later, and the church in Lapua is highly respected and has a wide range of different uses by the people.

The construction of Lapua Town Hall, on the other hand, was a great joint effort by the people and the municipality. It could be argued that the *Community-Based Heritagization as Creation* had already started in 1923, when the citizens decided to build together the town hall, even though Lapua at the time was a rural municipality, although aiming to grow into a larger "populous community". The cultural heritagization obviously came through in the first built heritage invention (Ahmas, 1993). Invention happened later, and the town hall is now accepted by all. The legitimation or institutional heritagization was accomplished in the town plan of 1999, when the building was marked as a protected building. Now being more than 100 years old, the Town Hall is appreciated by people, but because it is almost closed to other than a few office workers in the building, it may be losing something of its community-based heritage value.

The industrial buildings of Old Paukku experienced heritagization in a different order. The *Community-Based Heritagization as Creation* obviously started in this case first: the factory was very important to the people as a huge workplace from 1923, and later the terrible accident in 1976 traumatized the whole community (Teräväinen, 2006; 2010). The next phase of heritagization, the *Cultural Heritagization or Identization*, started when the place became open for all as a cultural centre. The third phase, the *Institutional Heritagization or Legitimation*, began in 2009 when the place became a cultural heritage on the state level, and accordingly the town plan protected it. Unfortunately, the process has not ended: the municipality is aiming to change the plan and to dismantle one of the historical buildings, the workers' canteen (Teräväinen, 2020; 2022).

Old Paukku includes many separate buildings, which mostly are in use by culture or leisure activities by the municipality or let out to businesses. The Workers' Canteen is the only one that is left without any use or any repairs, now for 25 years. No social historical reminiscences from the industrial era, nor the years when the building was an open youth café at the end of 1990s, have been valuable enough, when the municipality decided to reduce the amount of publicly owned buildings, blaming heavy taxation. Any new use for the canteen was not imaginable, and the technical sector started the demolition process, which was not accepted in 2000, but instead became a very complicated planning process. This example indicates how dangerous is to leave a building without any use or maintenance, and how municipalities in that way are able to endanger the cultural built heritage even when it is important on the state-level.

The Ostrobothian Peasant House is an important symbol for the identity of the area and people living here, but only a few of those examples have been listed at state level as important cultural heritage in the region. Kosola and Alajoki are situated in the area that includes the cathedral, and consequently the *Institutional Heritagization or Legitimation* concerns them. These two houses have been preserved through centuries because they have been in use, inhabited and in trade activities, also indicating the impressiveness of the community based and cultural heritagization. The heritagization of the rural peasant house as a type itself is ongoing, using institutional and scientific research, as well as new kinds of business strategies.

The concept *Cultural sustainability* was presented in the section *Theoretical Background* following Soini & Birkland (2014).

They organized the discourse analysis around seven storylines, partly following Hajer (1995): diversity, eco-cultural civilization, resilience, economic viability, heritage, locality and vitality. Cultural sustainability was presented more as a metaphor than as a clearly measurable phenomenon, hence not all seven of the storylines have an influence in this research paper, and they are not scrutinised in these conclusions.

The cultural sustainability in this case study is most closely connected to *cultural heritage* via the heritagization. *Cultural vitality* is connected with cultural services, and how the built heritage is in use for cultural services, which then strengthen the cultural meanings and create new ones. The built

The Church has been a heritage always – and safe! *Institutional, Community Based, Cultural Heritagization*	**Vernacular Architecture** *Cultural heritagization growing*
The Town Hall *Community Based and Cultural Heritagization*	**Industrial Buildings** *Community Based, Cultural and Institutional Heritagization*

Table 2. How did the heritagization of distinct building types differ in the case study.

heritage is better preserved by cultural use, as happened in other buildings in Old Paukku Culture centre than in the deteriorating, closed workers' canteen.

The story line of *cultural diversity* came up more in the context of urban planning and development, than in relation to multiculturalism and ethnicity. *Locality* is closely associated with cultural diversity in this research, which actually compared four local examples and their heritagization.

Eco-cultural resilience focuses on ecosystems and seeks a balance between humans and nature. *Eco-cultural civilization* refers to an ecological turn of the values and behaviour of people. Both these story lines in the cultural sustainability are growing more important and the importance of cultural aspects in achieving the overall aims of sustainability is emphasized, but here in these local examples they were not emerging, and still seem to be connected more with scientific discussions and national level policies.

In the table 1, all four example types are presented to be *strong* in the cultural sustainability. Even the typical Ostrobothnian Peasant House has become more sustainable in the ongoing research, because people are more interested in the phenomenon, and more vernacular houses are renovated every year. Lapua Cathedral is all the time kept in good condition, and for example, last summer visibly large repairs were carried out, and decayed logs in the southeastern corner were replaced with new ones. Lapua Town hall is continuously maintained carefully. The culture centre Old Paukku is actively used by citizens of all ages: there are the library, adult-education centre, art and music school, art museum, a fitness centre, as well as other commercial

services. The church and the culture centre are open for everybody, and the citizens see as their own places. The town hall is not open for everybody anymore, and some public services have been moved into Old Paukku. This can weaken the cultural sustainability of the earlier so important public building.

However, the sustainability claims are not accepted by the users and owners in all example cases, because the canteen in Old Paukku is still empty and under risk of vanishing from the national level as an important entity. According to the examples in this study, cultural sustainability needs more communication and different voices. The discourse of the economic shortage is too strong in municipal decision processes concerning heritagization and conservation in urban planning. The discourse of sustainable development is still rather weak, and the energy efficiency in new buildings is usually more highlighted than the possibility to renovate, reuse, or conserve existing buildings.

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NOTES

1. See: https://uia2023cph.org/wp-content/uploads/2023/06/PROGRAMME-SESSIONS-JUNE-V2.pdf

2. Finland was an autonomous state ruled by the Russian Empire from 1809 to 1917.

3. Repealed 2010 by "Act on the Protection of the Built Heritage 498/2010"

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ARCHITECTURAL DILEMMAS IN GOTHENBURG
Professions and politics in the design of areas of national importance in cultural heritage policy
Magnus Rönn

ABSTRACT

In 2016, the Gothenburg city organises a design-developer competition. The site is in the centre of the city, close to Götaplatsen, which is the most significant place in Gothenburg. The following land allocation agreement established in 2017 requires the developer to carry out a parallel assignment for the new design. The developer then invited design teams to compete a second time. However, the architectural offices behind the winning design in the 2016 competition were excluded and could therefore not take part. This is the first critical dilemma in the plan and architecture project. The winner in this parallel assignment is a design team including the same architectural firm that reviewed the design proposals in the first competition. This is the second dilemma. There is a business relationship involved in the process, challenging the ethical code of conduct adopted by Swedish Architects.

After the jury singled out the best solution for the assignment, a new political majority stopped the architecture from being implemented in 2023 due to the design (lack of a classical style) and the choice of the urban design in the contribution (lack of a closed block). Instead, a brand-new solution must be drawn up. This is the third critical dilemma accomplished by a specific policy for architecture and urban design. The rules of the game have been changed.

The findings show how ethical principles intended to steer professional actors have been overrun by politicians demanding a specific architectural style in a different urban form. In this case, the city is acting in the combined plan and architecture project. both as a landowner and organiser of a competition, a co-organiser of a parallel commission, and an authority responsible for the detailed development plan allowing a new use and design of the site.

KEYWORDS

Critical architectural dilemma, Competition, Parallel commission, Cultural value, Architectural quality, Profession, Politics

INTRODUCTION

The location for the story is strategically located in the inner city of Gothenburg in Sweden. The plot is used for parking and will be given new content with housing and businesses. The site is a part of the national heritage interest run by state authorities and regulated in the Environmental Code (Ch. 3, § 6). The National Heritage Board has singled out the inner city as a cultural environment of national interest for protection and preservation (RAÄ, 2024). The park in the area is also seen as a valuable environment by the city, including a theatre, a city library, and a hotel. They are protected in the local preservation program. The power over the site and its cultural environment is shared between the city as the local planning authority and the county board as the state's representative with the task of safeguarding areas of national heritage interests. The County Administrative Board must disapprove detailed development plans that risk significantly damaging national interests. What constitutes tangible damage is a rule in the law that, when applied, must be interpreted in a specific context. In the area, several strong interests meet that want to make their voices heard. For this reason, the design of the plot in Gothenburg turns into a key issue involving several critical dilemmas. Solving the design problem on the site becomes an issue with strong ethical principles, which is highlighted in the article. The ambition is both to make these critical dilemmas visible and to describe the decisive stages in the plan and architecture project.

The story begins with an open design-developer competition organised by the city through the real estate board. The criteria for judging proposals on the site included both urban design qualities and land price. The competition was followed by a parallel assignment with four invited design teams (Göteborgs stad, 2016a; Göteborgs stad & Serneke, 2020). This assignment was arranged by the developer, Serneke, in collaboration with the city and Swedish Architects. Serneke is the building actor behind the winning contribution in the design-developer competition. The plan and architecture project become gradually exposed to a political power game that excludes the winning solution produced in the parallel assignment from being implemented (Göteborgs stad, 2023). Quality in design, heritage values, cultural-historical traces, and classical architecture are transformed into competing key concepts in the case.

One of the advantages of studying a plan and architecture project that have been the subject of conflicting interests and debate is that there are traces

left behind by the key players. These remains are understood through close reading of documents based on an analytical framework that puts architecture, professional ethics, and politics in focus. The case shows a critical alteration: the design of buildings in an urban plan pattern lacking historical anchoring on the site of national heritage interest (Acantus, 2021). The study demonstrates that architecture and urban planning are both about power, decisions, approaches, and interpretation of intentions and history, which in turn are visualised through drawings and illustrations. Professional judgements from the competition in 2016 and the parallel commission in 2022 stand against political disapproval of contemporary architecture. Politicians demand the image of 19th-century city at the site.

RESEARCH FRAMEWORK

The purpose of the article is to describe, show, and understand a plan and architecture project and its critical dilemmas from a professional perspective. The research question in the study involves critical dilemmas in a plan and architecture project. Partly a professional dilemma that concerns ethical principles for members of Swedish Architects who have been suppressed in the planning process; and partly an architectural-political dilemma where the relationship between politics and profession is a fundamental issue in competition processes that aim to implement the winning solution appointed
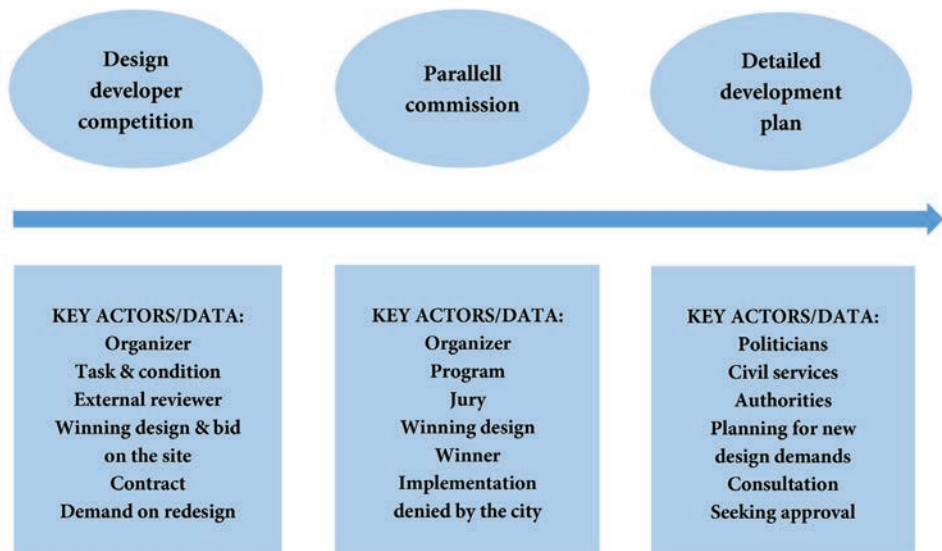

Figure 1: Overview of the three actions (competition, parallel commission, detailed development plan), key actors, and data in the case study.

by professionals. Dilemma in this context refers to the code of conduct and ethical principles adopted by Swedish Architects. The method to investigate the critical dilemmas is based on a case-study approach. An overview of the plan and architecture project includes a process with separate actions, key actors, and data:

The plan and architecture project are investigated as a case study through close reading of key documents, site visits, and analysis of the design, with the support of architectural criticism and cultural compensation. The methodology makes it possible to present a rich story that highlights professional and architectural political dilemmas. By visiting the site, I have been able to understand the case based on its physical context and design proposals. This method provides knowledge in three directions: a) by seeing and carefully observing the site through key concepts; b) by being in, and experiencing the area via my body and senses; and c) by imagining the design submissions on the plot as built environments and judging them based on criteria (Rossman and Rollins, 2012; Lawrenz, Keiser & Lavoie, 2003; Tabačková, 2024). The understanding of cultural compensation in urban design have been developed in research projects. The city planning administration applies compensation as a typical problem-solving practice and to justify exploration in areas of culture heritage. This approach in urban design has been conceptualized in Sweden and Finland (Grahn Danielson, Rönn & Swedberg, 2014; Persson, 2014; Grahn Danielson, Rönn & Swedberg, 2015; Rönn & Grahn Danielson, 2020; Kouzelis, Rönn & Teräväinen, 2022; Dore, 2023).

Documents

The story is about a plot that provides both limitations and opportunities for the plan and architecture project to contribute with values and qualities. Four types of documents have been selected for the study. Firstly, *project-specific documents* produced for the design-developer competition and the subsequent parallel assignment. This includes advertisements, a competition program, competition proposals, an evaluation reports, an invitation to an assignment, architecture contributions, a jury report, and a detailed development plan proposal with investigations of the cultural heritage in the area. Secondly, *local governing documents*: these guidelines are adopted by politicians and applied to varying degrees by officials responsible for design and urban planning. This applies to land allocation policy, architecture policy, master plan, and conservation program. Thirdly, *national guidelines and*

regulations in the law: of particular importance in this case the Environmental Code, the Planning and Building Act and the requirements for arenas of national heritage interests, competition rules, and ethical professional ethics programs adopted by Swedish Architects, as well as recommendations for parallel assignments. Fourthly, *articles and debates in the press*: selected data address the relationship between architecture, politics, and professionals that have a direct impact on how city planning administration acts in the plan and architecture project. This is the game plan for critical dilemmas that gradually become clearer through the case study.

The site - location and conditions

The plot is surrounded by a park, a city library, a theatre, a museum, an art gallery, a hotel, and a university department. The area has a cultural environment of national heritage interest and is part of the conservation program for objects of cultural and historical value. The site has previously been used for pleasure and recreation. In 1886, a circus was built on the site, which was in use until 1969. I attended one of the last gigs in the circus building and listened to the English rock band Fleetwood Mac. Since 1994, the site has been used for a two-level parking garage with 287 parking spaces (Fig 2). It is this plot in the inner city that politicians wanted to transform through a plan and architecture project. As the area is part of the national heritage interest as well as the local conservation program for cultural environments, all changes that require a new detailed plan need to be adapted to the cultural-historical values at the site. The County Administrative Board needs to approve detailed development plans in areas of national interest. Power is shared. The city cannot alone decide on the new buildings in the plan and architecture project.

The plot has been the subject of physical planning since 2015 through the decision to announce a design-developer competition, with the intention to transfer the land to the builder producing the best submission. In 2017, a land allocation agreement was drawn up between the property board in Gothenburg and Serneke, the builder behind the winning proposal. Since then, the conditions for the design and the detailed development plan have been dramatically changed through political interventions. According to the 2022 master plan, the recommendation is to supplement the inner city with housing, services, and workplaces (Göteborgs stad, 2024). Orientation for urban design is high-density and mixed use of the land. The master plan also refers to the city's architectural policy, which highlights a development

Figure 2. The site in the invitation 2016 to the design-developer competition. The area contains a park, a two-story garage, a theatre, a city library, and an L-shaped hotel. Source: Göteborgs stad, 2016.

of Gothenburg into (a) an attractive city with a strong identity, (b) a city for people, and (c) becoming a courageous role model in architecture (Göteborgs stad, 2018).

In 2023, the city planning administration received new directives for the plan and architecture project contrary to architectural policy. The renewal of the site must be based on design in a classical style and traditional blocks (Göteborgs stad, 2023). At the same time, the development of the area should be respectful of the site's cultural history, reflect the present, and promote the city's identity for the future (Göteborgs stad, 2024). The detailed development plan ruling the site is from 1947 and prescribes the land to be used only for park and general purposes. Housing with space for businesses on the ground floor is therefore an alteration that requires a new detailed development plan. The park on site is protected as a particularly valuable green environment with the support of the Planning and Building Act (Ch 8, §13). The cultural-historical qualities of the area, its architectural uniqueness, and its importance in the urban space must not be distorted. Since 1997, the plot has been a part of the national heritage interest for the inner city,

protected in the Environmental Code (RAÄ, 2024). The description of national heritage interest in the area extends from the city's founding in the 17th century, including the construction of fortifications, to the 19th and 20th century expansions and urban transformations with associated plan patterns, building tradition, and character. Key aspects in designated expressions of heritage values are the park, its size and functions as public space, the trees, the theatre building, cultural institutions, the architecture, and urban design in terms of history, experience, and visual interaction (Acentus, 2021; Norconsult, 2024). However, the national heritage interest description is all too broad and must be made operational by interpretations and clarifications through special investigation; this is a practice in Gothenburg when development takes place in environments of great importance (Rönn, 2018). In this case, the city planning administration has access to two reports by hired consultants presenting the cultural values of the site. They identify, describe, and assess the impact of the development on national heritage interest. The needed knowledge seems to be at hand.

The mission

In 2015, the real estate office in Gothenburg was assigned by the real estate committee *"to find an actor who, together with the city, wants to develop the site with high ambitions regarding quality and sustainability"* (Göteborgs stad, 2016a, p.1). The officials describe the site as a garage with 287 parking spaces located in a park surrounded by the city library, theatre building, and hotel. The political mission is to draw up a detailed development plan for the area that enables the alteration of the plot for housing with space for business on the ground floor. But first, the organiser must define the nature of the quality issues that should steer the design of the site and the choice of developer for the plan and architecture project. The city must thereafter arrange a design-developer competition including tenders for land as the governing criteria for ranking proposals, and subsequently single out a winner.

Officials at the real estate office estimate that the site has space for 100 apartments and space for business. The official would like to see a higher degree of development. However, volumes and design have to be studied further in the planning process. As a foundation for the development, the real estate office, in collaboration with the city planning administration, put forward seven urban qualities to guide both the design and the assessment of proposals in the competition. The objective is to create an inner-city block for everyday life, learning, experiences, and meetings. The submissions must

show an environment that makes use of the park, creates paths, and improves the site's connections to the surroundings. The design must also emphasise the identity, historical significance, and spatial conditions and promote changing of activities regarding the outdoor climate (Göteborgs stad, 2016b). Finally, climate impact must be reduced. These are soft qualities to be realised in the competition with a high degree of interpretation. Simultaneously, the officials want developers to compete for the land, using price as a means of competing. The site is intended to be transferred to the developer who (a) accepts the competition requirements, (b) fulfils the design qualification, and (c) offers the highest price for the land. Both housing for rent and tenant ownership are to be built on the site.

Land allocation policy
Design-developer competitions for making residential areas for single-family houses have been organised by municipalities since the 1960s and 1970s (Sköld Partner, 1990). This form of competition increased during the 1980s' deregulation of the building sector and the changed focus to housing (Rönn, 2023; Bodström, 1994). Change of tax rules and reducing financial support from government agencies also followed the emerging belief in market forces. The municipalities gradually began to regulate this form of competition in local governing guidelines. In 2007, the property committee in Gothenburg decided to draw up the first policy for land allocation for housing. In the same year, a group of officials travelled to Helsinki on a study visit to learn about the Finnish experiences from the design-developer competition (Fastighetskontoret, 2008). The following land allocation policy is described by the officials as a guideline "*directing the city's will—in terms of housing diversity, ecology, accessibility, social commitments, as well as competition and diversity in the market—is expressed*" (Fastighetskontoret, 2009). The policy is a brief document without references to the competition as a tool for transferring municipally owned land to companies.

Since 2014, land allocation is regulated by law. According to the regulation (SFS 2014:899), municipalities must adopt guidelines that report starting points, objectives, and fundamental conditions for the transfer of land, handling routines, and principles for pricing land. It is a very simple law, one page without sanctions. Despite this, the law has been criticised by municipalities for being an unnecessary limitation on their self-determination. A closer examination of the city's archive shows that land allocation policy in Gothenburg has been the subject of several political initiatives. The policy

dates from 2007 and has subsequently been revised in 2009, 2011, 2014, and 2018. One explanation for the political interests is the 1980s' deregulation of residential buildings. The land became an increasingly important local key resource for residential supply. Another explanation is the need for clarifying the rules of the game and transparency when municipalities transfer publicly owned land to private companies.

Competition is a concept highlighted in the land allocation policy in Gothenburg in opposition to the direct allocation. A worrying pattern emerges here. There seems to be a risk of unauthorised favouring of some companies. Direct assignment of land has no competitors and is only reported internally. Design-developer competitions, on the other hand, are publicly announced on the city's website and distributed to companies. The competition is on one hand typically seen as an example of transferring land to competing developers; on the other hand, officials regard this as a resource-demanding method that should only be used for special cases. According to the policy in Gothenburg, the property committee decides on competitions and land allocation. The officials carry out the design-developer competitions, review the proposals, and select winners. So far, there is a clear division between politics and administration in policy.

The current policy for land allocations in Gothenburg was adopted in 2021 by the city council. Competition for the land through bidding is a main rule of the policy. But there is no detailed regulation of procedure in the policy. The competitions are carried out by officials, and the administration steers the competition through programs, runs the planning process, ranks proposals, and assigns the winners. The land is then transferred to the winning developer through political decision. In the policy, the land allocation is defined as: *"a right for an interested party to negotiate with the city for a specific period of time and on certain given conditions regarding the conditions for the implementation of new development within the current land area that the city owns"* (Göteborgs stad, 2021, p. 5). The implementation of a winning submission is regulated by an agreement between the city and the developer behind the proposal. According to the policy, new buildings must contribute to sustainable urban development from an economic, ecological, and social point of view. This is an overarching goal, which has been supplemented with the following objectives for the transformation of land:

- **Diversity in housing**: The city is looking for a variety of housing in terms of rental and ownership, housing types, apartment sizes, and price levels. The intention is to create the conditions for a socially mixed composition of housing.

- **Social sustainability and social commitments**: The city must consider the building actor's social responsibility when allocating land. The city can, in this case, require social housing, apartments for households with special needs, and space for childcare and elderly care.

- **Ecological sustainability:** The city would like new buildings without a negative impact on the surroundings. The building management must be energy and resource efficient. Climate and environmental impact must be minimised, and the buildings must have a good indoor climate and outdoor environment. Developers must have a long-term quality and an environmental profile.

- **Business space**: The city promotes integrating housing and space for business in the development. The aim is to create a mixed-use site in the city.

- **Competition and diversity in the market**: The city will support good competitive conditions to support the production of housing and business space at affordable costs. A variety of actors—both large and small companies—will be given the opportunity to become established in the same city areas.

- **Economic conditions, stability, and cooperation**: The city is looking for building actors with good finances and stable organisational conditions when transferring land. Consideration must be given to long-term management, leases/ownership for housing, new thinking, engagement, and collaboration to create a good environment. Experience from previous projects may influence the choice of partner.

Method for land allocation

The design-developer competition is a form of competitive operation based on the belief in the market and its ability to meet housing needs. From the 2021 policy for land allocations in Gothenburg, it appears that the city prioritises transferring land via competition in design or by bidding on sites. Transferring public land through direct allocation may only take place *"when the real estate board finds that there are special reasons"* (Ibid., 2021, p. 9). The administration officials must obtain political permission for direct

allocation. This form for transferring land to companies is not available for inspection by citizens and control by competitors. According to the policy, direct allocations do not become reported on the city's website.

When organising a design-developer competition, the real estate office must produce a proposal including assessment criteria for the ranking of submissions, but it is the politicians who finally establish competition conditions and decide on the transformation of land. The policy states that the city may conduct a design-developer competition if there are requests for design qualities, use, and function of the site. This is the case for the plan and architecture project at hand. The policy also points out that the city can have an *"open tender procedure in order to illustrate the willingness to pay for building rights"* and to give the administration a "*better foundation for future valuations*" of the land (Ibid., 2021, p. 9). In this case, design and bidding on sites will then become competitive criteria.

The design-developer competition 2016 has both urban qualities and tenders for the land as assessment criteria. Seen from this perspective, the competition follows the city's land allocation policy in the search for market values of sites. The alternative would have been to report the market value of the site in the competition program and let the companies compete on quality instead of price. In this strategy, the winner will be the company behind the proposal that has the best quality—not the developer with the highest bid. In the architecture and planning projects, the organiser sees the price of the land as a means of competition as well as a complement to the requested urban qualities on the site. This is problematic since quality and price operate at different levels and time frames.

THE DESIGN-DEVELOPER COMPETITION

In 2016, representatives from Gothenburg City present the competition at Mipim in Cannes for an international audience. Mipim is a large annual trade fair for the civil engineering sector. The chairman of the property committee and the property director proudly inform about the plans for the plot and its attractive location (Göteborgs stad, 2016a; Göteborgs stad, 2016b; Göteborgs stad, 2016c). Despite the international presentation, the following invitation to the competition is only in Swedish. As a starting point for the design, the organiser provides urban qualities needed in the city, the block, and the site. Qualities on these three levels of scale are described in more detail in the invitation as objectives for the design and assessment of submissions.

Proposals must be submitted anonymously to the real estate office under a motto.

In the competition program, site tendering doesn't initially appear as a decisive criterion in ranking the submissions. The requirement for anonymity in the competition rather gives the impression that the urban qualities should guide the assessment of contributions that meet the qualification requirements. The companies behind the design of buildings are unknown to reviewers during the assessment. The anonymity is intended to guarantee a fair and professional evaluation. The one who has the copyright to the drawings is therefore secret information, hidden from the reviewers. Steering for outcome should be assessment criteria and quality in design proposals.

Submission requirements and assessment criteria
To be considered qualified in the 2016 competition, the submissions must demonstrate a very good understanding of the site and its conditions (OKK+ & Fastighetskontoret, 2016). This has to be reported in conceptual sketches, illustrations, CVs, project organisation, references, and a description of how the intentions are to be met. The companies should also present their tender for the plot and show how they plan to finance and organise the implementation of the submission. The urban qualities in the design proposals are going to be assessed on the following criteria:

- The site should be considered on several scales.

- The following overall orientations should be considered: inviting lines and logical connections; an inner-city environment with space for everyday life; learning, experiences, and meetings.

- The character of the block should include clear street environments, with attention to the interesting diversity of the park.

- The paths and places on the site should improve connections in the city, emphasise the identity, and constitute a catalyst in the development of surrounding areas.

- The layout, volume, and land use should promote openness and strength in the streets,

- The meeting between buildings and park should be developed based on its historical significance and support a clear spatiality, including openness to changing seasons and alteration of activities.

- To create conditions for ecological and urban sustainability through low local and global environmental impact, a good foundation for a climate-smart lifestyle and inclusive environment.

The competition generated 13 proposals. OKK+ was hired for the evaluation of the design of the submissions. According to the assessment, only 7 entries meet the requested understanding of the site and the desired urban qualities. The review of the developer's financial and organisational capacity was carried out by PwC Real Estate. One of the contributions that fulfilled the requirements for urban qualities had a higher bid for the plot than the other competitors. The developer behind this submission was selected as the winner. The proposal had been produced by a design team of four companies. Of these, two are builders and housing management companies, Serneke Projektutveckling and Skandia Fastigheter, and two companies are architectural offices, Semrén & Månsson and 02Lanskap (Serneke, 2016). The assessment report summarises the winning contribution as follows:

> *The project focusses on the centre of the entire large block and places a public square there as the main attraction. The block is a closed space to the surrounding streets by two large brick buildings with business and housing. The buildings constitute a narrow central alley between them, which is said to contribute to a better microclimate. A specification of facade material may seem very early in a market-orientation mode but describes a site-dependent and conscious level of quality. Structurally, the arrangement operates well as a basis for further processing* (OKK+ & Fastighetskontoret. 2016, p. 14).

The winning design has tall buildings of varying height in two blocks (Fig. 3a and 3b). The real estate board decides to draw up a land allocation agreement with Serneke. The other three companies in the design team are made invisible. The decision requires Serneke to conduct a parallel assignment for the continued development (Göteborgs stad, 2016a). A parallel assignment is a competition-like operation including invited architects. In this assignment, proposals are developed in dialogue with the client. There is no anonymity. The organiser can review, comment, and steer the design by having dialogue sessions with competitors.

In the government policy from 1980, parallel commission is described as a working method for clients to hire consultants designing proposals with alternative solutions in the same project. The point is to be able to find good solutions through dialogue. "*The client gets the opportunity to change the*

Figure 3a. The winning proposal from 2016 shows a high, dense building on several scales. The brick facades have a modernist style. The park is illustrated with young people who use the green space for socialising. Source: Serneke, Skandia Fastigheter, Semrén & Månsson, and 02Landskap.

Figure 3b. The plan for the winning proposal 2016. The buildings are organised in two open-plan patterns. Walkways and lines of sight point towards the centre of the park, which is called "the green circus ring". Source: Serneke, Skandia Fastigheter, Semrén & Månsson, and 02Landskap.

program and control the conditions during the work process. The work is conducted in an open discussion between the involved parties" (Byggnadstyrelsen, 1980, p. 3). Swedish Architects define parallel commissions in a corresponding way in their guidelines. The possibility of dialogue with invited architects is highlighted as an alternative to an anonymous presentation and assessment of proposals in competitions. The guidelines from Swedish Architects also require financial compensation for architects and have a detailed justification for the working method. Furthermore, their guideline presents a model for how this assignment should be carried out. According to Swedish Architects, two to five architectural offices should be invited to a parallel commission. The assignment may be organised in stages so that the client, through an active dialogue, can steer the architect's work and request different types of processing of the proposals before making the final assessment. The evaluation should be carried out by a group of professionals having the required expertise for the task.

PARALLEL COMMISSION

In 2020, the developer publishes an invitation to a parallel commission for designing the site. The objective is *"to create new housing in a central location, strengthen surrounding streets with new functions on the ground floors, and safeguard safe and accessible paths along and through the block"* (Göteborgs stad & Serneke, 2020, p. 4). The parallel commission is to be carried out by Serneke in collaboration with the City of Gothenburg and Swedish Architects. The unit for competition and procurement services at Swedish Architects approves the program after review, markets the assignments, and reports the result on the website. Swedish Architects also point out a member of the assessment group. The first step in parallel commission is the selection of design teams for the assignment. Semrén & Månsson and 02Lanskap were not invited despite the victory in the previous design-developer competition.

Assessment group and team selection

The invitation generated 21 submissions of interest (Serneke, 2021). After review, the developer chose to invite four design teams to design the task: 1) Belatchew Architects & Nivå Landscape Architecture, 2) Kanozi Architects, Mareld Landscape Architects & Antiquum, 3) OKK+, Sandellsanberg Architects & GAJD Architects, and 4) Reiluf Ramstad Architects & Kaminskay Architecture. The purpose of the parallel commission is described in the assessment report as *"to produce, in a co-creative process, a high-quality design proposal for new homes, businesses, parking garages, and adjoining public*

places" (Göteborgs stad & Serneke, 2022, p. 3). Responsible for the evaluation of proposals is a committee of professionals with expertise in architecture, urban planning, cultural environment, and project development. Of these, three members are appointed by Serneke. The city of Gothenburg has correspondingly appointed three members. In addition, an independent architect has been appointed by Swedish Architects. It is a qualified group of professionals with broad expertise who have been given the task of ranking contributions in the parallel commission.

Objectives, judging criteria, and winner
The fact that the site is part of the national heritage interest has now become a major concern in the plan and architecture project. The proposals in the parallel commission must be designed and evaluated with respect to their approach and impact on the national heritage interest. This is a clarification due to the fact that the forthcoming detailed development plan making the explanation of the site possible must be approved by the county board. The objectives are now to:

- add new buildings to the block having high architectural quality and a volume that enhances the cityscape and cultural heritage values, as well as having a careful approach to the park in the area.

- create apartments with attractive housing qualities.

- provide good conditions for active ground floors that strengthen experiences at an eye level in the street space and inside the block.

- develop paths through the block primarily for pedestrians and to strengthen the surroundings with places for both activity and recreation.

- strengthen the function of the park and its cultural-historical significance for the city's greenery strategy.

- manage the cultural and environmental values of national heritage interests on the site and the surrounding area identified as critical points.

- produce a sufficiently strong and robust design concept that can be further developed and implemented without losing its central qualities.

Eight open judging criteria have been set for ranking the solutions. These criteria are: 1) architectural height, 2) relevant approaches to the national

heritage interest, 3) fulfilment of the program for the task, 4) feasibility, 5) sustainability (social, ecological, and economic), 6) functions, 7) development ability of the proposal, and 8) process (understanding of the assignment and ability to develop the proposal). The assignment includes a joint kick-off meeting, a site visit, and two workshops with written comments on the design before the final assessment of proposals.

The assessment committee evaluated the design proposal step-by-step in four meetings. Their statement is presented publicly to the organisers, politicians, colleagues, and the press. The winner is a contribution produced by a team of three architectural offices: OKK+, Sandellsandberg, and GAJD. The review report makes the following statement to the organiser about their design:

> *Through its strong, unique conceptual approach well founded in the spirit of the place, its architecture, its housing qualities, and its robustness for implementation, the assessment group recommends proposal 'Circus-platsen' by team OKK+/Sandellsanberg/Gjad for further processing and as a starting point for the planning process in collaboration with Gothenburg City. The proposal has its own distinct character that reflects the present but respects and manages the distinctive character of the block. 'Circusplatsen' is a composition with high architectural qualities. It shows evidence of elegant handling of the volumes, where the proposal succeeds in being both large-scale and small-scale at the same time, thereby connecting to the block and its surroundings. The story behind the architecture is strong and conceptual and derives its inspiration mainly from the block when the circus was active* (City of Gothenburg & Serneke, 2022, p. 6).

The exploitation is higher this time, including 130 apartments, business space, and an underground garage with parking for cars and bicycles as compensation for the demolished parking garage on the site. The architecture demonstrates a contemporary design in a varied and playful connection to the park (Fig. 4a, 4b, and 4c). The assessment committee reports several well-designed passages, paths, and sight lines in the block. The façade in bright colour shows relief effects in the material. The architecture is described in the assessment report as a balanced wholeness of volumes and expression. On the ground floor, there is space for business-facing passages that invite activities and togetherness (OKK+, Sandellsandberg, GJAD, 2021; Göteborgs stad & Serneke, 2021; Göteborgs stad & Serneke, 2022).

Stadsrum

Manege

Poppel bevaras

Planteringar

Ny plats
Bevarade träd?

Planteringar — Lokaler — Siktlinjer

Cirkusplatsen
Ett välkomnande, publikt stadsrum
Vackra och välbelysta passager
Kontakt mellan ute och inne
Planteringar med träd och året runt-gröna växter
Siktlinjer till omgivande gaturum genom öppningar, passager och lokaler.

OKK+   sandell sandberg   GAJD'arkitekter   SERNEKE   Göteborgs Stad
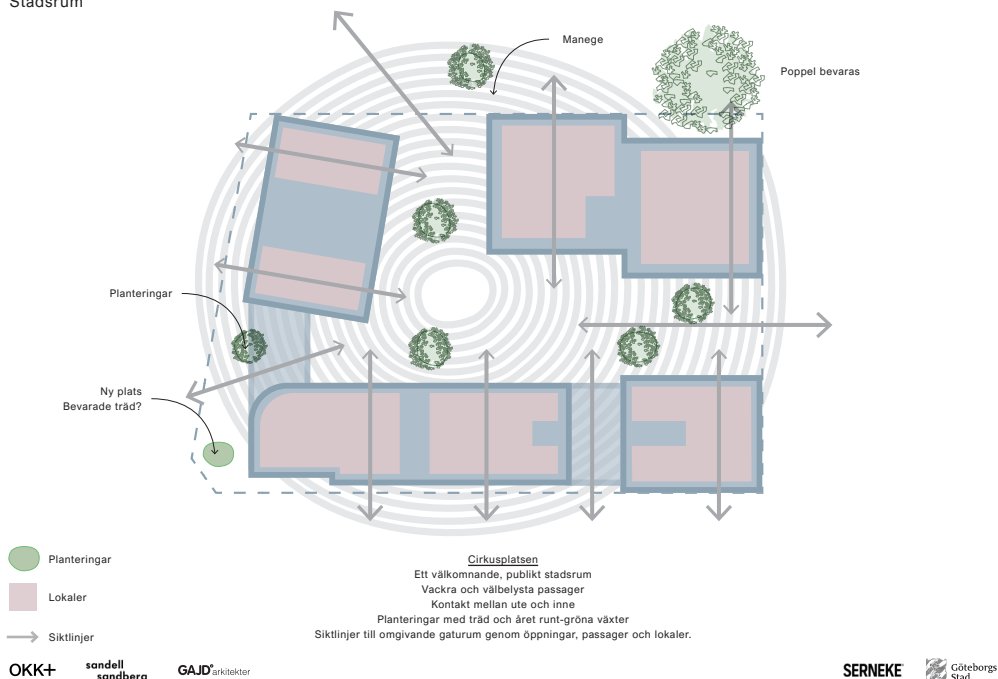
Figure 4a. The plan pattern in the winning contribution 2022. The buildings are symbolically placed on a circus ring as historical reference. Lines of sight and walking lines are marked as arrows. Source: OKK+, Sandellsandberg Architects, and GJAD Architects.

Ethical principles

The assessment committee does not comment on the exclusion of Semrén & Månsson and 02Lanskap in the parallel commission. Their winning proposal in the previous competition is made invisible. Another critical issue of professional importance concerns the selection of the design team. OKK+, which has been hired to evaluate the contributions in the design-developer competition, participated in the parallel commission. Nor is this fact commented on by the assessment committee. According to the ethical code of conduct adopted by the Swedish Architects (www.arkitekt.se), an *"architect who is offered to complete, develop, or change another architect's work must... personally notify this person."* The architect must not take part in contexts that may undermine trust in the professional role. If there are personal interests or commitments that may affect the role of an independent expert, the client must be informed and the rules for approved architectural competitions state that *"anyone who is an associate or otherwise... is in a close relationship with a member of the jury"* is excluded from participation (Sveriges Arkitekter, § 4).

Figure 4b. The architecture in the winning proposal is designed as cubes with varying scale and bright facades in a design language inspired by the activities on the site. Source: OKK+, Sandellsandberg Architects, and GJAD Architects.

Figure 4c. The facades have a modernist design without ornamentation. Source: OKK+, Sandellsandberg Architects, and GJAD Architects.

These ethical principles apply to architects participating in the plan and architecture project, both in the role of the designer and as the expert in judging the contributions. But it is not because of ethical considerations that the developer interrupts the collaboration with OKK+, Sandellsandberg, and GJAD and again turns to Semrén & Månsson. The reason is instead a strong political dissatisfaction with the winning design in the parallel commission appointed by professionals. The City Planning Board decides that the plan and architecture project must be reworked (Göteborgs stad, 2023). The winner may not be implemented even though the architecture refers to the circus building on site. The politician demands that the design of the site must look like an image of a city from the end of the 19th century.

According to the City Planning Board, the officials must draw up a detailed development plan having classical architecture in a closed block. From right to left, politics unites in the requirement for a new focus. It is a very clear directive from 2023 that the administration must apply. Of course, this political request has created a critical debate in the press as well as internal tensions in the city between politics and officials. Architecture and urban design must follow a specific historical style in Gothenburg. Design development stops in time. The facade should have a classic appearance. This drama is carried out within the architectural policy, which on the other hand still states that the city wants to become attractive by *"investing in really good architecture... actively participating in the development of architecture through pilot projects... initiating architectural competitions and place-making activities"* (Göteborgs stad, 2018, p. 4). This policy is supposed to transform Gothenburg into an appealing city with a strong identity, a city for people, and a role model in architecture. How these intentions, values, and qualities are to be interpreted is determined by the same politicians that have given the plan and architecture project a new orientation, leading to classic facades in a closed block at the site.

THE REVISION OF ARCHITECTURE AND THE PLANNING PROJECT

In 2024, the city planning administration presents an extended, detailed development plan with new illustrations by Semrén & Månsson and Mareld Landskapsarkitektur (Göteborgs stad, 2024a; Göteborgs stad, 2024b). As the site is part of the national heritage interest, the detailed development plan must be approved by the county board. For this reason, the city planning administration hired consultants for two investigations of the impact on

the national heritage interest. The first investigation identifies, describes, and specifies qualities and cultural values in the area (Actanhus, 2021). The second investigation analyses the impact of exploitation, the degree of negative effects on the national heritage interest, and how damage should be judged. (Norsconsult, 2024). The task is to draw the line between a permissible negative impact on the cultural values and unauthorised tangible damage to the national heritage interest in the area, which is a too negative consequence of the exploitation.

To mitigate the negative impact on reported cultural values and architectural qualities, the city planning administration starts the detailed development plan by presenting the purpose and conditions in a positive manner. The plan and architecture project is intended to enable new housing and business, add urban qualities to the area, and create accessible paths in the inner city. Cultural-historical values and architectural qualities will be ensured, according to officials. The design of facades in the illustrations and attached regulations is intended to safeguard architectural qualities as well as a classic expression and a closed block of the site. The goal is to fit the design to the surrounding buildings.

Figure 5a. Proposal by Serneke, Semrén & Månsson, and Mareld adapted to the new political directives. The design has a classic expression in a closed block. Source: Detaljplan för bostäder och verksamheter vid Lorensbergsparken inom stadsdelen Lorensberg, Göteborgs stad, 2024.

Figure 5b. Proposal by Serneke, Semrén & Månsson and Mareld expressing the buildings facing the park. Source: Detaljplan för bostäder och verksamheter vid Lorensbergsparken inom stadsdelen Lorensberg, Göteborgs stad, 2024.

Figure 5c. Proposal by Serneke, Semrén & Måncson and Mareld showing an urban environment from the end of the 19th century having a classical design expression. Source: Detaljplan för bostäder och verksamheter vid Lorensbergsparken inom stadsdelen Lorensberg, Göteborgs stad, 2024.

The implementation of the detailed development plan appears as an overarching objective and steering condition (Rönn, 2018). The city planning administration has bridged conflicting demands and competing interests by three actions. Firstly, the detailed development plan refers to requirements regarding densification and a mixed-use town in the general plan. Secondly, the plan and architecture project has been revised according to the political design demand of 2023. Thirdly, the detailed development plan has been renewed to find acceptable damage to the national heritage interest at the plot. The city planning administration states that the exploitation will have to moderate large negative consequences on the environment, mainly through the impact on the cityscape, cutting down of trees and losses of the park as urban space. However, the impact does not reach a level of tangible damage. This understanding of conducted investigations has the implementation of the revised detailed development plan as starting point. A critical fact suppressed: there has never been a classical architecture in a closed block on the site (Acantus, 2021).

The development breaks the cultural history on the plot. As compensation for the negative impact, new trees must be planted in the area for minimising losses, both in the park and in the surrounding streets, and the design will be regulated in detail to ensure architectural qualities (Göteborgs stad, 2024b). The administration put forward several positive effects as results of the exploitation, such as new homes, urban qualities, and space for businesses on the ground floors, strengthened streets, and space that will provide more life, safety, and visibility. The courtyard in the new residential block is also assumed to have a recreational function. By having half of the residential rooms facing the courtyard, the apartments will be able to meet the guidelines for noise. In the summary, the administration finds the suggested alteration feasible by compensation. The plan and architectural project has been sufficiently adapted to identified cultural values, and compensation for damage to the national heritage interest means that remaining obstacles are seen as bridged (Fig. 5a, 5b, and 5c).

Two cultural environment investigations
The first investigation was carried out in 2020-2021 and aimed to deepen knowledge about the cultural and historical values of the area. The target was to provide an analytical basis for the planning, scope, scale, and design of the intended alteration of the site (Actantus, 2021). The consultant conveys a historical understanding of the area as an integral part of a larger urban

context. Of great importance was identifying character-creating features of the site and its immediate surroundings, including visual traces and cultural-historical expressions. The park, the theatre building, and the interior of the hotel are part of the city's preservation program. The relation to values and qualities in the national heritage interest is reported as critical points: the park's extent and function as a public urban space, the trees in the area, the theatre as a protected building, urban expansion and its architectural arrangement, the block expressing historical experience, and the visual interplay on the site. Character-creating features in the area are reported as:

- Asymmetric plan form and organic development
- The urban plan pattern violates the location and volume of the buildings in the inner city
- Varied buildings and architectural design
- Buildings with several functions
- Besides the parking garage on the site, the buildings in the area have brick facades and plaster in yellow and light colours
- The theatre building has its main entrance facing the park and is not directed towards the streets surrounding the block
- There are rows of trees around the block
- The walkway in the block connects two central streets in the area.

The historic role of the block in the inner city emerges as a key issue in the investigation. The buildings in the block have been "*deliberately excluded from the traditional urban planning ideals with closed symmetrical city blocks. Instead, the block has acquired a distinctive character as a historic park environment with lower, separate, located buildings in a varied design*" (Actantus. 2021, p. 3). The building "*represents a structure that deviates from the typology of the surrounding city*" (Ibid., p. 3). The closed block in the derailed developer plan is thus seen by the consultant as a clear violation of the historical urban plan pattern and a significant negative impact on the national heritage interest. The consultant does not use tangible damage, but in the overall assessment, it is emphasised that the exploitation is a huge challenge in sharp conflict with the foundations of the national interest.

The second investigation is carried out in 2024. The aim was to describe the effects and consequences of exploitation on the cultural and historical values in the area (Norconsult, 2024). The investigation should particularly

highlight the impact on the national heritage interest and the risk of tangible damage. This work method in the investigation refers specifically to a handbook published by the Sweden National Heritage Board for handling the national heritage interests in areas exposed to alteration. Also, the guidelines by the Environmental Protection Agency for assessing tangible damage have been consulted in the assignment. The conclusion in the second investigation is that the damage is acceptable according to the environment code. The consultant also states that the county administrative board in this case decides whether the detailed development plan significantly harms the national heritage interest too much or not.

To legitimise the conclusion of acceptable damage, the consultant has a paragraph describing the methodology and key concepts behind the statement. The assessment has been guided by concepts: impact, effect, and consequence. The cultural value in the area is defined as high, moderate, and low. Tangible damage to the national heritage interest occurs in this methodology if the exploitation has a significant negative impact on protected cultural environments attributed with high value. The degree of impact is tested through visual analyses of sight lines in illustrations produced in the plan and architecture project. There are small, moderate, and large negative consequences for protected cultural environments. But the second investigation does not consider that the negative impact reaches the criterion for tangible damage. The decisive obstacle is thus removed, even if the detailed development plan nevertheless causes damage to the national heritage interest. To reduce the negative effects of the detailed plan, the city planning department presents compensatory measures aimed at enhancing the experience of the park and its historic character. This represents the final step for getting the detailed development plan provided by the county administration.

RESULTS AND DISCUSSION

The research question and its two critical dilemmas will be summarised and discussed in four overall conclusions.

1. The design-developer competition

Initially, the property board in Gothenburg is responsible for the plan and architecture project. The politicians decided in 2016 to have a design-developer competition. They want to find quality in design and a developer. Officials at the real estate office produce assessment criteria, submission

requirements, and conditions that design teams must meet (Göteborgs stad, 2016a). A critical dilemma is involved in the competition from the start. There is template demanding that the winning developer carry out a parallel commission. Already in the early phase, there is a surprising condition that will influence the future. The organiser intends to dissolve the best design team and end the business relationship among the companies making the top-ranked design proposal. Instead of keeping the design team behind the winning submission, the development of the site must be exposed to a new competitive assignment organised as a parallel commission. This procedure should be seen as an abuse of the competition as a tool for design, creativity, and innovation, even if the competitors are informed by the organiser. To promote quality, the municipality of Norrköping has, in contrast, tried to keep the design teams behind the best proposals in two design-developer competitions. In the competition programs, the organiser states that the winner has *"no right to change the architect or redesign the proposal without approval from the municipality"* (Municipality of Norrköping, 2022, p. 9).

A second critical dilemma is that the organiser intends to weigh long-term urban qualities against the price of the land. The competition in 2016 contains bids on the plot. The real estate office state will award the building actor who (a) meets the design requirements, and (b) offers the highest price for the land (Göteborgs stad, 2016a). This explains why Serneke is pointed out as the winner. Alternatively, the organiser could determine the market value of the site through an external expert, and then report a fixed price in the competition program. The quality of design would then steer the outcome. Both architectural offices and developers prefer a fixed price for sites in competitions since this provides much clearer conditions (Rönn & Koch, 2022a; Rönn & Koch, 2023). At a fixed price, participating design teams would have competed on design quality instead of tenders for the plot. At high probability, the long-term qualities, formulated as urban criteria, had gained greater importance in the competition with fixed price in the competition program. The architecture in the winning proposal shows a solution with high exploitation of the plot and buildings that vary in scale in two open blocks. There are high-rise units in an urban U-shape and the design has clear lines of sight. The proposal highlights the park's accessibility as an urban space for social activities.

The organiser presents the design-developer competition of 2016 at the international real estate event at Mipim in Cannes. The object must have been

to attract international players and to put Gothenburg on the map. However, if the city truly wanted to spread the information to a wider circle of worldwide companies, the invitation should have been in English and not just in the Swedish language. This is also a critical aspect of the competition. The used language expresses a local nature in the competition, which is reinforced by the presentation of the design-developer competition in Swedish taking place at the Elite Hotel Park Avenue, which is directly adjacent to the site.

2. The parallel commission

This assignment contains two professional dilemmas. The parallel commission starts in 2020 with a pre-qualification and is completed in 2022 by the selection of the winner. The initiative in the plan and architecture project has now passed from the real estate office to the developer and the city planning administration, which, on behalf of politicians, shall make a detailed development plan for implementing the winning design. In a joint venture with the city planning administration and Swedish Architects, Serneke as developer invites architects to the parallel commission and picks out professionals for judging submissions and singles out a winner. Swedish Architects select one member to the assessment committee. The dilemma here concerns one of the invited design teams. The same architectural office that evaluated the proposals in the previous design-developer competition is part of the constellation of companies that are invited into the parallel commission. This fact raises questions about competing on equal terms. According to the law (SFS 2017:900), disputes can arise if a related party participates in decisions, or if there is another special circumstance that gives reason to question impartiality (§16). Because OKK+ had been hired as an expert in the architecture and planning project, the assessment group should have looked closer into the matter.

The ethical code of conduct adopted by Swedish Architects demands that members of the association don't participate in assignments that could undermine trust in their professional role. An architect must inform the client if there are personal interests that could affect their position as an independent expert. At the same time, the architect should be a professional advisor and safeguard the clients' interests, which in this case was a development of the park guided by a vision for the design that *"captures the place and the present, with anchoring in the past with a view to the future"* (Göteborgs stad & Serneke, 2022). As there were several architects in the parallel commission, operating as process leaders, members of the assessment committee, and an

external expert guarding professional practice, both the administrative law and ethical code of conduct are applicable in the case. From this point of view, the invitation of the design team to the parallel assignment stands out as a critical dilemma in the plan and architecture project.

Another professional issue concerns the composition of the assessment committee and the anchoring of the winning design in the city as being a planning authority. Safeguarding the implantation of the proposal through the participation of the city architect and the city gardener in the assignment proved insufficient. An alternative way to anchor the best solution becoming implemented is to include politicians in the assessment committee. This is a practice both in architectural competitions and design-developer competitions. The jury may have politicians' representatives as the majority and the opposition to point out conflicting interests. The underlying idea in this strategy is that politicians should feel ownership of the winning proposal and support the implementation. For example, the city of Gothenburg conducted a competition in 2016 aimed at affordable housing with altogether six politicians on the jury (Rönn, 2016). The winning proposal was implemented. Kinna, a municipality in the Gothenburg region, has also conducted a design-developer competition looking for new housing, including two politicians in the jury (Rönn & Koch, 2022b). The professional objection to this type of anchoring is that politicians are laymen in architecture, lacking design competence. For this reason, politics should only initiate competitions, while officials should prepare the competition program and be responsible for the assessment of contributions. Ranking design proposals is seen as a professional task from this perspective. This division of responsibilities was cancelled by the politicians in the plan and architecture project as they stopped the winning design from being implemented, which in turn demonstrated that the composition of assessment committees is a key issue in competitions as well as in parallel commissions.

3. Political requirements on the detailed plan

The City Planning Administration highlights two sources behind the politicians' intervention in the work on the detailed development plan with the resulting changed mission. Firstly, the 2022 master plan, which recommends the inner city be supplemented with housing, services, and workplaces. The master plan calls for mixed-use and high-density buildings in the centre location (Göteborgs stad, 2023; Göteborgs stad, 2024b). Secondly, the 2023 decision prescribes a new orientation of architecture and urban

design—quality through a classic design and closed block. The city planning administration had to draw up a new detailed development plan for the site. The orientation for a classical architect has been preceded by public criticism from the politicians in Gothenburg combined with a new organisation of the city and alteration of internal management of the administration. Officials were no longer invited by politicians for advice in the same way as before (Arkitekten, 2024). In the press, politicians call contemporary architecture dull examples of glass boxes and square buildings having stripped-down and boring facades (Andersson & Enström, 2020; Ädling, 2018). Architects find the return to 19th-century cities as an expression of populism and ignorance. Johannes Hulter, on the other hand, who is a leading politician in Gothenburg, understands the demand for classical architecture as a matter of democracy. He wants to have a design that is appreciated by the inhabitants (Architect, 2023). This intention is then turned into a specific style.

The plan and architecture project are an illustrative example of a genuine contradiction between politics, competence, and the design profession. There is no one-size-fits-all solution according to this case study. Legitimate long-term interests must be weighed against each other in a responsible manner when designing new buildings in sensitive cultural environments. The site and its history are a given starting point for the architectural work, which is highlighted in policies by both local and national authorities. The limit for political control in this case is tangible damage to the national heritage interest, regulated in the Environmental Code, which, in the event of a dispute, may become interpreted by a court.

4. Cultural environment compensation

Since 1987, the system of national heritage interest has been a part of the Planning and Building Act. The idea of protecting valuable environments against exploitation. The local level must be monitored in this perspective. The system of national interests has repeatedly been criticised by municipalities for creating uncertainty in planning and being difficult to apply in practice (SKL, 2011; SKR, 2022). In 2014, as a response to the criticism, the Swedish National Heritage Board published a handbook about the national heritage interests in planning processes (RAÄ, 2014). Negative interventions in valuable heritage areas that cannot be avoided must be compensated, according to this guideline. However, exploitation must not significantly damage national heritage interests. It is a starting point in planning that is difficult to put into practice since the national heritage interest often is expressed too generally.

The city planning administration hired two companies to investigate how the plan and architecture project affected the national heritage interest in the area. The investigations present conflicting conclusions.

The fact that the plan and architecture project damages the national heritage interest is well documented in this case. There has never been classical architecture on the site in a closed block. Even if one of the hired consultants argues that the exploration does not reach the level of tangible damage, the intervention still needs to be compensated because of the impact. The risk of the county board rejecting the detailed development plan must be prevented. The solutions are compensation (Fig. 6a and 6b). The City Planning Administration reduces the damage in this case through the following strategies:

- **An old tree in the park is protected in the detailed plan**: A tree that is particularly valuable for the cityscape is protected in the detailed development plan because of the exploitation. This tree may only be removed if there is a safety risk.

- **Expanding the planning area for including planting of new trees**: The planning area is changed to include compensation measurements. The expanding area makes it possible to plant new trees in the block as a "green" action. New trees of varying sizes are going to replace trees that are removed because of the exploitation. The streets will have an appealing cityscape through creating a single-sided avenue in the planning area.

- **Detailed regulation of the design of new places and additional buildings**: Both buildings and public places on the site must be carried out with high architectural quality in terms of detailing, processing, choice of materials, and colour. The buildings are from five to seven stories tall and must harmonise with the character and surrounding area. Facades must mainly be of brick with a shaped finish against the roof. Stone and plaster are permitted to a limited extent. The façade facing public space must be clearly marked and have a detailed ending towards the roof. The windows above the entrance floor should be symmetrical and express a vertical dimension. Balconies must be grouped vertically. The roof must be designed as a gable roof. A flat roof is allowed towards the courtyard. Domes, eaves, and bay windows must be designed according to special instructions.

- **New housing and space for businesses contribute to a living environment in the city**: The public character of the block is maintained through businesses on the ground floor facing the park and surrounding streets. Lack of living qualities such as daylight and sunlight are weighed against the need for new housing in the inner city, which is seen as more important. The area is exposed to noise from cars, buses, and trams, which can't be avoided in the area. A closed block on the site is described as a design strategy for reducing disturbances from traffic. By building larger apartments, it becomes possible to turn half of the rooms towards the courtyard.

- **The risk of tangible damage to the national heritage interest is downplayed using hired consultants**: The national heritage interest description for the inner city is comprehensive and open to interpretation. The description becomes the subject of a critical review, and the impact on cultural-historical values has been analysed in a
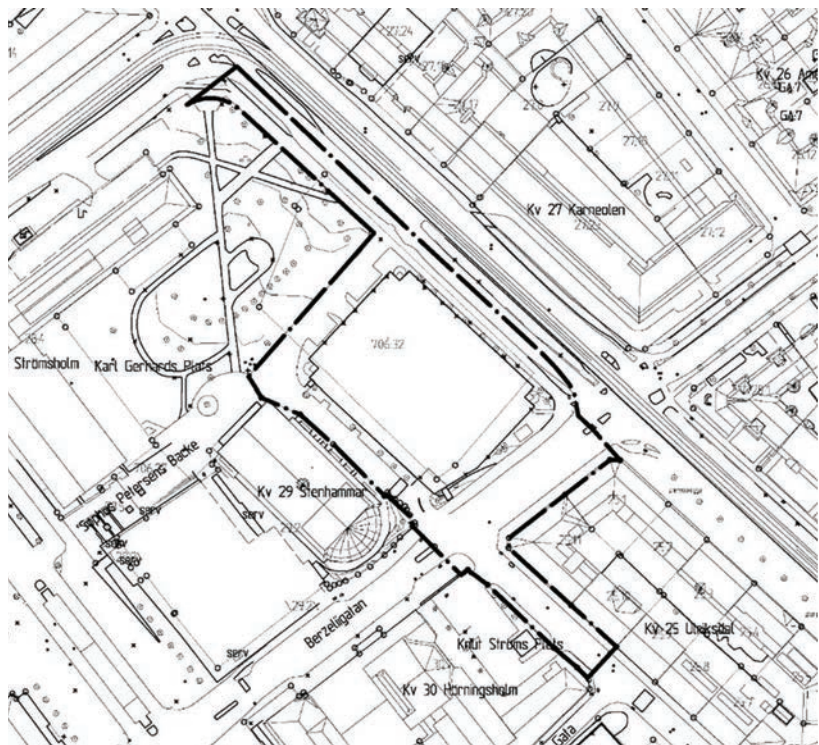

Figure 6a. The expanded planning area in the 2024 detailed development plan. Trees lost are compensated by new ones in the streets. Source: Detaljplan för bostäder och verksamheter vid Lorensbergsparken inom stadsdelen Lorensberg, Göteborgs stad, 2024.

selection of visual tracks in the area. The consultants convey partially different statements of the environment on the site and its urban plan pattern. The exploitation changes to the land use, the asymmetric plan pattern, and the historic diversity of buildings on the site. Instead of commenting on this fact, the city planning administration chooses to highlight that the detailed development damage to national heritage interests ranges from a small negative effect to moderate and large negative consequences. This is understood as acceptable impact. According to the officials, the effect mainly concerns the park, the cityscape, and the readability of the environment (Göteborgs stad, 2024b, pp. 88-89). But this effect is not considered tangible damage. The detailed development plan can therefore be assumed to be accepted. The fact that the plan and architecture project has a closed block that deviates from the cultural history of the area is hidden in expanding wordings and interpretations.

The county administrative board will finally decide whether the compensatory measures by the city planning administration end up having an acceptable impact on protected national heritage interests. In 2024, the
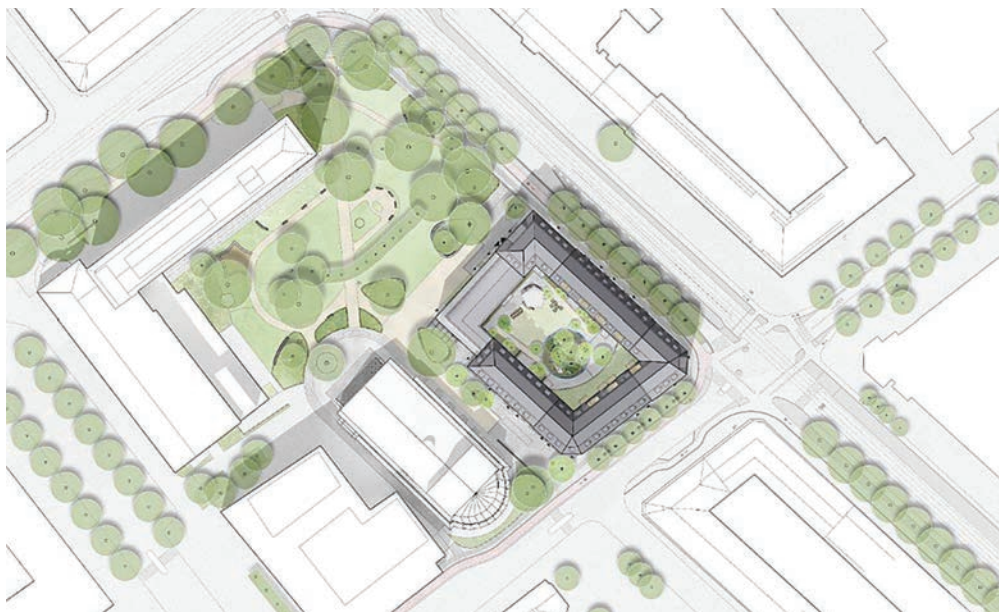

Figure 6b. Illustration from detailed development plan 2024 shows the settlement surrounded by new tree planting through compensation. Source: Detaljplan för bostäder och verksamheter vid Lorensbergsparken inom stadsdelen Lorensberg, Göteborgs stad, 2024.

county administrative board assessed the plan proposal. The impact on the national interest seems to be greater than what it appears to be in the plan description, according to their statement. The county administrative board sees significant damages to the protected national heritage interests and requests a clearer account of how cultural values are to be taken care of and reported damages are minimised from the city. The limit for the politicians' exploitation of the site is the Environmental Code's prohibition against tangible damage to the national interest. How this legal regulation in law should be interpreted in this case reflects several professional dilemmas for experts in the municipal administration, authorities, and private companies that have the cultural environment as their field of assignment.

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CONTRIBUTORS

EDITORS AND AUTHORS

Magnus Rönn is an associate professor working at Kulturlandskapet (The Cultural Landscape). He has previously been affiliated with the School of Architecture at the Royal Institute of Technology and at the Department of Architecture and Civil Engineering at Chalmers University of Technology. He is editor-in-chief of *The Nordic Journal of Architectural Research* and founding co-editor at the Nordic Academic Press of Architectural Research. From 2004 to 2016, Magnus held the position of research leader in the School of Architecture, KTH, teaching at an advanced level. Together with colleagues, he has been the theme editor for publishing four special issues on competitions in two scientific journals (2009, 2012, 2013, 2014). He has also published five books on architectural competitions: three anthologies in English (2008, 2013, 2016) and two monographs in Swedish (2005, 2013). In cooperation with two colleagues, Magnus has edited three anthologies (2014, 2015, 2020) dealing with compensation measures in the transformation of areas with cultural heritage values.

Helena Teräväinen is an urban planner (D.Sc) and architect (M.Arch). She has been affiliated since 2006 with cultural heritage and urban planning studies in the Department of Architecture at Aalto University School of Arts, Design, and Architecture. She also has a wide working history in the public sector as a city architect, regional planning architect, and regional artist, as well as a project architect in private architecture studios. Dr. Teräväinen has published several books, conference proceedings, and journal articles in English and in Finnish. She has been an active organiser of ATUT, Finnish architectural research symposiums in 2009, 2012, 2015, 2018, and 2021. She is one of the establishers and editors of ARF, Journal of Architectural Research in Finland, and a reviewer, among others, for The Nordic Journal of Architectural Research, and in EDRA and IAPS conferences. She has also presented several photo exhibitions.

Leif Östman is a Finnish architect, working as a principal lecturer and as the head of the Construction degree program at Novia, University of Applied Sciences, in Vaasa, Finland. He teaches urban planning and building design. He has a diploma from the Faculty of Architecture at RWTH Aachen and a doctor's degree (TeknD) from the School of Architecture at the Royal Institute of Technology. He has been a regular visiting lecturer at Wismar UAS since the year 2000. His research is centred on planning processes, aesthetic cultures, and pragmatist philosophy. In recent years he has also been preparing documentation of old buildings as part of planning processes and trying to comprehend the intricacies of negotiations about common values and goals in planning processes, as well as ideas about design management and power relations.

AUTHORS

Géraldine Brun is a PhD student at the Department of Conservation, University of Gothenburg, Sweden, since September 2022. Her research is conducted within the infrastructure of the Craft Laboratory in Mariestad, which is a national centre whose purpose is to document and develop craft knowledge. Her work focuses on traditional building craft methods and their potential contribution to the regenerative architecture of wood claddings. Fascinated by the aesthetic of care in older façades, she travels across Scandinavia and France to immerse herself in and make sense of hundreds of years of knowledge captured in our built heritage. She draws upon both her own experience and that of other practitioners in building craft to interpret traces of the past and derive lessons in materials science and circular material flows. Together with her supervisor, Gunnar Almevik, she leads the organising team for the Biennial International Conference for the Craft Sciences. During the second edition in 2023, she presented an exhibition of boards issued from traditional wood claddings that she gathered during her first fieldwork season. The main findings are presented in *When Wood Cladding Degenerates: Lessons on Durability from Traditional Wood Claddings after Long Weathering in Real Conditions*, and a film of the exhibition presentation is available on the conference portal.

Iida Kalakoski is an architect and a Doctor of Science in architecture whose doctoral thesis in 2023 discussed architectural conservation in the widening scope of heritage. Kalakoski teaches the history of architecture and the management of built heritage and works as the head of the doctoral program in the Faculty of Built Environment at Tampere University. Her research

interests include various aspects of architectural heritage, its preservation and management, as well as prevention of demolition. Kalakoski has published her research widely both in Finnish and international journals. She has worked in the Finnish Heritage Agency and holds several positions of trust in the fields of architecture and architectural heritage. Furthermore, Kalakoski actively participates in discussions about built heritage in media interviews and through writing and giving lectures to a wide audience.

Athanasios Kouzelis is a former professor at the Athens Institute of Technology and the University of Western Attica. During the course of his academic career (1986-2019), he taught design and architecture theory. He also taught design methodologies in second-cycle and postgraduate programs at EU Universities of Technology and Applied Arts. From 2020 to 2023, he collaborated as a research associate with the Department of Architecture and Civil Engineering, Chalmers University of Technology, publishing research articles on compensation as an integrated planning paradigm in cultural heritage areas, with a particular focus on learning from history. He has written architecture and design manuscripts and articles in Greek, English, Swedish, and Danish, as well as published books in English on architectural and design praxis, such as *Architecture as praxis, The object as form and value, The Hanseatic League—History and culture, and Design Praxeology*.

Santiago Rodríguez Pérez is an archaeologist and holds a PhD in Art History (2024). His research focusses on the history of peasant societies in the northwestern Iberian Peninsula, analysing their historical and cultural context through their cultural heritage. His main areas of work include the socio-historical study of the landscape and cultural heritage of rural communities (vernacular architecture, tangible and intangible heritage, etc.); the application of new technologies (DBMS, photogrammetry, GIS, etc.) to the documentation and digitisation of heritage; current processes of change in rural communities; and the dissemination, conservation, and restoration of built heritage. In his doctoral thesis, he examined the historical evolution of the landscape and architecture of the Navia River valley in Asturias, which serves as the foundation for his ongoing long-term research on rural communities, their history, and future challenges. He is a member of the EsArt and Llabor research teams at the University of Oviedo, participating in various projects.

Riina Sirén, a Finnish architect and building conservator, focused on the sideline of cultural heritage. Together with Iida Kalakoski, they have written several articles on the transformation of built heritage and the values behind the change. Currently they are writing a popular non-fiction book about building demolition in Finland. Specialised in building surveys and the history of conservation, Sirén teaches the history of architecture and the management of built heritage at Tampere University, Finland. She is working on her doctoral dissertation regarding the intangible dimension of architectural heritage. In addition to her research, Sirén is a passionate home repairer and amateur artist, studying art history. In both art and research, Sirén is interested in material care, scarcity mindset, fractures, detrition, and, in general, all the blind spots of heritage evaluation.