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Designing a Multi-functional Yurt as a Cultural Landmark and Tourist Attraction

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Abstract:

The economy of Lapland, Finland, is based on nature-based tourism, which is why I designed a space to meet this demand. This thesis presents the design of a multi-functional yurt inspired by traditional yurts worldwide. The project aims to bring new life to these historic shelters by adapting them into flexible spaces for tourists and locals in nature across Finland. These modern yurts are intended as attractions for visitors and as places where local people can showcase their crafts, artworks, and traditional products. Additionally, the yurts will provide unique spaces for exhibitions, art galleries, and sales, which will support local artists and help strengthen the community. The thesis proposes a unique yurt design tailored to the specific needs of Äkäslompolo Village. The yurt design will be shaped to fit the natural landscape and cultural preferences of the region. The structure will act as a cultural landmark that combines Finnish cultural symbols, sustainable materials, and nature-inspired shapes that blend well with their surroundings. My research focuses on understanding local needs to discover how the yurt can meet specific cultural and social needs in a location, how it respects nature by using sustainable materials and blends the design naturally into the surroundings, as well as how it can foster cultural connections between tourists and the local community.

This thesis describes a collaboration with Navetta Gallery in Äkäslompolo. The yurt is designed to extend the gallery space, featuring Finnish cultural symbols like the Fibonacci sequence and tree imagery, and using natural materials alongside modern design elements. This design is intended to be both an art space and a cultural landmark to become a hub that brings tourists and locals together in one place and time to strengthen their relationships. Throughout the thesis, the focus on cultural, environmental, and social factors highlights the yurt's potential to serve as a flexible, culturally significant solution to various challenges in Lapland. By examining the design process, material choices, and possible uses, this research contributes to modern yurt design, promoting cultural sustainability, innovative architecture, and community-centered design.

Keywords: Sustainable tourism, multi-functional architecture, cultural landmarks, yurt design, Finnish culture, community development, sustainable materials, cultural expression, tourism infrastructure, nature-inspired design, environmental art

Contents

Introduction

“Architecture is what nature is unable to do. Nature is unable to do what man does” (Portoghesi, 2000, p. 92). These words are not a justification for dominance over nature, but a quiet challenge. If we, as designers, are called to do what nature cannot, we must also ask: how do we design in a way that honors what nature already does well? My role as an architect is not to interrupt nature but to shape it gently, listen, and respond. By my design, I shape other people's behavior with nature and connect them with it. In today’s world, the purpose of architecture is shifting. It is no longer just about function or form. More and more, we are being asked to create spaces that are in conversation with their surroundings, architectural forms that engage with cultural heritage, environmental balance, and a deepening respect for place.

Lapland, with its vast Arctic skies and quiet forests, offers a rare opportunity to think differently about how we build. It is not a place that demands large structures or dramatic interventions. It asks for sensitivity, for a slower pace, for architecture that blends into the rhythm of nature, silence, and story. It is in this context that I began to think about the yurt, not as a foreign form to be copied, but as an ancient idea to be reimagined. “If you want to create something new, search for that which is ancient” (Pallasmaa et al., 1981, p. 29). That idea became a compass for me. The traditional yurt, used for centuries by nomadic communities around the world, especially central Asia, was not only a shelter, it was a way of living with nature. Made from wood and felt, designed to be easily assembled and moved, the yurt respected the land it sat on. It offered warmth, flexibility, and simplicity. And yet, it carried meaning, it held culture, ritual, and identity. This thesis began with a question: What would happen if we took that form, that philosophy, and adapted it to the cultural and environmental landscape of Finnish Lapland?

This research explores how the traditional principles of the yurt, its form, materials, and purpose, can be transformed into a multi-functional space that serves both as a cultural landmark and a tourist destination. When I first started this project, I thought I was designing a structure. But as the process went on, I realized I was working with something

much more intangible, a place. And not just “location” in the geographic sense; "place, as many cultural geographers argue, is where stories, identity, and memory converge" (Convery et al., 2012, p. 1). For this reason, every decision in this project, from the materiality of wool to the circular form of the yurt, was made with Lapland's landscape and lived culture in mind. Places like Äkäslompolo carry meaning not only because of their physical features but also because of how people feel and remember them. I was struck by how even temporary visitors, like myself, could start forming bonds with a space through hands-on engagement. That’s when I understood what meant “space made meaningful” (Convery et al., 2012, p. 1). Moreover, my goal is not to recreate the past, but to learn from it. The yurt, reimagined with Finnish timber, discarded wool, and design language rooted in local symbols, becomes more than a structure. It becomes a place to gather, tell stories, and experience craft and community. A place that reflects both the memory of nomadic life and the current desires of local people and visitors. In this way, the yurt becomes a bridge between heritage and contemporary life. A small structure with the potential to carry big ideas like sustainability, identity, belonging, and maybe, above all, a reminder that architecture can be soft, modest, and meaningful all at once.

My proposal for creating a sustainable Finnish yurt was developed as part of a collaborative effort under the Villainno Project (in English Wool Innovation Project), an initiative focused on revitalizing craft heritage and promoting innovation within rural and cultural tourism in Lapland. The Villainno Project aims to foster sustainable, bio-based solutions by connecting traditional knowledge with contemporary design practices. Our team included students and emerging designers from the University of Lapland’s Master’s Programme in Sustainable Art and Design. The core design work, including the Finnish Yurt concept, was carried out in collaboration with me, Hanieh Ahmadi, and with designer and co-researcher Lola Cervantes, supported by Villaino’s broader research framework. Other team members contributing to related phases of the project included Fian Arrafiani and Dorsa Abolfazli and with additional support and supervision from Maria Huhmarniemi. Together, we worked across disciplines, architecture, textile design, sustainable materials research, and cultural heritage studies, to develop the design concept Felted Futures, within which the Finnish Yurt was a central component. Our collaboration combined field

research, traditional felting techniques, sustainable material experiments, and participatory workshops with local communities, all to reimagine wool as an architectural material while emphasizing cultural sustainability.

Before starting my thesis, I would like to express my heartfelt gratitude to my supervisor, Maria Huhmarniemi, for her invaluable guidance, support, and encouragement throughout my thesis. Her expertise, patience, and thoughtful feedback have been instrumental in shaping the direction and depth of my research. I truly appreciate the time and care she invested in helping me grow both academically and personally during this process.

Nature-Focused and Sustainable Design

Designing with nature isn't just a stylistic choice, it's an ethical choice. In Lapland, where the environment plays such a central role in shaping daily life, culture, and even identity, it feels essential that architecture respects and reflects the landscape rather than compete with it. The forests, snow-covered hills, and silence all have a presence that demands humility from design. This thesis takes that responsibility seriously, aiming to create a structure that doesn't just sit in nature, but lives with it. Portoghesi (2000) speaks of "architecture that respects nature as its model and collaborator," a perspective that resonates deeply with this project. The yurt design is not simply placed on the land; it emerges from it. Its circular form avoids rigid boundaries, its height stays low to the horizon, and its shape borrows from natural geometries like the Fibonacci spiral, found in everything from pinecones to tree branches. These decisions are not just aesthetic; they're symbolic. They speak to a desire to work with, not against, the environment.

My project centers on materials that are not only sustainable but also local and meaningful. Timber and wool, readily available in the region, are chosen not because they are trendy, but because they are logical, rooted, and renewable. Ormondroyd and Morris

(2015) have written about how designing with natural materials allows architecture to age with dignity, breathe with its environment, and reduce its ecological footprint. Wool, in particular, becomes a way to connect with both place and tradition. Often treated as waste, discarded wool is reclaimed here as insulation, texture, and symbol, which ties together sheep farming, craft, and sustainability. This design also responds to the growing demand for environmentally responsible tourism. As Butler (1999) outlines, sustainable tourism should protect both natural landscapes and cultural legacies. In Lapland, where the tourism industry can easily tip into overdevelopment or superficiality, there's a real need for smaller-scale, thoughtful interventions that slow visitors down and invite them into deeper relationships with place. This yurt design doesn't aim to dominate the view or create spectacle. Instead, it invites people to step inside a structure that feels quiet, warm, and grounded, built with the land, not on top of it. In the end, nature-focused and sustainable design is about making decisions that reflect care. Care for the materials, Care for the stories they carry, and care for the people, both locals and visitors, who will move through these spaces. The yurt becomes a reflection of that care: modest, intentional, and alive to its surroundings.

Environmental art as a tool for sustainable Arctic Tourism

In addition to sustainability, I believe that my project also draws from the practice of environmental art as a framework for engaging people with place and nature. As Jokela and Huhmarniemi (2019, p. 63) said, ″ environmental art is a form of contemporary art that is usually created outdoors; it increases the attractiveness of a built-up environment and leads to sensitive bodily experiences in the natural environment." Creating the project in the natural landscape is not only aesthetically pleasing but also provides a platform for social and environmental discourse for people. This makes environmental art suitable for sustainable tourism and placemaking in the Arctic region. "The environment and economy of the Arctic region are at a turning point" (Jokela & Huhmarniemi, 2019, p. 63). In response, environmental art can lead to a functional design strategy that supports sustainability and regional identity, playing a key role in this important region and contributing to further economic prosperity by targeting tourists.

"In the Arctic region, nature is an important factor of attractiveness for tourism, so it is natural that attention is paid to environmental art. The cooperation between environmental art and tourism is one opportunity for developing new tourism services. Environmental art is a multifaceted form of art that has orientations that differ from each other"(Jokela & Huhmarniemi 2019, p. 65). According to this, the versatility of environmental art, from trail markers to installations, makes it particularly effective in multifunctional spaces like yurts. When applied to architectural structures like yurts, environmental art can enhance cultural authenticity, invite interaction, and even support ecological goals through the use of local and biodegradable materials. By designing a yurt as a multifunctional space, serving both tourists and locals, environmental art offers a bridge between place-making and placetelling. It connects visitors to local culture and natural surroundings, creating meaningful, respectful, and sustainable tourism experiences.

The Role of Cultural Landmarks in Lapland

Cultural landmarks do more than represent a place, they embody its memory, identity, and future. According to Huhmarniemi & Hiltunen (2022, p. 64) the Western imaginary often frames the Arctic as a pristine, uninhabited winter landscape, remote and culturally vacant. This reductionist view, referred to as Arctification, fails to acknowledge the lived experiences of those who inhabit the region, including Indigenous Sámi communities, immigrants, and other cultural minorities. Instead of a monolithic wilderness, the Arctic is a pluricultural space, multiethnic, multilingual, and multinational, shaped by histories, migrations, and evolving traditions. This means that this region has the potential to be a place of cultural exchange.

In Lapland, where the vast landscapes often overshadow human presence, built structures that reflect local knowledge and tradition can become anchors of meaning. They help maintain cultural continuity, provide platforms for expression, and create

spaces where locals and visitors alike can meet and reflect. Cultural tourism, as Richards (1996) emphasizes, is not just about consuming heritage but about building understanding. "Traditional local knowledge and skills with long historic roots ought to be recognized as a valuable form of cultural heritage for contemporary culture" (Härkönen et al., 2018, p. 2). When travelers encounter traditions, crafts, and stories that are rooted in place, their experience becomes more than passive observation, it becomes a connection. In the Arctic context, where communities are small and cultural practices are often intertwined with the land, the impact of meaningful, locally grounded landmarks can be profound. This project proposes that a reimagined yurt, a form historically tied to nomadic life, can serve as one such landmark. Redesigned using Finnish materials and cultural references, the yurt becomes more than a shelter; it becomes a gathering space. It invites visitors to engage with Finnish traditions not through static displays, but through active participation: art exhibitions, storytelling circles, craft workshops, seasonal events that align with the rhythms of local life, and most importantly, the locals themselves. Moreover, when residents are involved in shaping the cultural message of a space, it enhances their sense of ownership and reinforces collective identity. A yurt that features local wool felting, timber framing, and design elements inspired by Arctic forms displays culture and lives it.

Such a structure could also respond to the need for sustainable tourism infrastructure that does not overwhelm local communities. McKercher and du Cros, 2002) emphasize that cultural tourism must be mutual; it must offer something meaningful to both hosts and guests. In that spirit, this yurt offers a modest, low-impact space that celebrates local heritage while supporting the economy through artisan sales and cultural programming. In a time when tourism development often leans toward spectacle or seasonal excess, there is something radical about building slow, small, and deeply grounded spaces. Cultural landmarks like this proposed yurt offer a different kind of value: one rooted in respect, in continuity, and in the lived experiences of the people who call Lapland home.

Problem Statement, Aims and Objectives

Lapland, known for its striking Arctic landscapes, unique seasonal light cycles, and rich blend of Sámi and Finnish cultures, attracts thousands of nature-based tourists each year. However, despite this influx of visitors and the region's deeply rooted cultural and ecological richness, there is a noticeable lack of architectural spaces that facilitate genuine and meaningful exchange between locals and tourists. Visitors often experience the wilderness but miss the opportunity to understand the cultural narratives embedded in the land, materials, and traditions of the people who call Lapland home. Currently, architectural infrastructure in Lapland tends to prioritize functionality, accommodations, transportation hubs, or visitor centers that meet basic logistical needs. While practical, these spaces often lack cultural resonance or storytelling capacity. Few places exist where tourists can meaningfully engage with the region's heritage, whether through hands-on experiences with traditional handicrafts, exhibitions on local customs and history, or interactive educational programs that highlight Indigenous knowledge systems. This results in a tourism experience that remains largely surface-level and disconnected from the people and the environment it depends on.

The Felted Futures project, developed within the VillaInno initiative and honored as the overall winner of the 2025 Engage4BIO "This is Bioeconomy!" The International Design Award was born in response to this very gap. Through the collaborative efforts of designers, researchers, and architects, the project reimagines the traditional yurt as a soft architectural space that merges local craft traditions, circular economy practices, and contemporary spatial needs. The proposal, centered around discarded raw wool, draws from Indigenous felting techniques and applies them innovatively to create flexible, warm, and symbolic shelters deeply rooted in place. Moreover, there is an increasing recognition that environmental challenges are deeply entangled with political, cultural, and economic systems. As Demos (2016, p. 8) argues, art and design practices engaged with ecology have the power to rethink politics itself, emphasizing that environmental issues are inseparable from questions of justice, economy, and culture. In this project, designing a

yurt for Lapland is not simply about constructing a shelter but about acknowledging the cultural and ecological interconnectedness of place and community.

The yurt is not just a structure; it is a metaphor. Its circular, inclusive form invites dialogue. Its tactile surfaces bring nature indoors. And its portability speaks to resilience and adaptability, values deeply needed in Arctic architecture today. To address these needs, this research poses this question: How can architecture in wilderness Lapland be designed to support sustainable tourism while reflecting local cultural and environmental values? By addressing this question, the research aims to explore how traditional wisdom, bio-based materials, and co-design practices can inform a new kind of space that serves both the land and the people who move through it. My thesis aims to design and propose the construction of a yurt that acts as both a cultural landmark and a tourist attraction, something rooted in the landscape and values of Lapland, yet open to interaction, learning, and artistic expression. At the core of this idea is the belief that architecture can be more than functional space; it can also carry meaning, preserve memory, and create a connection between people and place. This yurt is not meant to be a replica of the past, but rather a reimagining that respects traditional nomadic forms while adapting them to reflect Finnish identity, arctic materials, and today's environmental priorities.

One of the key starting points of this research has been to ask how a discarded, overlooked material like raw wool can become a vital part of architectural design? What if sustainability weren't just an external feature, but something woven into the very texture of a space? In this way, the objective evolved, not simply to build a structure, but to find ways that natural materials like wool and timber could speak to both ecological ethics and cultural heritage. The felting of wool, for example, became not only a method of insulation but also a creative act that connects to local craft traditions, environmental cycles, and the sensorial experience of visitors. The design is inspired by Paolo Portoghesi's concept of nature as a collaborator in architecture (2000), an idea that shaped how the structure takes form, soft, curved, and organic, with a geometry informed by the Fibonacci spiral. Ormondroyd and Morris's (2019) research on sustainable materials further guided decisions around construction methods, emphasizing durability, environmental harmony, and the use of renewable resources. My thesis also draws on the work of Butler (1999),

who highlights the importance of designing with long-term ecological impact in mind, particularly in tourism-focused regions.

At the same time, the project explores the yurt's potential as a cultural and economic platform. Drawing from McKercher and du Cros's (2002) ideas on cultural tourism and heritage management, the design aims to offer a space where traditional crafts can be displayed and sold, stories can be shared, and tourists can experience Lapland's culture in an interactive, respectful way. It is this intersection between cultural relevance, environmental responsibility, and visitor engagement that defines the objectives of the project. The hope is to create a space that is not just visually or functionally interesting, but meaningful and lasting, for the community it belongs to, and for those who come to experience it.

Significance of the Study

The significance of my study lies in its attempt to bring architecture, culture, and sustainability into meaningful dialogue through a form as humble and ancient as the yurt. At its core, this project is about finding a way for design to be responsive; not only to the land it occupies but to the stories, traditions, and materials that already exist in that place. By adapting the yurt into a culturally rooted and environmentally conscious space, this thesis offers a design proposal that addresses real community needs while honoring the rhythms and textures of life in Lapland.

The contribution of this work goes beyond architecture as structure; it offers a model for how built environments can hold cultural memory and natural purpose side by side. In a time when tourism often places pressure on fragile landscapes and communities, this project suggests another way, where design slows down, listens, and becomes part of the fabric of a place rather than imposed upon it. The yurt serves as a bridge between past and present, between locals and visitors, between tradition and experimentation. Drawing on Portoghesi's (2000) call for nature-centered design, the structure emphasizes forms and materials that respond to the Arctic environment with sensitivity rather than

resistance. Similarly, the work of Ormondroyd and Morris (2019) on sustainable natural materials shaped how the project approached construction, favoring local wool, timber, and felting processes that reduce environmental impact while connecting to craft practices. In doing so, the yurt doesn't just use sustainable materials; it becomes a vessel for expressing what sustainability looks and feels like in this specific context.

This study also aligns with the ideas of Richards (1996) and Butler (1999), who both highlight the need for tourism to be culturally rooted and community-focused. In Lapland, where much of the tourism industry is seasonal and sometimes disconnected from local life, a structure like this offers a more grounded alternative. It provides space not only for tourists to experience something authentic and place-based, but also for locals to share their knowledge, creativity, and history in a setting that values their presence. Ultimately, the significance of this thesis is not just in the structure it proposes, but in the approach it takes. It suggests that architecture can carry cultural meaning and ecological care at the same time. That a tourist shelter can also be a storytelling space. And that even small, quiet interventions, like a yurt on the edge of a village, can help shift the conversation about what responsible, respectful design looks like in the Arctic today.

Theoretical framework

Before diving into the design and process of my project, it's necessary to reflect on the concepts that form its foundation. This thesis is not only about building a structure, it's about what that structure means, where it comes from, and who it is meant to serve. The yurt I propose is more than a shelter. It's a symbol, a gathering point, and a cultural interface between people and place. To understand its role, we need to explore the histories, meanings, and systems that support it. The history of nomadic shelters offers a rich starting point. Long before architecture was formalized into disciplines, people were designing with movement, climate, and necessity in mind. From Central Asia to the Iranian plateau, the yurt has served as a mobile home, functional, symbolic, and deeply responsive to nature. These structures weren't built to dominate landscapes but to live lightly within them. They reflect a way of life that values flexibility, community, and the rhythms of the environment. By revisiting these traditions, I find clues about how to create architecture that isn't fixed or rigid, but adaptable, ready to evolve alongside its users.

This perspective naturally connects to the growing field of nature-based tourism. As more people seek meaningful experiences in remote and ecologically rich areas like Lapland, tourism becomes not just an economic tool, but a cultural exchange. Visitors are no longer passive observers; they are participants in local stories, traditions, and economies. Nature-based tourism offers a way to support local communities when it's done thoughtfully. It asks us to design spaces that are not just beautiful or useful, but also respectful of the land, the people who live there, and the cultures that have shaped those places over generations. The idea of design in nature becomes especially relevant here. Nature isn't just a backdrop, it's a collaborator. Following principles of biophilic and ecological design, architecture can reflect the logic of the landscape. Natural materials like wool and timber aren't just sustainable, they carry memory, texture, and presence. Organic forms like the Fibonacci spiral, which I've used in this project, remind us that beauty and structure can emerge from the same natural order. When we design with

nature, not just in nature, we open up new possibilities for spaces that feel grounded, alive, and deeply connected to their surroundings.

At the same time, culture and history remain central. Tourism often relies on a sense of the past: the stories we tell about a place, the traditions we showcase, the crafts we preserve. But these aren't static displays, they are living, evolving expressions of identity. The yurt, in this project, becomes a vessel for those expressions. It's a space where local knowledge can be shared, where traditional crafts like felting can be experienced firsthand, and where the past meets the present in ways that feel immediate and personal. Architecture, in this sense, becomes a kind of mediator, shaping how locals see their traditions reflected, and how tourists come to understand and respect them. A structure like the yurt doesn't just provide shelter; it provides a stage for exchange, a canvas for storytelling, and a space for belonging. When architecture is done with care and intention, it can influence how a community feels about itself and how outsiders engage with that community. It can build pride, foster connection, and invite reflection. By weaving together these ideas, historical nomadic architecture, nature-based tourism, ecological design, cultural storytelling, and social impact, this theoretical framework lays the foundation for the work that follows. It supports the vision of the yurt as more than an object. It becomes a bridge between movement and rootedness, between heritage and innovation, and between the people who call Lapland home and those who come to learn from it.

Historical aspects of Nomadic Shelter and the Evolution of the Yurt

A shelter is one of the most fundamental human needs, protecting the environment, safety, and a space for daily activities**.** "Early man lived under the trees and stars. At some time he found or improvised shelter." (Kahn & Easton, 1973, p 4). Shelter is traced back to the origin of human civilization. It is an essential aspect of human survival, protecting from environmental hazards, such as wild animals, and extreme weather conditions. The earliest forms of shelter used structures made from rocks, leaves, and branches.

Changing weather conditions, expanding agriculture and population, and the development of metal tools altered early man's shelter need (Kahn & Easton, 1973, p 4). Mobility is a defining feature, driven by pastoralism, trade, and environmental factors such as seasonal changes and resource availability. Nomadic societies developed sophisticated social structures, economies, and cultural practices despite their mobile lifestyles. Beyond its functional role, shelter embodies cultural identity and reflects societal values. Traditional shelters such as nomadic yurts, igloos, and longhouses are deeply tied to the environmental conditions and social structures of the communities that built them.

The yurt is an archetype of adaptable shelter, originally designed for nomadic lifestyles. By modernizing its form with sustainable materials and Finnish cultural motifs, this research preserves the concept of shelter as both a functional necessity and a cultural artifact. "Several of the nomadic tribes of the Near East and Central Asia, from Iran to Mongolia, have for several thousand years lived in a remarkable form of shelter: the yurt" (Kahn & Easton, 1973, p 14). These structures were designed to be easily assembled and dismantled to suit migratory patterns, withstand extreme climates (hot summers and cold winters), and provide flexible interior spaces for communal living. "Yurts are particularly interesting shelters because they are so easily transported yet so solid in look and construction"(Kahn & Easton, 1973, p 14). The yurt (or Alachigh in Persian, or ger in Mongolian) is one of the oldest and most efficient nomadic shelters, dating back over 3,000 years. Traditionally made from wooden frames, felt insulation, and a circular layout, the yurt symbolizes harmony with nature, adaptability, and cultural continuity. The details of the structure are: "A large circular roof opening allows light and fresh air into the yurt and provides an exit for smoke. The interior of the yurt is organized around the Tor (honourable space) directly opposite the entrance" (Convery et al., 2012, p. 80).

On the Iranian side of the north-east border, more and more Turkmen grazing is going under the plough. Now the yurts tend to be poor men's dwellings associated with villages, or they act as workshops for richer, settled tribesmen. Less than ten years ago it was a common enough sight to see groups of tents on the vast plain of the Gorgan; now it is a rare event. Nomadic cultures have existed for thousands of years, adapting to diverse

environments from deserts to steppes to tundra and nomadic architecture are distributed around the world with different shapes answering to their special climate (Figure 1). Early structures included tents, tepees, and yurts, each reflecting the materials and techniques available in different regions.

Figure1. Map of Distribution of Nomadic architecture around the world that prepared and designed by Cervantes and Ahmadi 2024.

Over time, innovations in design and construction techniques improved the functionality and comfort of nomadic dwellings. Portability and ease of assembly are essential features, allowing nomads to move their dwellings with seasonal migrations or changing circumstances. As Demos (2016, p. 23) notes, Indigenous traditions have voiced

ecological wisdom for centuries, emphasizing sustainable ways of living in sensitive environments without falling into an idealization of Indigeneity. This understanding influences how the yurt project draws from vernacular knowledge, not merely as nostalgia, but as living, adaptive wisdom for future sustainable design. Nomadic structures prioritize insulation and weatherproofing to provide warmth in cold climates and ventilation in hot climates. Flexibility and adaptability enable nomadic architecture to meet the needs of diverse environments and cultural practices.

Nature-based tourism

Tourism connects people with places, cultures, and experiences. While it spans leisure, education, and cultural exchange, nature-based tourism stands out for its rapid growth and unique potential to support both conservation and community development. It attracts visitors to natural settings, such as national parks, forests, and coastlines, not just for recreation, but for meaningful engagement with the environment. These experiences are now central to global tourism and sustainability efforts. "Nature-based tourism plays a significant role in the global tourism industry and is growing at a faster rate than tourism overall" (Buckley et al., 2001, pp. 7–10). "This sector spans public, private, and non-governmental domains and includes a wide range of activities from wildlife viewing and boating to hiking and skiing" (Buckley et al., 2001, pp. 7–10). Its scale, growth, and diversity make it a central focus of sustainability-oriented tourism research. The increasing demand for immersive, nature-centered experiences brings both opportunities and challenges, particularly in balancing ecological integrity with economic and sociocultural benefits.

"As with all forms of tourism, the management of nature-based tourism is shaped by the principles of sustainability. Since the 1992 Rio Earth Summit, the sector has increasingly adopted policies that aim to achieve environmental, economic, and sociocultural balance" (Buckley et al, 2001, pp. 7–10). "Sustainability is not just a guiding value but a core

criterion of ecotourism" (Buckley et al., 2001, pp. 7–10)."Revenue generation through visitor fees and permits has emerged as one potential solution, with initiatives such as Australia's Nature and Ecotourism Accreditation Program (NEAP) offering a model for aligning financial sustainability with environmental stewardship" (Buckley et al., 2001, pp. 7–10). In some cases, nature tourism has even proven to be economically superior to extractive industries like logging, as shown in modeling studies from New South Wales, where tourism in native forests generated more long-term value than timber production (Buckley et al., 2001, pp. 7–10).

Nevertheless, the environmental impacts of nature-based tourism remain a concern. "Activities traditionally seen as benign, such as walking or wildlife viewing, can introduce pathogens, disrupt habitats, or lead to the cumulative degradation of fragile ecosystems" (Buckley et al., 2001, pp. 7–10). The management of these impacts requires not only better ecological monitoring but also political will, public awareness, and sector-wide cooperation. "In coastal zones, for example, small-scale boating has been linked to pollution, yet regulation is often weak due to fragmented industry identity and lack of stakeholder accountability" (Buckley et al., 2001, pp. 7–10). "Tourism development can also interact with external environmental pressures, such as mining, deforestation, or amenity migration, in ways that compromise protected areas even when tourism itself is managed sustainably" (Buckley et al., 2001, pp. 7–10). Amenity migration, where people relocate to natural areas after visiting them as tourists, can result in unplanned development that undermines the very qualities that attract visitors. This underscores the need for integrated land-use planning and proactive management beyond park boundaries.

At the same time, non-consumptive wildlife tourism, including both zoo-based and free-ranging experiences, has been shown to contribute to conservation goals and environmental education, expanding the potential of nature-based tourism to support ecological values (Buckley et al., 2001, pp. 7–10). However, even these positive impacts must be weighed against the pressures of increased visitation. Protected-area agencies now face the dual challenge of generating tourism revenue while protecting the ecosystems that attract tourists. Effective tourism management must therefore be

strategic, equitable, and adaptive, capable of navigating the tensions between conservation, visitor satisfaction, and financial viability.

In this study, the use of a modular yurt structure serves as a design response to these complexities, positioning sustainable architecture as a tool for nature-based tourism development. By integrating ecological aesthetics with cultural heritage and community engagement, the yurt model aligns with the broader goals of sustainability in tourism, demonstrating how design can bridge the gap between experience, education, and environmental care. This theoretical grounding informs the architectural approach and frames the project within an ongoing dialogue about responsible and resilient tourism in protected and culturally significant environments. Lapland offers an ideal context for this approach. As a major cultural and eco-tourism destination, known for Sami heritage, Arctic wildlife, and the Northern Lights, it draws visitors seeking a connection with nature and culture. A yurt, as both a functional shelter and a cultural symbol, can act as a focal point for immersive, sustainable tourism. Its design shapes how visitors perceive Finnish traditions and the natural environment, reinforcing Lapland's identity as a place where ecology, culture, and experience are deeply linked. Through thoughtful design, nature-based tourism can be more than just sustainable, it can be meaningful.

Architecture as an Ecocultural Engagement

In Arctic contexts, architecture must function beyond the constraints of form and utility—it must be responsive to place, culture, and ecology. As Jokela and Huhmarniemi note, "consideration of cultural sustainability is a very relevant part of aim setting and evaluation of arts and art education in the Arctic" (2022, p. 6). This idea underpins a growing movement in Arctic design and art that seeks to restore equilibrium between human activity and the more-than-human world through ecocultural grounded approaches.

This study explores the design of a modular yurt adapted to the Finnish Lapland as a nature-based, community-oriented space for tourism and cultural activity. Drawing from traditional nomadic forms, the yurt incorporates local timber and wool insulation, aligning with the Arctic building tradition. Its organic geometry, guided by natural patterns such as the Fibonacci sequence, invokes a harmony with the surrounding landscape.

Such an approach resonates with new genre Arctic art education (AAE), which integrates art, ecology, and activism. AAE emphasizes “situational learning within the ecocultural mesh” and engages with “social, political and environmental issues in ways that connect art, communities and Northern cultures” (Jokela & Hiltunen, 2024, pp. 14, 15). This orientation treats art and design not as isolated practices but as cultural tools for sustainability transformation. The yurt, as a gathering space, reflects these values through participatory use, hosting workshops, exhibitions, and performances that enable community interaction and storytelling. AAE is informed by posthumanist theory, which challenges the human-nature dichotomy. “Posthumanism is understood mainly as a reconceptualisation of the human-nature dichotomy, the dualistic separation between humans and nature” (Jokela & Hiltunen, 2024, p. 14). In this framework, architecture becomes a medium for “knowing-with", a collaborative, relational way of engaging with the land. As it said, “Knowing-with is about togetherness, about being in relations with multiple others” (Jokela & Hiltunen, 2024, p. 24). The yurt, in this sense, is not an object on the land but a participant within it, facilitating dialogue between human users, natural systems, and cultural knowledge.

Additionally, the project draws on Northern knowledge, a broader category than Indigenous knowledge, which “refers to understandings and knowledge based on the Arctic region’s ecocultures, including common traditions, social systems and the sustainable use of natural resources” (Jokela & Hiltunen, 2024, p. 24). This includes tacit and embodied practices passed on through making and living with nature, reinforcing the importance of multisensory and material learning in design processes. The design of the yurt also reflects resilience and revitalization, central to the aims of AAE. “In the AAE, resilience is linked to the transformative continuity of traditions through ecocultural revitalisation” (Jokela & Hiltunen, 2024, p. 26). This form of design is not static or

nostalgic, it is adaptive, preparing communities to respond to change while sustaining cultural roots and environmental balance.

Ultimately, by embedding architecture in ecocultural contexts, this study contributes to the broader mission of AAE: to foster sustainability, equity, and meaning in the Arctic. The yurt becomes a symbol and tool of ecocultural coexistence—supporting tourism, creativity, and the continuity of Northern knowledge. As the authors conclude, “the AAE is a future-oriented approach aiming to contribute to Arctic sustainability transformation” (Jokela & Hiltunen, 2024, p. 28).

Methodology

To conduct my study, I used an art-based action research approach along with reflexive research. These approaches are particularly suitable for my project, as they allow me to gain knowledge through art and artistic collaborations while providing a platform to express my creative journey. Art-based action research is a cyclical process that integrates artistic practice with problem-solving and stakeholder engagement, while reflexive research enables me to examine my role and decisions as an artist-researcher critically. By combining these methodologies, I was able to propose a design that reflects Finnish cultural values, promotes sustainable development, and engages local communities in Lapland. To better understand this methodological framework, it is essential to explore three key components: art-based research, action research, and the integration of these approaches in art-based action research, as well as reflexive research, which is central to the creative process. This research began with a question that is as much about people and place as it is about design: How can architecture in wilderness Lapland be designed to support sustainable tourism while reflecting local cultural and environmental values? As climate, tourism, and cultural identity continue to shape life in Lapland, this question felt increasingly relevant; not only as a personal exploration as a designer, but also as a larger conversation about how we build in ways that respect what's already there.

At its heart, my thesis seeks to explore how a traditional structure, like the yurt, can be thoughtfully reimagined for a contemporary Finnish context. It is not about recreating something foreign or nostalgic, but about learning from the principles of nomadic design, adaptability, mobility, simplicity, and using them to respond to the specific needs and values of communities in Lapland today. The intention was never just to build a shelter, but to create a space that tells a story, that blends past and present, nature and culture, function and meaning. The aims of this study are rooted in four interconnected themes, which are cultural integration, sustainability, community engagement, and tourism development. Culturally, the project aims to design a structure that reflects Finnish

identity, not only through symbols or surface aesthetics, but in the way it functions, feels, and interacts with its environment. The goal is to create a yurt that locals can see themselves in a structure that feels familiar and meaningful, not imposed or abstract. By drawing on Lapland's own artistic and architectural traditions, this work aims to foster a deeper sense of place and pride among residents.

Sustainability, meanwhile, is not treated here as a trend or checkbox, but as a guiding value. The harsh Arctic climate demands materials and construction methods that are resilient, low-impact, and deeply connected to the land. My thesis tries to investigate how wool felting, local timber, and modular construction can serve both ecological and cultural needs. Inspired by nature-based design and eco-conscious architecture, the yurt becomes a way of asking what it looks like to build with the environment, not just in it. Equally important is the element of community engagement. This project would not have been possible without the input, stories, and feedback of local artisans, designers, and residents. Their involvement helped shape not just the technical decisions, but the tone and spirit of the design. Through participatory processes from wool felting workshops to collaborative prototyping, the research seeks to ensure that the final structure is not only aesthetically fitting but also socially embedded and relevant.

Finally, the aim of tourism development runs through all of these layers. The yurt is designed to serve as a welcoming, multi-functional landmark that enhances the visitor experience without overwhelming the local landscape or culture. It offers tourists a chance to engage with Lapland in a slower, deeper way through hands-on activities, storytelling, craft, and cultural exchange. In doing so, it contributes to a vision of tourism that supports, not extracts from, rural communities. Together, these aims form the foundation of a project that asks architecture to do more than provide shelter. It asks architecture to listen, to respond, and to reflect. It asks how we can build in ways that protect what matters, bring people together, and create beauty that belongs to the place itself.

Art-based action Research

The term “art-based research” was invented by Elliot W. Eisner in the 1990s (Leavy, 2018, p. 6). Art-based research is a methodology that uses artistic practice as a means of inquiry and knowledge production. According to Leavy (2015, p.5), art-based research "prioritizes creative expression and uses art to engage with audiences and produce meaning beyond traditional academic forms". Art-based research is particularly relevant to my project because it facilitates the exploration of cultural symbols, materials, and aesthetic forms through visual and creative experimentation. Key aspects of art-based research in this project include creative expression, cultural expression, and knowledge through making. Through sketching, modeling, and experimenting with sustainable materials such as timber and wool, I investigated how the design of the yurt could reflect Finnish culture and nature. Moreover, artistic practice allowed me to explore how cultural symbols like the Fibonacci sequence and tree motifs could be integrated into the yurt’s design to make it meaningful for local communities. As Jokela & Huhmarniemi (2018) note, art-based research often generates knowledge through the act of creation itself, as intuition and tacit knowledge play a key role in shaping outcomes. "Art-based research practices are a set of methodological tools used by researchers across the disciplines during all phases of social research, including data generation, analysis, interpretation, and representation. These emerging tools adapt the tenets of the creative arts in order to address social research questions in holistic and engaged ways in which theory and practice are intertwined" (Leavy, 2015, p. 4). As Jokela & Huhmarniemi (2018) also note, Art-based research is particularly effective in projects that aim to connect art with societal and cultural issues. This aligns with my intention to design a yurt that fosters cultural exchange and community engagement in Lapland.

Action research is a participatory methodology that seeks to address real-world problems through cycles of planning, action, and reflection. It emphasizes collaboration with stakeholders and continuous improvement based on feedback. Kurt Lewin, one of the founders of action research, described it as “a process that generates knowledge by

solving practical problems" (Leavy, 2015, p. 58). This approach is well-suited to my project, which seeks to design a functional and meaningful yurt that meets the needs of specific communities in Finnish Lapland. In this project, action research was applied through my engagement with artisans and students from the University of Lapland, the Villaino team, and the owner of the Navetta gallery to ensure the design reflected the needs and values of the place. Workshops and discussions provided valuable feedback that informed iterative changes to the yurt design. Action research allowed me to respond to the unique environmental and cultural contexts of Äkäslompolo by integrating observations from site visits into the design. Moreover, by experimenting with materials and prototypes, I was able to refine the yurt's structure to meet functional and aesthetic goals. Jokela & Huhmarniemi (2018) emphasize that action research is particularly valuable in Northern and Arctic contexts, where collaboration with local communities is essential for addressing cultural and environmental challenges. This perspective informed my approach to engaging stakeholders and adapting the yurt design to Lapland's specific needs.

Art-based action research combines the creative processes of art-based research with the participatory and problem-solving elements of action research. It is a cyclical process that integrates artistic practice, theoretical reflection, and stakeholder collaboration, allowing for iterative improvements and unexpected insights. Jokela & Huhmarniemi (2018, p. 9) note "Art-based action research is a research strategy which guides the process of research in the cycles of action research and uses art as a catalyst for development work". The cyclical nature of art-based action research includes the following stages. The initial goal was to design a yurt that functions as a cultural landmark, promotes sustainable development, and engages local communities. Site-specific research was conducted to analyze the physical, cultural, and social dimensions of Äkäslompolo. This included mapping local narratives, subjective experiences, and environmental conditions. I engaged in sketching, prototyping, and material testing to experiment with the design. The artistic process allowed me to intuitively explore forms and patterns, leading to unexpected insights.

Observations and feedback from community members and stakeholders informed refinements to the design. The entire process was documented through photographs, sketches, and written reflections, which served as research material for the study.

“Art-based action research is a research-based approach that aims to develop methods and approaches for artist-researchers or artist-teachers, and to seek solutions for problems and future visions identified in environments and communities. Art-based action research starts from research questions that are relevant to visual art education, to applied visual art, or from the viewpoint of the target environments and communities. The research proceeds in cycles that include planning, theoretical background work, artistic work or similar interventions, reflective analysis, conceptualization, and specification of objectives. The research process and its results are documented. The data for the process of analysis includes completed artistic production, and observations, and documents from activities and experiences. The research is published for the scientific community, the art world, and the general public. The research is evaluated, in part, on the basis of functionality” (Jokela et al. 2018, p. 53). Art-based action research allowed me to address challenges creatively while fostering collaboration with the communities involved.

Jokela et al. (2015) in their article discuss the origins and evolution of art-based action research (ABAR) as a method for fostering artistic and creative collaboration, particularly within Arctic and northern contexts. Developed at the University of Lapland, ABAR emerged as a regional development strategy addressing challenges such as rural depopulation, youth migration for education and employment, and an aging population.

Reflexive research is a critical approach in which the researcher continuously examines their role, decisions, and assumptions throughout the research process. It emphasizes transparency and self-awareness, recognizing that the researcher’s identity, experiences, and positionality influence the research outcomes (Leavy, 2015, p. 82). Reflexivity is especially important in art-based action research, where the researcher often occupies multiple roles, as an artist, a designer, and a member of the community.

In my study, reflexive research allowed me to critically reflect on my decisions, navigate the complexities of designing a culturally significant yurt, and engage meaningfully with the communities in Lapland. Reflexive research requires the researcher to be an active participant in the inquiry process, acknowledging their subjectivity and how it shapes the research. Reflexivity is fundamental in creative and participatory research methods because it enables researchers to evaluate their actions, identify biases, and adapt their approaches. In my study, reflexivity helped me critically examine how my personal experiences and artistic background influenced the design process, from conceptualization to material selection.

Leavy (2017) highlights that reflexive research involves not only documenting the researcher's thoughts and actions but also critically analyzing their impact on the project. For example, while designing the yurt, I reflected on how my cultural perspective influenced my preference for incorporating Finnish motifs such as tree patterns and the Fibonacci sequence. These reflections helped me strike a balance between honoring local traditions and incorporating my creative instincts.

While reflexivity enriched my study, it also presented challenges. Constant self-examination can be mentally and emotionally demanding, requiring the researcher to confront their assumptions and uncertainties. The reflexive process can sometimes feel chaotic, particularly in artistic research, where intuitive exploration and structured inquiry must coexist. I experienced this tension during the material experimentation phase, as I struggled to reconcile my creative instincts with the practical requirements of sustainable design. Additionally, reflexivity requires balancing personal subjectivity with scholarly rigor. Leavy (2017) advises that researchers document their reflections systematically to ensure transparency and accountability. To address this, I complemented my reflective journaling with visual and textual documentation of my design process, creating a comprehensive record of my decisions and their rationale.

My Position as a Researcher, Artist, and Person

The working process of this study highlights my role as a researcher, a designer, and as a person navigating through these roles. Each of these perspectives contributes uniquely to the development of the yurt design, but their intersection also brings challenges and opportunities for reflection. As Leavy (2015, p. 30) points out, researchers in art-based inquiries often navigate multiple identities, balancing creativity, critical inquiry, and personal insight to generate meaningful knowledge. This multiplicity has shaped my approach to the study and influenced the outcomes.

As a researcher, I had to adopt a systematic and reflective approach to explore how a yurt could serve as a cultural landmark and tourist attraction in Finnish Lapland. This role was new and challenging for me, as it required me to shift from purely artistic creation to structured inquiry and critical reflection. The researcher's role in art-based action research involves mapping the cultural and environmental context, engaging with communities, and documenting the process as research material. These responsibilities were central to my study, as I had to integrate theoretical knowledge, stakeholder input, and personal artistic exploration. One of the challenges I faced was maintaining a balance between my subjective artistic instincts and the objective need for research rigor. Reflexivity was crucial in navigating this challenge. By keeping a journal and documenting each stage of the process, I try my best to fully bring myself to the project to focus on different parts of the project, as Leavy recommends, so that the artist's skills can provide a wider palette of numerous explorative and communication tools to serve the study.

As an artist (Architect), I embraced the creative process as a primary means of inquiry. This role allowed me to experiment with forms, materials, and cultural symbols that could transform the yurt into a meaningful and functional space. Artistic intuition played a significant role in this process, I explored how Finnish cultural motifs, such as the Fibonacci sequence and tree imagery, could be integrated into the yurt's design. This process was iterative and intuitive, involving cycles of creation, reflection, and refinement. Artistic research often leads to unexpected insights and surprising results, which are

integral to the research process. For example, while experimenting with sustainable materials like timber and wool, I discovered ways to enhance the yurt's adaptability to Lapland's harsh climate, which added depth and functionality to the design. My personal identity and experiences significantly influenced the study. As someone who values cultural heritage and sustainable design, I was deeply invested in creating a yurt that reflects Finnish traditions while promoting environmental harmony. However, this personal connection also posed challenges. I often found myself emotionally attached to certain design ideas, which made it difficult to remain objective during the research process.

To address this, I drew on reflexive practices, as described by Leavy (2015), to critically evaluate how my personal values and assumptions shaped the study. For instance, I reflected on how my artistic background influenced my preference for certain forms and materials, and I sought feedback from community members and stakeholders to ensure the design aligned with their needs and perspectives. In addition, I viewed the project as an opportunity for personal growth. Navigating the roles of researcher and artist helped me develop new skills in documentation, collaboration, and critical thinking.

This project follows the ideas of Applied Visual Arts (AVA), a way of working developed at the University of Lapland. In AVA, artists and designers are not just creators—they are also researchers and collaborators. They work closely with local communities and environments to make projects that are meaningful and responsible. The AVA approach encourages learning through real-world experience and supports cultural, social, and ecological sustainability (Jokela, 2013, pp. 20–22). These ideas guided the yurt project. The design included natural materials like wool, traditional felting techniques, and community-based activities such as bike-felting. The goal was not only to design a shelter, but to create something that connects with place, culture, and people. The AVA method also highlights the importance of cultural identity and well-being in rural and northern areas (Jokela, 2013, p. 18), which fits well with the aims of this project in Lapland.

Artistic Methods in Yurt Development

Artistic practice played a central role in the data collection for this research, with sketching, modeling, material experimentation, and collaborative workshops serving both as creative processes and sources of research material. The data consisted of visual, physical, and written documentation that reflected the evolution of the project. My sketches captured early conceptual ideas, particularly how Finnish cultural symbols such as tree motifs and Fibonacci-inspired geometries could be integrated into the yurt's design. I drew several sketches for the shape of the yurt to find the best answer to the conditions such as climate, culture, landscape, and its harmony with nature. Small-scale models and 3D visualizations allowed for the exploration of structural logic, proportions, and landscape integration, providing tangible ways to test and refine the evolving architectural concepts. Although the 3D models were experimental and not finalized renderings, they offered valuable insight into structural relationships and spatial possibilities. Photographic documentation formed another significant part of the data. Photos recorded the progression of sketching, site visit, model-making, material testing, and community workshops. Special emphasis was placed on documenting the bike-felting experiments, where human-powered methods were used to transform discarded local wool into felted insulation. These photographs not only captured the technical processes but also reflected the participatory, community-centered aspects of the study.

In addition to visual materials, I made notes throughout the project. These notes served as reflective documentation, capturing design decisions, material observations, workshop experiences, and practical challenges encountered during prototyping. This reflective practice allowed for critical self-assessment, helping to align creative decisions with the project's broader aims of cultural integration and sustainable design. Together, these diverse forms of documentation, sketches, small models, 3D experiments, photographs, and reflective notes provided a comprehensive, layered understanding of the research process. They enabled a dynamic and evolving dialogue between concept, material, and

context, ensuring that each stage of the yurt's development remained responsive to both cultural narratives and ecological considerations.

Collaboration with Navetta gallery and Villaino team

Working closely with others was central to this project, not only to gather data, but to shape the design in a way that felt grounded in real relationships and lived experience. From the beginning, I did not carry this research alone. I was joined by the *Villaino team*, our creative collective, as a co-researcher throughout the process. Together, especially Lola Cervantes and I, we explored how artistic collaboration could serve as both a research tool and a shared practice. Our partnership allowed the project to be built not from a single perspective, but through ongoing dialogue, reflection, and experimentation.

The Navetta Gallery in Äkäslompolo played a different but equally vital role. As a long-standing cultural space and community hub, the gallery served as a living environment where the ideas behind the yurt could take root. It wasn't approached as a stakeholder in the formal sense, but as a community member with a deep understanding of local needs, rhythms, and aspirations. Through conversations, shared activities, and field visits, the gallery became a site for testing both the physical elements of the design and the cultural relevance of the concept. Throughout the project, this study also engaged with local artisans, architects, and experts to refine the yurt's design. These conversations enriched the process with layers of technical, cultural, and environmental knowledge. The act of listening deeply often became as important as the act of building. Cultural sustainability in architecture is only possible when the community is actively involved in the design process (Pallasmaa, et al, 1981, p. 102). This aligns with what I observed on the ground: that meaningful spaces aren't created in isolation, but through relationships built over time.

Following Leavy's (2015, p. 112) argument that participatory methods are essential in art-based research, especially when working within specific communities, I approached this phase with openness and flexibility. Instead of structured interviews or formal focus groups, I relied on informal, ongoing interactions, discussions over coffee, moments of shared making, and reflective conversations during field visits. These exchanges created space for people to offer insights in ways that felt natural and respectful. Feedback from community members directly shaped many parts of the yurt's design. Stories about seasonal gatherings and local craft traditions led to the inclusion of flexible interior spaces and symbolic motifs, such as tree forms representing rootedness and growth. Requests for more functional public infrastructure, like a shelter from unpredictable weather or an accessible restroom, were also taken seriously and addressed in the layout. These insights weren't just practical. They revealed what mattered most to the people who would live with this space long after the project ended.

Spaces that encourage social interaction and cultural storytelling are critical in rural and Indigenous tourism development (McKercher & du Cros, 2002, p. 124). The yurt was designed with this in mind. Whether hosting a wool felting workshop, an art installation, or a quiet moment for reflection, the structure invites people to gather, share, and connect not only with each other but with the landscape and traditions that surround them. Documentation of this engagement process took many forms. I recorded voice memos after community meetings, collected sketches and notes from brainstorming sessions, and took photographs during workshops and fieldwork. This wasn't just about capturing feedback, it was about honoring the shared process. These materials later became a rich source of qualitative data, helping me trace how the yurt design grew out of, rather than onto, the context it was meant to serve.

In the end, community engagement wasn't a single phase of the research. It ran through everything, shaping the questions I asked, the materials I chose, and the decisions I made. The presence of Villaino and the involvement of Navetta Gallery grounded the work in place, collaboration, and care. Without them, the yurt would have been just an idea. With them, it became something lived, felt, and shared.

Site visits to Äkäslompolo were conducted to observe the physical, environmental, and cultural context of each location. Site-specific research is essential for understanding the dimensions of a place, including its physical characteristics, shared narratives, and socio-cultural context. During these visits, I collected data on environmental conditions, observations of the landscape, climate, and natural surroundings informed decisions about the yurt's materials, orientation, and design; cultural context, observations of the landscape, climate, and natural surroundings informed decisions about the yurt's materials, orientation, and design; and infrastructure and accessibility, assessing the existing infrastructure in each location helped identify gaps that the yurt could address, such as the lack of tourist information centers or communal spaces. This data was recorded through field notes, sketches, and photographs, which provided a comprehensive understanding of the site-specific requirements for the yurt.

The Process of Designing the Yurt

Figure 2. Design process from background research to concept development. Photographs by Cervantes and Ahmadi, drawing by Ahmadi, 2024.

The design process began with an intensive background research phase and concept development from searching the historic structures to modeling a small-scale of my idea (Figure 2). I explored the historical significance of nomadic shelters such as yurts and lavvu, studying their structures, material choices, and relationships with surrounding landscapes. This research informed the basic principles for adapting a traditional shelter to meet contemporary needs in Lapland, particularly the need for cultural integration, sustainability, and climate adaptability. Sketching was the next step, where ideas were translated from research into visual concepts. Through freehand sketches (Figure 9), I explored different forms, spatial arrangements, and natural geometries, such as the Fibonacci sequence, to find a design language that could harmonize with the Lapland landscape. These early drawings helped in imagining how the yurt could feel grounded in place while embodying symbolic references to nature and cultural narratives. Following the initial sketches, the project moved into the modeling phase. Small-scale physical models were created to test proportions, structure, and material behaviors.

Simultaneously, a significant innovation process in materials took place, which is creating felting using discarded wool. Recognizing the potential of local wool, which was typically thrown away due to the lack of washing technology, high cost, and practical use

(Cervantes, 2023), I sought to repurpose it as a sustainable building material. This project focused on the practical development of felting techniques adapted specifically for architectural use. Rather than relying solely on traditional wet felting, which is both water- and energy-intensive, we developed and tested an innovative "bicycle felting" technique. Inspired by Mongolian felting practices that traditionally used horses for the process (Mongolian yurts direct, 2016) , this method offered a more sustainable and accessible alternative. This human-powered method of carding and felting wool emphasized sustainability by reducing water consumption, eliminating the need for electricity, and engaging local participants in a collaborative, embodied production process. The preparation of wool involved several stages, beginning with the cleaning and scouring of raw fleece to remove impurities. This was followed by carding, where fibers were aligned and loosened using mechanical tools, some of which were self-made or adapted specifically for this project (Figure 3). Wool fibers were then formed into felted sheets using the bike-felting method, resulting in thick, durable insulation material intended for use in the yurt's walls and roof, however, we just felt the wool for test and we didn't it for the real scale of the yurt. This hands-on experience allowed us to engage directly with the material and the felting process, rather than merely reading about it in books. Our goal was to explore whether it could truly be done sustainably, and fortunately, our assumptions were confirmed through the success of our experiments. This approach demonstrated the potential of using felted wool as an innovative material in the architecture industry, preventing waste and reintegrating discarded wool into a sustainable material cycle.

Figure 3. Different kinds of tools for carding the wool, the second tool in the picture was designed and created by Lola Cervantes. Photo by Ahmadi and Abolfazli, Summer 2024

Throughout the project, visual and written documentation captured each stage sketches, models, field experiments, material tests, and collaborative workshops. This evolving record of creative decisions and technical evaluations served both as a source of critical reflection and as research data supporting the project's goals. Ultimately, the construction process was not simply about building a shelter; it was about weaving together traditional knowledge, material innovation, and ecological sensitivity into a single coherent project. It honored the spirit of vernacular architecture while pushing toward sustainable, community-driven solutions for future Arctic living and tourism.

Phase 1: Research and Concept Development

The project began with an in-depth study of nomadic shelters across different cultures, particularly in Central Asia, Iran, and the Arctic region. These historical structures were analyzed to understand how they were adapted to different environmental conditions, the materials traditionally used in their construction, and their social and cultural significance for the communities that built them. "Architecture is what nature is unable to do. Nature is unable to do what man does. Man takes nature, the means to do, and discriminates between its laws. Nature does not do this because it works in harmony with these laws, and we call this order" (Portoghesi, 2000, p. 92). This insight highlights the duality of human intervention and natural harmony in architectural design. Traditional shelters like yurts and Kotas exemplify shelters built in deep connection with natural forces, adapting to climate and terrain while fulfilling human social and functional needs. In addition to researching traditional shelters, I conducted a detailed study of the location of the Navetta Gallery in Äkäslompolo to assess how the yurt could enhance its infrastructure and cultural offerings. "Finland is a quiet, unspoiled, out-of-the-way corner of the earth. It has long been one of the far borders of Western and Eastern culture, a stage where various conflicts have been played out, some warlike, some cultural" (Pallasmaa, et al ,1981, p. 17).

Navetta Gallery, located in Äkäslompolo, served as the contextual site for developing my design proposal. As a cultural and artistic hub in Finnish Lapland, it offers a unique intersection of local identity, art, and community. From the start, it was clear that if a new

structure were to be imagined for the gallery, it would need to do more than exist physically; it would need to support and enhance the values already present there. This project proposed a nomadic-inspired yurt as a conceptual extension of Navetta Gallery, one that could foster artistic exchange, sustainable tourism, and cultural continuity. However, it's important to clarify; the yurt was not built. What I developed was a proposal for designing a yurt, material experiments, and small-scale prototyping, and if Villaino had enough funds for creating the real scale of it, we would build it. Understanding the spatial and cultural dynamics of Navetta Gallery meant spending time on-site. As I wrote in my notebook, " The weather is hot. When we worked outside, we searched for shade. Visitors gathered near the trees. Some sat quietly, others talked or moved around. A group of Gipsy people visited the Navetta Gallery. They sat under the trees and sang songs together. One of them played an instrument. Many outdoor activities were happening. People walked in a specific area marked with stones. They moved in a circle, calmly and with purpose. The atmosphere felt relaxed but active." I noticed how people chose to stay outside, in shaded spots, sitting on benches or on the ground. Some leaned against tree trunks. The gallery space seemed to extend into the yard naturally, without instruction. So, I observed the flow of visitors, the limitations of existing spaces, and how activity spilled outdoors during warmer months. These insights were collected through direct observation and informal feedback from the gallery's host, Lea. She emphasized a need for flexible, outdoor spaces, located in their jungle near the Navetta galley, where workshops could happen, and where exhibitions wouldn't be constrained by square meter limits. While this feedback was limited to informal conversations in Finnish, with Maria Huhmarniemi translating it for use, rather than broad community surveys, it revealed a recurring theme: the gallery needed room to breathe. Its role as a connector between artists, locals, and travelers was strong, but spatially constrained. The proposal for a yurt was thus envisioned as a complement to the gallery: not a replacement or duplicate, but a flexible, sustainable structure that could support exhibitions, host wool-felting workshops, and act as a weather-safe gathering space.

This proposal took inspiration from traditional nomadic shelters but was informed by contemporary sustainability goals. Before sketching the yurt, itself, I collaborated with

Lola Cervantes on constructing a small-scale Kota model (Figure 4), a Finnish Indigenous structure. This model, while small in size, allowed us to understand the logic of assembly, to understand how to create and stack the sticks, and to reflect on how to solve the indigenous forms of environmental challenges. According to the video (Nomadic Architecture, 2021) that showed the assembling a real Siberian tent, we tried to stack the small sticks, which, before building this model and just watching the video, seemed very easy to me. Despite the small size of the model, it was very difficult.

Figure 4. Part of the design process involves making different ancient models and sketches, including the Siberian tent. Photos by Cervantes and Sketches by Ahmadi, 2024.

The conic shape has been traditionally used by many Indigenous cultures around the world as a response to both environmental needs and cultural values. Structures like the Sámi *goahti*, the North American tipi, and the Mongolian yurt all share this fundamental form. These shelters were not designed for aesthetic appeal alone, they evolved through generations of lived experience in harsh climates. Their sloped sides offered stability against strong winds, allowed snow or rain to slide off easily, and helped retain warmth during cold seasons. This conic geometry, while simple, is deeply intelligent. Inspired by this lineage, Lola Cervantes and I initially experimented with similar traditional shapes

during our early design discussions. We explored how these forms functioned structurally and how they might translate into our project. But as we reflected further, we began to ask ourselves a new set of questions: Could we develop a shape that still respected this architectural heritage, but also responded more specifically to the landscape, light, and spirit of Lapland? Could the form itself evoke a sense of being part of nature rather than just sitting within it?

These conversations led us to brainstorm more widely, playing with sketches and small models, pushing the design away from strict tradition and into something more organic. That's when the idea of using nature's proportions, the golden ratio, emerged. We turned to the Fibonacci sequence, a mathematical pattern that appears throughout the natural world: in pinecones, shells, trees, and even the spiral of galaxies. Its rhythm felt right for a structure that aimed to grow out of the environment rather than be imposed upon it. By adapting the Fibonacci spiral into the shape of the yurt, we found a form that held both symbolic and functional meaning. It felt fluid and dynamic, like movement frozen in time. At the same time, its curved layout opened up new possibilities for interior flow, light movement, and external integration with the land. In this way, the shift from a traditional conic structure to a Fibonacci-inspired form marked a turning point in the design process, a step toward creating a yurt that didn't just take shelter in nature, but spoke its language.

Phase 2: Design Development

Following the research phase, the focus shifted toward imagining what this shelter could actually look and feel like. This process began with sketching (Figure 5). Initially, I explored ideas around circular gathering spaces, shapes that felt intimate and open, that could offer both shelter and a strong connection to the outdoors. My very first concept centered around building a seating area around a living tree. The goal was to create a space where people could sit, rest, and feel held by nature, both physically and symbolically. I built a small-scale model of this concept to better visualize the interaction between built form and the natural environment. It was simple but grounded in the idea of human-nature interaction.

As I developed the idea further, I began considering how to connect the structure more directly to Finnish design traditions. I looked to figures like Alvar Aalto for inspiration; his ability to blend organic forms with architectural clarity led me to revise the shape of the plan. I softened the lines, allowing the structure to curve naturally like a flowing path through the forest. The form started to feel more rooted in the aesthetics of place, echoing both local materials and cultural design sensibilities. From there, climate realities pushed the design further. I introduced a slope into the structure to prevent snow accumulation, a practical necessity in Lapland. This decision not only made the shelter more feasible in winter but also gave it a natural, slightly conical shape that harmonized with traditional Sámi shelters and other Indigenous Arctic structures.

At this point, I also began to think more deeply about materials. Inspired by our earlier felting experiments and the use of discarded wool, I envisioned the outer shell of the yurt being insulated with felted wool, both as a sustainable solution and as a symbolic connection to traditional nomadic architecture for this reason, I explore the old shape of Iranian yurt, to understand how they assembled it and learn about the details of it (Nomadic Architecture, 2020). This idea of combining old wisdom with new possibilities became central to the design. The form of the structure evolved further as I explored natural geometries. I was particularly drawn to the Fibonacci sequence, a spiral pattern found everywhere in nature, from the arrangement of leaves and petals to the curves of shells and pinecones. Integrating this mathematical rhythm into the floor plan gave the shelter a more organic and intuitive feel. It wasn't just about aesthetics; it was about designing a form that felt like it *belonged* in nature. To bring these ideas to life, I created a series of 3D digital models that allowed me to plan dimensions, explore the internal experience of the space, and test material placement. These models were supported by small-scale physical prototypes, where I tested different frame structures, roofing methods, and material layering. Working between sketching, modeling, and hands-on experimentation made it possible to refine the final shape iteratively, step by step. What emerged was not a fixed blueprint, but a design direction, one that respects the climate and culture of Lapland, draws inspiration from natural forms and traditional shelters, and uses sustainable, local materials in a way that feels alive and relevant today.

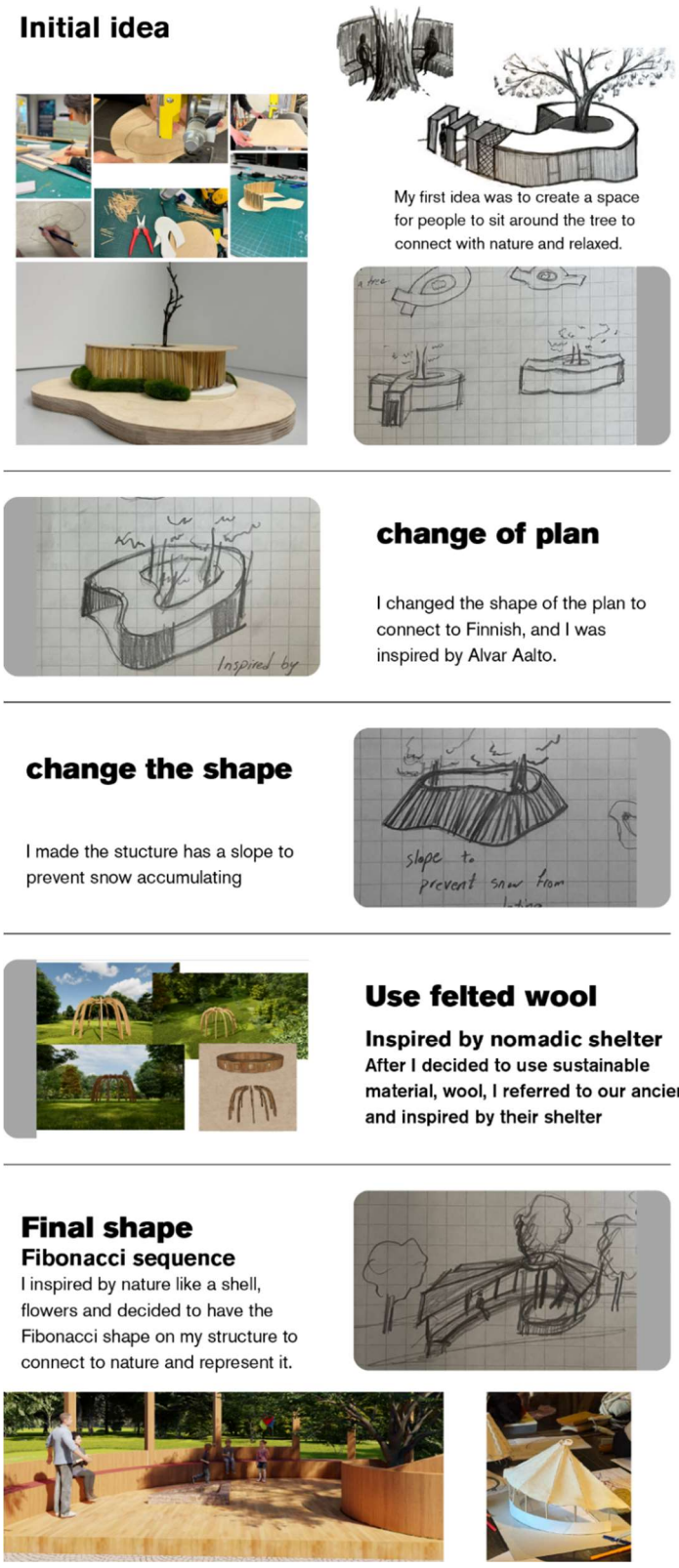

Figure 5. process of sketching and modeling different shapes to develop my idea. sketching and photos by Ahmadi 2024

During our trip to Akaslompolo, I inspired by an artwork that I saw there. As I wrote in my notebook, Lea Kaulanen, the owner of Navetta gallery said, “I need a space in the jungle near the Navetta Gallery.” She showed us the place, it was around 100 meters from the gallery. The area had two large stones beneath the trees and a peaceful atmosphere with shadows playing on the ground. Two trees were placed upside down, it was an artwork created by an artist. After that piece, another artist had decorated the ground with stones. Lola took a photo of me sitting there (Figure 6), and I started imagining how I could design the area around my yurt. The combination of natural elements and previous artworks inspired me. I thought I could shape the ground and space near the yurt using stones in a way that respects and continues the artistic language of the site.

Figure 6. An artistic site with upside-down trees and stone decorations near the proposed area of the yurt, created by previous artists near Navetta Gallery. Photo by Cervantes, summer 2024

Phase 3: Material Testing and Wool Experimentation

This phase of the project focused on exploring sustainable materials and experimenting with small-scale prototypes and crafting techniques that could be applied to a real-scale yurt in the future. While the yurt has not yet been physically constructed, the research and design process has laid a strong foundation for future implementation. Our team, *Villaino*, is actively working toward this goal. We even applied for the Bauhaus Earth Fellowship, a program that supports innovative ideas at the intersection of design, sustainability, and community. Although we were not selected, the application process allowed us to refine our vision and reaffirm our commitment to realizing the yurt as a built structure, if funding becomes available.

In considering what materials to use for the actual construction, sustainability was our guiding principle. Sustainable materials are those that have a minimal environmental impact throughout their lifecycle. They are often renewable, biodegradable, energy-efficient, and locally sourced. One of the most central elements of the project is wool (Figure 7), which offers excellent thermal insulation, moisture regulation, and is both biodegradable and renewable. However, Finland faces a pressing issue: many farms discard raw fleece each year due to a lack of facilities to process it (Cervantes, 2023). Recognizing this challenge, our team began experimenting with new ways to repurpose this abundant yet underused material. My concept centers on using wool as insulation for the yurt, drawing inspiration from nomadic traditions that relied on felted wool for protection in harsh climates. To find a sustainable and participatory felting method, we turned to bike felting, a technique that uses bicycle motion to felt wool without electricity. The Villaino team piloted this method during a hands-on workshop at the University of Lapland (tbgobra, n.d.). The response was enthusiastic, with students and artists not only engaging with the process but also envisioning its potential as a tourism activity. This human-powered felting method reduces water use, invites community participation, and celebrates wool as both a cultural and functional material. For the future, if we secure funding to build the full-scale yurt, we plan to integrate bike-felted wool panels into its

insulation system and host workshops as part of the visitor experience. This innovative felting approach echoes ancient techniques. Traditionally, nomads would roll wool into blankets by pulling it behind horses. In our updated version, we wrapped wool around a plastic pipe and pulled it with a bicycle near Navetta Gallery, and Maria Huhmariniemi rode it. This act of reviving a historic technique using modern tools highlights the adaptability and enduring relevance of natural materials (Huhmarniemi et al, 2024, p. 119).

Figure 7. Raw wool fibers from Finnsheep breed. Photo by Lola Cervantes, 2024.

The wool felting process also reflects my personal heritage. Coming from Iran, where felt-making is deeply embedded in nomadic traditions, working with wool is more than just a technical or sustainable choice, it’s emotional. In Iranian culture, felting is not only practical, used for tents, rugs, and garments, but also highly symbolic. It carries generations of knowledge, storytelling, and visual language passed down through hands-on making. This connection shaped how I approached the material in Lapland. By combining Iranian and Finnish inspirations, the yurt evolved into a cultural dialogue, a structure where different traditions could meet through shared values of sustainability, craftsmanship, and respect for nature. The felted panels weren’t just used for insulation. They became a surface for memory and meaning. In Iranian felt-making, it's common to

embed patterns into the wool, motifs that reflect landscape, mythology, and identity. I wanted to explore how that same practice could take root in Lapland. At the Navetta Gallery, our Villaino team discussed how to apply this idea. We considered patterns that were not only visually beautiful but locally rooted. Together, we designed symbolic shapes that spoke to Finnish culture, reindeer, mushrooms, the footprint of Arctic animals, and the northern lights (Figure 8). These weren't decorative afterthoughts. They were designed to make the yurt feel like it belonged, both to this place and to the people who would experience it. In this way, the yurt's surface becomes a canvas of layered meaning: it warms, it protects, and it speaks. It tells a story that stretches across borders, between Iran and Finland, past and present, practical need and poetic gesture.

Figure 8. Discussion about the shape of the pattern on the yurt, Photo by Cervantes, Summer 2024, Navetta gallery, Äkäslompolo.

During our field trip to Äkäslompolo, we focused on exploring the potential of discarded wool through hands-on felting activities. At Our Wool Camp (Figure 9), we worked collaboratively to clean, card, and felt unprocessed local wool. This practical work was not about fully testing materials for construction use, but rather about beginning to

understand their properties through direct engagement. Felting itself became a method of learning about texture, durability, and cultural context rather than a finalized test of performance. Although we didn't conduct formal insulation or resistance of felt to rain or wind, the process still allowed us to reflect on the potential of wool as a sustainable material. According to Ormondroyd and Morris (2015, p. 189), we know that wool is breathable, renewable, and naturally flame-resistant. These characteristics make it promising for use in shelter construction, particularly in cold and rainy climates like Lapland's. However, in this phase of the project, our aim was more about experiential learning than validation of performance metrics. One of the most engaging aspects of this process was experimenting with bike felting, an adaptation of traditional horse-felting techniques into a human-powered method using a bicycle. While we didn't fully measure the technical outcomes, the process itself became an important insight. It showed how low-impact, participatory techniques can be used to connect people with sustainable practices. Felting by bike turned into a shared activity engaging students, artists, and guests in the physical act of making. Based on our observations and discussions, we identified several sustainability benefits (Table 1).

Benefit	**Impact**
Reduces Water Waste	Unlike traditional wet felting, bike felting minimizes water use.
Lowers Carbon Footprint	Uses human-powered energy instead of electricity.
Strengthens Community Involvement	Local artisans and tourists participate in a hands-on craft experience.
Promotes Circular Economy	Wool scraps and old textiles can be repurposed into felted materials.

Table1. summaries of our consideration of the sustainability benefits of bike-felting regarding waste, carbon footprint, … based on the discussion between me and Cervantes. 2024

These observations were modest but meaningful. They demonstrated how the felting process itself could reflect values of sustainability, not only in the use of materials but in the method of making. It was slow, physical, and rooted in collaboration qualities that aligned with the rhythms of the landscape and the aims of the project. Although our focus was on wool, we also discussed possible material options for the yurt's structural frame. Pine and birch, both widely available in Finland and known for their strength and renewability, were considered ideal candidates. Additionally, for future heating needs, we envisioned using Halia radiant heating film (The Warming Surfaces Company Ltd., 2025): a lightweight and energy-efficient technology that solar panels can power. These ideas are part of a broader design philosophy that sees natural resources not as commodities, but as collaborators. As Demos (2016, p. 20) suggests, moving beyond the outdated divide between nature and culture allows for more integrated, ecologically aware design thinking. While a full-scale yurt was not constructed during this research, the small-scale models we built, along with the felting sessions, offered valuable insight into how materials might behave and interact. These early-stage prototypes helped us identify key challenges, such as how wool might respond to moisture or how it could be shaped into architectural panels. They weren't formal tests, but they were real moments of learning grounded in process, context, and conversation.

Figure 9. The team sorting wool in Äkäslompolo, summer of 2024. Photo: Dorsa Abolfazli, 2024.

Bike felting became more than a technique; it became a shared act of making. Children pedaled while elders told stories about local traditions. Tourists participated, leaving with a deeper appreciation for craft and sustainability. The felting process itself became a performance, a slow, thoughtful rhythm echoing nature's cycles and the yurt's purpose. The wool felting workshop, hosted at Navetta Gallery as part of the Felted Futures project, became a turning point. It brought artists, designers, and local craftspeople together to exchange ideas and traditions. It emphasized that architecture is not just about form, but about process, interaction, and memory (Huhmarniemi & Cervantes, 2024, p. 121). As Paolo Portoghesi (2000, p. 87) writes, "True sustainability means working with nature, not against it." This principle guided every decision in this phase. The materials were tested, the community was engaged, and the design became a vessel for cultural continuity and ecological care. This project, although still unfolding, already reflects a future-forward vision of architecture that listens to place, includes people, and redefines innovation through the wisdom of old materials and new ideas.

Process of Bike Felting at Navetta Gallery

Figure 10. photos taken by Lola Cervantes, Dorsa Abolfazli, and Hanieh Ahmadi

We tested raw wool materials on a small scale in an open-air, hands-on collaborative laboratory (Figure 10). We tested wool techniques, such as scouring and selecting fibers, developed a wool picker device, learned how to use a carding drum, and felted 2 blankets with discarded unprocessed wool.

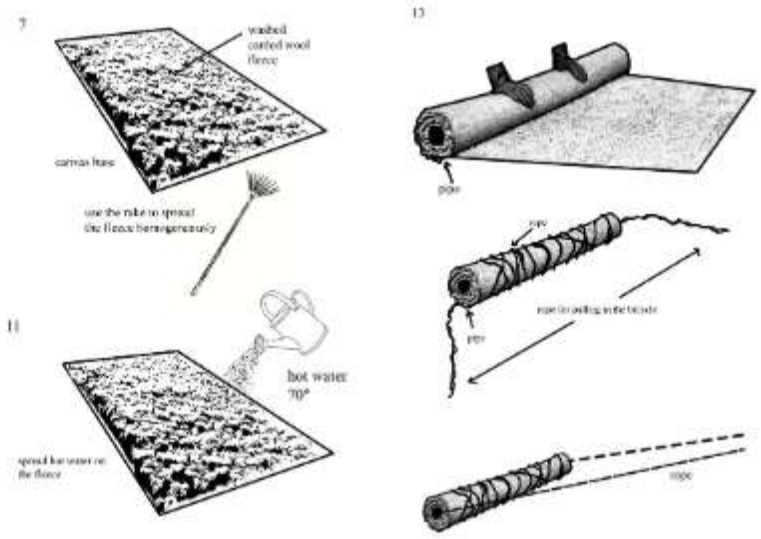

Figure 11. Process of Bike-felting, Cervantes' drawing,2024

A sheet of raw wool was wrapped around a plastic pipe. (Figure 11, Figure 12). The pipe was pulled behind a bicycle through the landscape near Navetta Gallery's cafeteria. Local wool craft experts, Hanna-Maija Sandqvist and Katariina Angeria, guided the process, offering valuable insights into the properties of wool and traditional felting methods. The success of the bike felting experiment demonstrated that this technique could be further developed to create thick felted blankets for shelter insulation, replacing synthetic alternatives and reducing the carbon footprint of the project (Huhmarniemi & Cervantes, 2024, p. 120). Material experiments revealed that locally sourced timber, wool insulation, and heating elements were the most sustainable and functional choices.

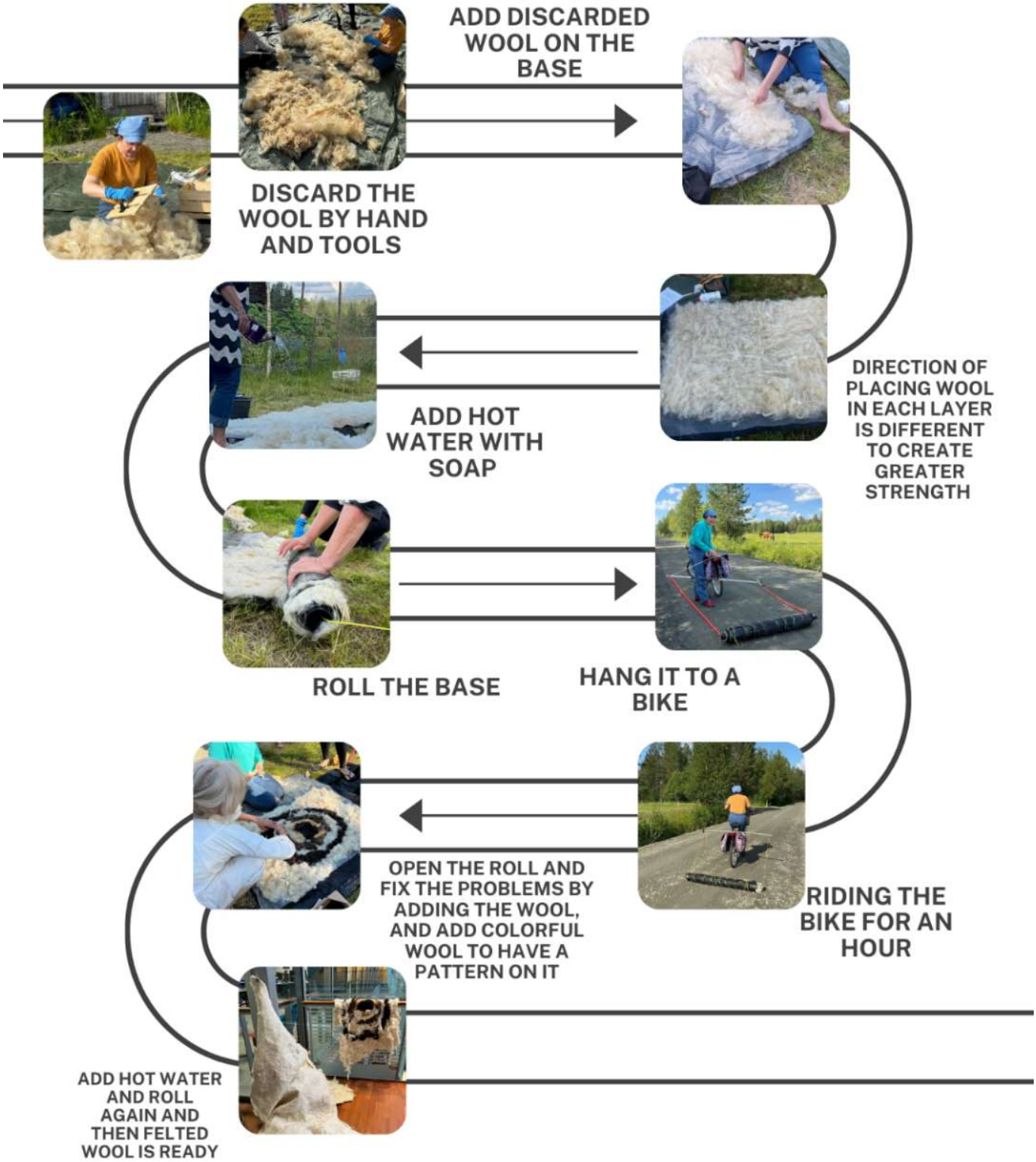

Figure 12. Process of bike-felting with photos taken by Cervantes, Abolfazli, and Ahmadi.2024

Phase 4: Prototyping and Construction

Felting Techniques and Sustainability Innovations

At the heart of this project lies not only an architectural structure, but a process that questions how we build, why we build, and for whom. This phase, the hands-on creation and testing of the yurt, was when ideas became tactile, and sketches turned into spaces we could walk through, touch, and experience. It was also where innovation met tradition, particularly through our use of wool felting. One of the most distinctive elements of the yurt design was the incorporation of felted wool, not just as an aesthetic or historical nod, but as a crucial functional material. Rather than relying on energy-heavy industrial methods, we explored a more sustainable and engaging approach: bike felting. Developed during my collaboration with the Villaino team, the bike felting method uses a bicycle to power the mechanical motion needed to felt raw wool. In doing so, we avoided electricity, reduced water consumption, and turned felting into an embodied, communal experience. This hands-on philosophy echoed the question posed “Can design save the world from dying a natural death? Can architecture build new, sustainable life forms? Can designers and architects make our lives better and richer, and more enjoyable to live, in harmony with nature?” (Bengtsson, et al ,2011, p. 7). These weren’t abstract questions during the prototyping phase, they were present in every decision we made. Each layer of wool, each joint in the frame, was a small act of resistance against wasteful systems and a step toward a kind of building that cares for people, for land, and future generations.

Documentation and Reflection

“If you want to create something new, search for that which is ancient.” (Pallasmaa et al., 1981, p. 29) These words became a quiet refrain throughout this project, guiding not just the design choices but also how I approached documenting and reflecting on the work.

They reminded me that creating something meaningful doesn't always require starting from scratch. Sometimes, it means looking backward with care so that we can move forward with intention. In that spirit, documentation became more than a way to track progress; it became a way to honor the knowledge that came before me, and to recognize my learning in the process.

This research was not a linear journey. It unfolded in cycles of inspiration, frustration, discovery, and reconsideration. That made documentation essential. I kept a notebook close during all stages of the project, when sketching ideas, felting wool, and discussing structure with Lola. These entries included drawings, technical notes, but also thoughts, doubts, and unexpected insights that arose in moments of quiet. In a project rooted in materials and movement, written reflection helped me slow down, ask questions, and trace patterns in my thinking over time. I also turned to auto-ethnographic methods as a way of bringing myself, as both designer and person, into the research. This wasn't about placing myself at the center, but about acknowledging that I was never outside the process. My personal experiences, my background, my questions, my sense of place, all shaped the way I approached this work. Through self-reflection, I examined how intuition informed some decisions, how uncertainty shaped others, and how working with raw, imperfect materials like discarded wool mirrored the unpredictability of the creative process itself.

Interactions with artisans, designers, and community members were also documented, not just as quotes or data, but as stories and relationships. These conversations added layers of understanding that could never be found in books alone. From learning felting techniques by hand to discussing the limitations of rural exhibition spaces in outdoors, these shared moments helped shape the project's direction in ways I hadn't anticipated. They reminded me that architecture doesn't exist in isolation, it's always in conversation with the people who will use, maintain, and interpret it. One reflection that emerged repeatedly was this idea that architecture is, ultimately, about the relationship between human beings and the environment. "The tourist route project is about Man and his relation to Nature" (Bengtsson, et al, 2011, p. 61). That idea captures the heart of my thesis. In its form, materials, and purpose, the yurt becomes a mediator, an interface

between cultural memory and ecological awareness. It invites both locals and visitors to pause, to notice where they are, and to consider how they are part of a larger system of place, history, and care. Through this documentation and reflection, I came to understand that the process of making was inseparable from the process of thinking and feeling. The yurt wasn't just designed, it was experienced, revised, and shaped through continuous dialogue with the land, the people, and myself. In that way, this research became a living practice, one that challenged me not only to design differently, but to see differently. And that, perhaps, is the most enduring outcome.

Analysis and discussion

After months of creative development from brainstorming and sketching to create a small-scale model, material testing, and collaboration, the findings began to take shape, not just as data points or outcomes, but as meaningful patterns. This part of the research became less about proving something and more about understanding what the process revealed. In this part, I return to the research questions and the insights gathered in the previous chapter to make sense of what they mean, not only in the context of this project but also in the broader conversations around cultural sustainability, architectural innovation, and nature-based tourism.

While the project was inspired by the broader Lapland region and its communities, active engagement with the local community during the Äkäslompolo visit was minimal. The interaction was primarily with Lea Kaulanen, the owner of Navetta Gallery, who shared her thoughts on the yurt model we presented (Figure 13). Her feedback focused on the potential use of such a structure as a cultural extension of the gallery, particularly for outdoor exhibitions or educational activities. Although there was no direct involvement from tourists or broader public groups during this phase, Lea's response offered valuable local insight into the structure's perceived cultural relevance and functionality.

Figure 13. Discussion and presentation of our idea and model to Lea Kaulanen, the owner of Navetta Gallery, at Navetta Gallery, photo: Dorsa Abolfazli, Summer 2024.

One of the most significant observations was how the design, rooted in nomadic traditions but adapted through a Finnish lens sparked interest even in this limited setting. The small-scale yurt model, with its integration of tree motifs and circular structure, was described as “fitting naturally with the landscape” by Cervantes. People saw something familiar and unfamiliar at the same time. This echoed McKercher and du Cros’s (2002) theory that cultural tourism thrives not when heritage is frozen and preserved behind glass, but when it is made accessible and meaningful in the present. The yurt’s capacity to host exhibitions, facilitate wool workshops, or simply offer a space to gather became more than practical features, they were the very elements that allowed it to serve as a living cultural landmark.

The bike-felting technique, developed and tested with the Villaino team, proved not only functional but also symbolically powerful. Its embodied nature connected participants mostly students, during workshops at the University of Lapland to the physical labor of making, and to the history of wool craftsmanship in Arctic cultures. Using human-powered energy rather than electricity made the felting process more sustainable, but also more participatory. These observations were recorded in reflective field notes taken during the workshop, where participants expressed that the process felt "grounded" and "collaborative". From a sustainability perspective, this approach aligns with ecological aesthetics, where the beauty of a structure is inseparable from its ecological responsibility (Zangwill, 2001, p. 73). The felted wool was not just practical as insulation, it told a story of land, labor, and locality.

The limited scale of community engagement also shaped the interpretation of results. Without broader feedback from residents or tourists beyond the Navetta Gallery setting, the social impact of the design remains a hypothesis. It’s clear that for the yurt to function as a genuine community or tourist asset, future iterations would require longer stays, broader outreach, and deeper co-design sessions in other parts of Lapland. Still, these challenges don’t undermine the project’s value; they clarify what must come next. As I reflect on this phase, I see the research less as a conclusive output and more as a meaningful conversation between past and present, between tradition and innovation,

and between people and place. Architecture, in this project, becomes less a fixed product and more a responsive, living dialogue.

When viewed through the lens of sustainable tourism, the project also begins to offer a broader model. As Butler (1999) argues, tourism that succeeds in the long term is not only about economics but about fostering respect between visitors and the places they enter. The yurt's low environmental impact, its use of discarded materials, and its modular, seasonal setup all suggest a type of tourism infrastructure that doesn't overwhelm but supports its environment. It becomes part of the landscape, not a disruption to it. At the same time, this project does not pretend to be a complete solution. There were clear limitations. The felting process, while engaging, was time-consuming and physically demanding, raising questions about long-term scalability. And while community feedback was rich and encouraging, the scope of participation was still limited, mostly centered around Äkäslompolo and the Navetta Gallery. To understand the full potential of the yurt model, it would need to be adapted and tested in other parts of Lapland, with different communities and climates.

As discussed by Poole & Putnam (2006, p. 15), the responsibility for environmental impact does not lie solely with consumers but with those who create the products themselves. "What can change are the products themselves, how they are made, what they are made of, and what happens to them once their immediate usefulness has expired… The people best able to make these types of changes are not consumers but designers" (Poole & Putnam, 2006, p. 15). This notion supports the foundation of my project: that designers carry the responsibility to rethink how things are made, used, and reabsorbed into natural cycles. This aligns with the concept of "design for disassembly," which encourages the use of benign materials and processes that minimize harm and maximize reuse (Poole & Putnam, 2006, p. 18). As a result, I intentionally selected sustainable materials for my project, materials that not only reduce environmental impact during their use but also have the potential to return to nature without causing harm. This includes biodegradable wool and locally sourced timber, both chosen for their renewability, low-carbon processing, and cultural relevance. These choices reflect a commitment to design that respects both environmental cycles and material afterlives.

Additionally, because the structure is modular and can be disassembled, it offers long-term sustainability not only through material choices but also through its lifecycle adaptability. When the shelter is no longer needed in one location, it can be dismantled, and its components reused for other purposes or reassembled at a new site. This flexibility reduces waste and extends the usefulness of the materials, aligning with principles of circular design and resource-conscious architecture.

Implications of the Results

"Tourism development should be aligned with local values and traditions rather than imposed as an external force" (McKercher & du Cros, 2002, p. 92). This insight supports the stakeholder engagement process, which ensured that the yurt was co-designed with local artisans and cultural institutions like Navetta Gallery. "A building designed with cultural sustainability in mind is not just a structure; it is a statement of identity" *(*Portoghesi, 2000, p. 102*).* This confirms that the yurt's integration of Finnish nature-inspired motifs and Finnish textiles makes it a powerful cultural expression, not just a functional shelter. "The use of wool as an insulation material has a double benefit, it is both an effective thermal barrier and a sustainable, biodegradable resource" *(*Ormondroyd & Morris, 2015, p. 189*)*. "Cultural tourism depends on the presence of meaningful, well-integrated landmarks that enhance the visitor experience" (Richards, G., 1996, p. 85). This supports the yurt's function as a cultural and artistic hub, providing an interactive space for tourists to learn about Finnish heritage while supporting local artisans. The findings support the need for increased funding for eco-tourism and cultural heritage preservation. Policies that encourage sustainable, place-based architecture could contribute to more resilient and culturally relevant tourism infrastructure in Lapland. This project's emphasis on working with local materials and Indigenous-inspired techniques reinforces the broader shift in environmental practice that Decolonizing Nature advocates. According to Demos (2016, p. 23), true ecological sustainability cannot be separated from social justice and must confront the colonial histories that have

marginalized Indigenous knowledge systems. The yurt project, by engaging with community-based wool practices and drawing inspiration from nomadic shelters, acts not only as an ecological intervention but also as a small decolonial gesture: challenging imported, industrial models of building and re-centering place-based, traditional knowledge within the architectural process.

Architecture Supports Sustainable Tourism While Reflecting Local Cultural and Environmental Values

The findings of this research closely respond to the study's central inquiry: How can architecture in wilderness Lapland be designed to support sustainable tourism while reflecting local cultural and environmental values? Throughout the project, the work aimed to demonstrate how culturally sensitive, environmentally sustainable architecture can foster both tourism development and community identity in the Arctic context. One of the main findings is that adapting traditional nomadic shelter principles to Lapland's context is not only possible but highly relevant. Structures like the yurt, originally designed to be flexible, resilient, and deeply connected to their environment, offer valuable lessons for contemporary sustainable architecture. Nature-inspired elements such as Fibonacci geometry and tree motifs were integrated into the yurt's structure, allowing the design to harmonize with the Lapland landscape visually and ecologically. This approach aligns with the ecological aesthetics framework, which holds that environmental responsibility and beauty should not be treated separately but as inherently linked (Zangwill, 2001, p. 73).

Material selection was another key aspect directly supporting the research question. Using local pine timber and discarded wool for insulation minimized the environmental footprint while embedding local resources and knowledge into the project. The findings confirmed that these materials not only perform well in Lapland's harsh climate but also resonate with sustainable tourism strategies that prioritize authentic, place-based

experiences (Richards, 1996, p. 76). Cultural integration emerged as a crucial factor. The yurt was envisioned not simply as a tourist structure but as a living cultural landmark. Incorporating Finnish textiles, natural patterns, and participatory felting workshops created a space where cultural heritage could be both preserved and actively experienced.

Participatory design also played a fundamental role. Working collaboratively with artists, local wool experts like Hanna-Maija Sandqvist and Katariina Angeria, and designers allowed the project to integrate diverse forms of knowledge, which has been referred to as crafting sustainability, where intercultural and intergenerational dialogues are fostered through shared handcraft traditions (Härkönen et al., 2018). These collaborations not only inform material and aesthetic choices but also strengthen the social fabric around the project, creating a deeper sense of community ownership and engagement. The iterative material experiments, particularly the development of bike felting as a sustainable wool-processing technique, showcased that innovation and tradition could coexist meaningfully. Instead of relying solely on industrial methods, bike felting revitalized traditional practices in a contemporary, eco-friendly way (Huhmarniemi & Cervantes, 2024, p. 120). These techniques provided real solutions for reducing waste and increasing community participation, while also becoming educational tools for visitors and residents alike. Moreover, this project's journey highlighted that building sustainable tourism infrastructure must consider more than just minimizing environmental impacts. It must also create culturally meaningful spaces that honor local traditions, stories, and crafts. This philosophy mirrors broader discussions on regenerative design, which emphasize positive cultural, social, and ecological impacts rather than simply minimizing harm.

Architecture is never just about providing shelter; it is a bridge between practical necessity and cultural storytelling. Every structure carries with it the memory and spirit of its people (Portoghesi, 2000, p. 112). From the beginning, the goal of this project was not only to design a functional yurt for Lapland but to create a living cultural landmark, something that breathes with the rhythms of nature, history, and local traditions.

"The Fibonacci sequence is nature's most fundamental pattern, appearing in trees, shells, and even the spirals of galaxies" *(*Bengtsson et al, 2011*,* p. 34). By using the Fibonacci sequence (Figure 14) as the guiding geometry, the yurt harmonizes with natural forms, reinforcing its connection to Lapland's environment. The Fibonacci sequence was successfully used to structure the yurt's dome and decorative elements, creating a visually harmonious design. Tree-inspired wooden carvings were incorporated into the frame, reflecting Finland's deep connection to nature. This choice was not merely aesthetic; it embodied a desire to align human construction with natural harmony, reinforcing the yurt's connection to the surrounding environment. Local elements were woven into the physical fabric of the yurt. Tree-inspired carvings were planned for the wooden beams and panels, echoing the deep-rooted Finnish cultural reverence for forests. Meanwhile, traditional Finnish textiles and patterns were imagined as insulation and interior decorations, offering visitors not only warmth but also a tactile experience of local craftsmanship and symbolic meaning. Each of these choices was intentional, building a dialogue between the built form and the stories of the people and land it would represent. To summarize the design intentions and the cultural and ecological narratives embedded within them, Table 2 outlines the key symbolic elements considered in the yurt design, their intended application, and the rationale behind each choice. These components emerged through ongoing collaboration with Lola Cervantes and other members of the Villaino team during the co-design process.

Crafting sustainability involves more than using natural materials; it requires creating dialogues between generations, cultures, and ways of knowing. The principle of intercultural handcrafting as a shared heritage parallels Demos's (2016, p. 22) argument that meaningful ecological work today must include the perspectives of those historically marginalized. In this project, working with discarded wool and bike-felting techniques becomes a means of connecting traditional knowledge with experimental design, merging indigenous techniques with contemporary sustainable methods.

Cultural Symbol	Application in Yurt Design	Our Belief
Fibonacci Sequence	Dome proportions & decorative motifs	Lola and I found it visually engaging
Tree Motifs	Wooden beams, carvings, and interior panels	We believed it strengthened cultural identity
Finnish symbols	Signs of Finland on patterns in fabric and insulation	We thought it could be signs of Finland to introduce it to tourists.
Discarded wool & Bike-felting	Traditional Knowledge with experimental design	We believed that this traditional technique could bridge the past and the future.

Table 2: Cultural Elements Integrated into the Yurt Design

Figure 14. Fibonacci-Based Structural Design in the Yurt, Render, model, and sketches by Ahmadi, and photo by Cervantes 2024.

In recent years, researchers have emphasized that crafting sustainability is not just about the use of renewable materials but about fostering dialogues between cultures and

generations. As Härkönen et al. (2018, p. 2) said, Handcraft becomes a shared cultural heritage between indigenous and non-indigenous communities, strengthening cultural continuity and opening up spaces for intercultural understanding. Following this perspective, the yurt's use of felted wool, natural woods, and symbolic motifs works not just as design elements but as mediums for cross-cultural conversation and education. Traditional local skills, such as wool felting and wood carving, are now seen as powerful methods for cultural revitalization, especially in Northern contexts where globalization, climate change, and urbanization threaten small communities' ways of life (Härkönen et al.,2018, p. 2-3). Integrating these practices into contemporary structures like the yurt helps maintain cultural memory while adapting it to modern needs, embodying the idea that heritage is not static but constantly reimagined.

Moreover, according to the concept of the "northern knowledge system," preserving and renewing traditions like felting, woodwork, and symbolic storytelling are vital acts of cultural sustainability (Härkönen et al.,2018, p. 2). In this way, the yurt design stands at the crossroads of tradition and innovation, acting as both a continuation of local history and a model for regenerative futures. This approach positions the yurt not simply as an object to be observed but as a dynamic participant in cultural life. It will invite visitors to engage with Northern Lapland's landscapes, histories, and artisanal knowledge. More importantly, it acknowledges that culture is not preserved by freezing it in time but by adapting and renewing it through respectful, creative interaction. Through this project, it becomes clear that architecture, when rooted in place, material, and story, is itself a form of cultural sustainability. It offers a path where handcraft traditions meet contemporary design thinking, ensuring that the lessons of the past continue to inspire new generations, both local and global.

Functional and Adaptive Features of the Yurt

The final proposal design of the yurt embraced a modular and multifunctional approach, allowing the structure to adapt to various uses throughout the seasons. Rather than being a static shelter, the yurt was envisioned as a dynamic cultural space, an extension of the Navetta Gallery, offering new possibilities for both community and tourist engagement. The interior layout was intentionally designed to be modular. This means that the space could easily be rearranged or adapted depending on the event or need. It could function as an art exhibition space with open gallery-style walls, a communal area for workshops or local gatherings, or even as a small retail or educational hub for tourists. These flexible spatial arrangements were discussed and refined during several design sessions with Lola Cervantes, where we explored how each configuration could support multiple forms of use without compromising the structure's identity. The aim was to offer a space that felt welcoming and culturally grounded, but also practical and future-oriented.

In addition to its flexible layout, the proposed use of solar panels would support sustainable lighting and energy solutions. Though medium in feasibility due to weather conditions in Lapland, this option represents a step toward energy self-sufficiency. The inclusion of Halia radiant heating film rather than traditional firewood or open flames was another major consideration. This change not only minimizes fire risk, which is a concern in wooden structures, but also reduces carbon emissions and supports energy efficiency, especially when powered by solar sources.

Wool insulation was a central component of the design, not only for its high thermal efficiency and acoustic benefits but also for its cultural significance. The felted wool panels were imagined as more than just insulation they would act as tactile, visual, and symbolic features that reflect Lapland's natural and cultural landscape. These panels could also serve as decorative surfaces, where patterns inspired by Finnish nature reindeer, mushrooms, arura could be embedded or printed. The idea emerged during a group discussion in Navetta Gallery, where our Villaino team brainstormed how to use natural motifs to connect the space more deeply to its surroundings. Another design

feature, rooted in the site's natural beauty, was the idea of using the yurt as a quiet, contemplative space. Surrounded by trees and set in a forested area, the yurt would offer a view of the landscape while being protected from the weather. It could function like a contemporary laavu (in English, Fire camp), a resting shelter found along Finnish trails, providing warmth and comfort while encouraging a connection with the environment. In this sense, the yurt becomes both a cultural landmark and a sensory retreat.

Tourists visiting the space could also use it to learn about the region. The modular layout allows for displays about local history, art, and sustainable practices, turning the yurt into a living storybook. It supports Richards' view that "architecture must provide more than shelter; it must tell a story" (1996, p. 55). Visitors don't just pass through the space, they experience it. The project thus reinforces the idea that flexible, adaptable spaces are essential in sustainable tourism. As Butler (1999, p. 22) notes, "Multi-functional spaces are the future of sustainable tourism architecture. The ability to shift between uses ensures long-term viability and relevance." This insight proved to be central to our design thinking. The yurt was never meant to serve a single purpose. Instead, it was imagined as a space that could grow with its community, supporting art, culture, tourism, education, and everyday moments of rest and reflection. By integrating traditional materials and modular thinking, the yurt becomes both a practical solution and a meaningful contribution to cultural sustainability in Lapland.

Unexpected Findings and Challenges

Initial assumptions suggested sustainability would be the key factor in material selection, but artisans valued cultural authenticity equally. Navetta gallery originally favored a yurt as a gallery space, but many later emphasized its potential as a communal gathering hub. "Tourists are increasingly looking for authentic experiences that combine nature, sustainability, and cultural heritage" (McKercher & du Cros, 2002, p. 88). This explains

why Villaino favored the yurt's ability to serve as an interactive cultural hub, rather than a purely functional space.

One of the central challenges in this project involved working with local wool as a sustainable material. While using Finnish wool aligns with the goals of environmental responsibility and cultural authenticity, it also presents logistical and material constraints. As Cervantes (2023) noted, the infrastructure for wool processing in Finland has significantly diminished. There are only a few facilities left, such as Pirtin Kehräämö, capable of sorting and spinning raw wool, and many small-scale farmers must transport their wool over long distances, which limits accessibility and increases processing times. Additionally, wool quality is highly variable, depending not only on the sheep breed but also on environmental conditions. For instance, climate fluctuations in the Arctic directly affect wool texture and density, factors that influence felting success. Köngäs, an artisan cited in the study, observed that winters with abnormal temperatures resulted in inconsistent wool textures, which complicated crafting processes.

Sustainability was another layered challenge. Although local wool avoids the carbon footprint of imported Merino wool and supports biodiversity through small-scale grazing, it still raises ethical and ecological questions. These include the energy and water demands of processing wool, as well as broader concerns like climate change's impact on livestock and craft economies. In terms of technique, the bike-felting method, developed as part of the Felted Futures initiative, demanded experimental thinking and collaboration with local artisans. It was a contemporary reinterpretation of traditional horse-aided felting, adapted for today's constraints. The unpredictability of felting large-scale wool sheets outdoors and maintaining fiber consistency posed technical difficulties throughout the process. Despite these limitations, the challenges proved instructive. They revealed the fragility and resilience of local craft ecosystems and demonstrated that working within material and environmental boundaries is part of the design itself. These insights underscore the need for continued support for small-scale wool production, craft infrastructure, and local knowledge systems to sustain innovation in Arctic sustainable architecture. Every research project faces limitations that must be acknowledged for transparency and future improvement. What I found as a limitation of the study was that

bike felting is a long process and needs so many people to help manage time, and felted wool is not used and tested in different locations in Finland.

Comparison with Existing Research

The findings of this study reinforce the idea that sustainability and aesthetics should not be treated as separate concerns but must coexist in all built environments. Ecological aesthetics suggests that beauty and environmental responsibility are inherently linked, an approach that is particularly relevant to this research (Zangwill, 2001, p. 73). By integrating natural forms such as the Fibonacci sequence into the structural design of the yurt, the project aligns with principles that emphasize both visual harmony and ecological sustainability. The fusion of these elements ensures that the structure is not only functional and environmentally responsible but also compelling in its form, creating a seamless relationship between architecture and nature. This study also contributes to the broader discussion of culturally embedded architecture as a model for sustainable tourism. By reinterpreting the traditional yurt in a contemporary Nordic context, it demonstrates how heritage-based structures can drive eco-friendly tourism while maintaining a meaningful connection to local culture (Leavy, 2017, p. 112). The flexibility of the modular yurt concept presents opportunities for adaptation in various environments, offering a replicable framework for future sustainable tourism initiatives. Its design enables it to function as an interactive and immersive space where visitors engage with cultural narratives while experiencing a structure that embodies sustainable construction practices (Portoghesi, 2000, p. 98). This approach aligns with broader trends in the Arctic and Northern Europe, where interdisciplinary, ecocultural projects like *Shielin-bough* have demonstrated the importance of reconnecting architecture with local materials, traditions, and landscapes. As Jokela and Wall (2024, p. 88) show, shelter-making in projects like Shielin-bough emphasizes working with untreated local timber, vernacular building forms, and community storytelling, creating spaces that are culturally alive and ecologically

embedded. These principles deeply resonate with the yurt project's goals of blending sustainable construction with cultural revitalization.

Beyond its role in tourism, the findings highlight how art-based community spaces can serve as catalysts for cultural preservation and artistic collaboration. The yurt's design encourages participatory engagement, allowing artists, designers, and local communities to take part in the construction process while fostering a deeper appreciation for sustainable materials. This aligns with research emphasizing that sustainable architecture is most effective when it serves multiple social, cultural, and environmental needs. The Shielin-bough project also shows how collaborative, interdisciplinary learning environments can revitalize northern knowledge systems through building, storytelling, and hands-on engagement (Jokela & Wall, 2024, p. 90). Much like the yurt project, it demonstrates that material knowledge, cultural memory, and ecological responsibility are not separate aspects of design but must be intertwined to create spaces that are regenerative rather than merely sustainable. The multi functionality of the yurt positions it as more than just a shelter, it becomes a cultural hub where artists can exhibit their work, a sustainable tourism landmark that educates visitors on ecological design, and a community gathering space that fosters dialogue between locals and travelers (Huhmarniemi & Cervantes, 2023, p. 54). These real-world applications reinforce the importance of integrating historical building techniques with contemporary sustainability efforts. The success of this project suggests that heritage-driven architectural innovations can contribute to a broader shift in how sustainable structures are designed and implemented.

Following the insights from the Shielin-bough collaboration, it is clear that building for the future requires an ecocultural sensitivity that honors traditional knowledge systems while creatively adapting them for new contexts (Jokela & Wall, 2024, p. 95). The yurt project, with its integration of local materials, bike-felting techniques, and participatory processes, offers one such model. By demonstrating that a structure deeply rooted in tradition can serve modern needs without compromising its historical significance, this study highlights the potential for similar approaches in other contexts. Future explorations of this model could focus on expanding its applicability to other climates, materials, and cultural

settings, further testing the viability of sustainable, culturally responsive design in shaping the future of architecture (Leavy, 2017, p. 118). In developing the Finnish Yurt, this study aligns with broader decolonial strategies that challenge the dominance of Western capitalist frameworks in shaping environmental futures. As Demos (2016, p. 13) argues, environmental activism must be understood as inseparable from social justice struggles, particularly those led by Indigenous and marginalized communities. The yurt project, which revitalizes traditional craft practices like felting and incorporates locally discarded materials, reflects this ethos. By working with discarded wool and traditional crafting methods, the project resists extractive industrial systems and reaffirms the value of local ecological knowledge. As Demos (2016, p. 13) emphasizes, environmental practices that fail to address colonial histories risk reproducing the very structures they aim to critique. This approach places the yurt not only as a sustainable design solution but also as an act of cultural and ecological resistance.

According to Pietarinen and Qureshi (2024), the Life Between Art and Blood project explores the cultural and ecological implications of using reindeer blood, an often-discarded by-product of herding, in artistic practice. Their research reframes this biological material through a post-humanist and ethical lens, challenging conventional boundaries between nature, culture, and creativity. As they explain, *"*The project repurposes reindeer blood, an often-overlooked by-product of reindeer herding, to provoke ethical discussions on sustainability and cultural sensitivity within the arts*"* (Pietarinen & Qureshi, 2024, p. 1). Inspired by this approach, the yurt project similarly rethinks material use by incorporating discarded wool, a locally available and culturally significant material in Lapland, not within bioart, but in sustainable architectural practice. While Pietarinen and Qureshi's work highlights the symbolic and provocative dimensions of reindeer blood in art, the yurt reinterprets wool through ecological design and participatory construction. In both cases, the act of reintroducing undervalued materials into contemporary creative processes reflects a shared commitment to environmental responsibility, cultural revitalization, and local knowledge systems. Moreover, a similar approach can be found in the work of Qureshi et al. (2025), who explore how Indigenous artists reinterpret traditional practices, such as felting, through digital storytelling and

collaborative, arts-based research. As they explain, “through the reinterpretation of cultural art forms such as felt-making, Indigenous artists infuse their creative identity while honouring the origins of the art form” (Qureshi et al., 2025, p. 123). This mirrors the yurt project's use of wool as both a functional and symbolic material, honoring its historical roots in nomadic life while adapting it to suit contemporary sustainability goals. Furthermore, their emphasis on “combining traditional hand-felting techniques with modern machinery” (Gureshi et al., 2025, p. 135) resonates directly with the project’s experimentation with bike-felting, a community-driven, low-impact method developed by the Villaino team. These overlapping methods reflect a broader paradigm of cultural sustainability, where architectural innovation is inseparable from ecological ethics and local heritage. Like the artists in Qureshi's study, the yurt project reframes material knowledge as a tool for cultural continuity, creativity, and environmental justice.

Future Research Directions and Achievements

This research highlights the potential of integrating traditional nomadic structures, sustainable materials, and participatory design into contemporary architecture, yet several aspects warrant further exploration to enhance their practical application and scalability. While this study demonstrated the viability of discarded wool as a building material, further investigation is needed to optimize its durability, insulation properties, and resistance to environmental factors such as moisture and pests. Exploring advanced felting techniques, hybrid material compositions, and the potential for integrating wool with other natural or bio-based materials could improve structural performance and longevity.

Adapting traditional yurt principles to the Nordic climate presents both opportunities and challenges. Investigating structural reinforcements, modular adaptations, and technological innovations could improve the resilience of wool-based shelters against harsh weather conditions, including heavy snowfall and high winds. Computational

simulations and real-world prototyping would provide valuable insights into their efficiency. Beyond their cultural and artistic significance, these structures have the potential to serve as emergency shelters, eco-tourism accommodations, and off-grid living solutions. Scaling sustainable nomadic architecture for broader applications requires further research into mass production methods that preserve environmental and cultural integrity.

This study also emphasized the importance of collaboration with local artisans, researchers, and communities. Further development of participatory design models that integrate the knowledge of indigenous groups and craftspeople could refine the use of sustainable materials in architecture. Longitudinal studies assessing the social and economic impact of such initiatives on local communities could help validate their long-term benefits. In connection with knowledge dissemination, the upcoming Villaino exhibition at the faculty of the University of Lapland presents an opportunity to explore how public engagement with these projects influences awareness and discourse on sustainable architecture. Documenting visitor interaction, feedback, and potential collaborations that arise from the exhibition could provide valuable data on the role of artistic and architectural displays in shaping new perspectives.

The innovative research and design efforts carried out through the Felted Futures concept, which includes the Finnish Yurt project, were recognized internationally. Our team was awarded the overall first prize at the This is Bioeconomy! International Design Award in 2025, organized by the EU-funded Engage4BIO initiative (Engage4bio, 2025). The competition sought to highlight projects that advance the bioeconomy by integrating sustainable practices, renewable materials, and culturally meaningful design approaches. Among a wide range of international entries, our project was celebrated for its creative fusion of traditional horse-felting techniques with modern sustainable design methods, offering a circular economy solution tailored to Arctic rural environments.

The award ceremony was held at the Moholy-Nagy University of Art and Design (MOME) in Budapest, Hungary, where our work was exhibited alongside other shortlisted entries (Figure 14). The jury emphasized the project’s strong integration of indigenous knowledge,

local material use, and innovative bio-based architectural thinking. This recognition not only validated the research approach taken in this thesis but also reinforced the relevance of cultural and ecological integration in contemporary design practices. It demonstrated how community-centered, craft-based innovation can contribute meaningfully to global discussions about sustainability, resilience, and the future of architectural design. Our project is also published in Finnish newspaper (Lapin Kansa, 2025).

Figure 14. Pictures from the event at the Moholy-Nagy University of Art and Design (MOME) in Budapest, Hungary. March 2025

According to Cervantes (2025), "We are truly delighted with this recognition and the collaboration we carried out last summer at our wool camp at the Navetta Gallery in Äkäslompolo," states Lola Cervantes. "Our project highlights the combination of traditional craftsmanship and contemporary aesthetics, as well as the significance of soft architecture, bio-based materials, and co-design. Our work demonstrates how traditional craft techniques can inform contemporary architectural solutions to promote sustainable, resilient, and culturally meaningful design in the Arctic region." (University of Lapland Website)

Conclusion and Recommendations

The design of a sustainable nomadic-inspired shelter was impacted by cultural, environmental, and artistic inquiry. In order to create a functional, environmentally responsible, and community-oriented structure, this research aimed to combine historical knowledge, natural materials, and modern design concepts. The project was connected to Lapland's landscape and cultural history of Finnish and Sami traditions while integrating modern sustainable techniques. In the beginning, I researched historical studies of nomadic shelters to understand how mobile architecture has evolved during the decades to meet different environmental and social demands. During this stage, I found out the value of traditional structure techniques, especially felting and lightweight structural frameworks, which have historically been used by nomadic cultures around the world in different shapes and forms based on their situations. The connection between mobility, sustainability, and adaptability became the foundation of my research. As I explored these aspects, I also confronted the challenge of translating historical techniques into a contemporary, contextually relevant design.

Material experimentation became a key focus. Testing discarded wool as insulation, I explored its thermal efficiency, environmental impact, and feasibility as a locally sourced material. The bike felting technique, adapted from traditional methods, became an integral part of the project, highlighting the potential for sustainable, participatory design methods. Working with wool was not just a technical process, it was an engagement with local traditions and an attempt to revive an overlooked material through innovation. The hands-on approach allowed for a deep understanding of material behavior and contributed to the development of a shelter that is both functional and expressive of cultural identity. Throughout the research, the role of tourism and local community engagement was also explored. The project was not simply about creating a structure but about fostering connections between locals, visitors, and the landscape. The Navetta Gallery, an important cultural hub in the area, served as a reference point in understanding how art, design, and community spaces can coexist. The structure I developed is intended to function as a cultural landmark, a resting place for travelers, and a space for artistic and

educational activities. In doing so, it contributes to both eco-tourism and cultural sustainability.

This research process was not linear, but it involved constant re-evaluation, hands-on experimentation, and adaptation to new insights. I initially set out with a structured research plan, but the process of making, testing, and engaging with the environment and community reshaped my approach. The field trips to Akaslompolo and direct involvement in felting sessions provided practical knowledge that could not have been gained through literature alone. The experience reinforced the idea that designing with nature requires an ongoing dialogue with materials, landscapes, and people. One of the central challenges was navigating the line between historical inspiration and contemporary application. The project aimed to honor traditional techniques without reducing them to aesthetic references. The intention was always to create a structure that is contextual, respectful, and functionally relevant rather than a thematic reproduction of the past. This approach aligns with the broader discussion of how history is used in tourism, how cultural heritage is preserved, and how innovation can emerge from tradition. Looking back, I see this project as more than just the creation of a physical structure. It represents a way of thinking about sustainable design as a dialogue between past and present, between material and environment, between mobility and permanence. The research has shown that shelters can be more than mere protection; they can be cultural symbols, spaces for interaction, and tools for sustainable tourism development.

In practical terms, the project demonstrated how a low-impact, seasonal structure built with discarded materials and locally sourced resources can blend into its landscape rather than disrupt it. The yurt is envisioned not as a permanent monument, but as a lightweight, modular space that supports, rather than overwhelms, its environment. The prototyping phase raised concerns about structural stability in extreme weather, especially heavy snow, and the physical intensity of the felting process presents questions about scalability. Furthermore, while feedback from participants in Äkäslompolo and Navetta Gallery was encouraging, the engagement was limited in scope. Broader regional testing would be needed to evaluate how this model could adapt to different communities across Lapland. Yet these limitations are not setbacks; they serve as valuable directions for

future development. They remind us that design is not a fixed endpoint but a process shaped by negotiation, experimentation, and context. When merged with participatory and artistic research, architecture becomes a space for exchange: between tradition and innovation, human use and ecological sensitivity, and between the designer and the community. That, ultimately, may be the most enduring insight from this research: the true strength of the yurt is not in its structure alone, but in its capacity to generate connection, shared meaning, and continued creative collaboration.

I do not see this project as finished but rather as a step in an ongoing exploration of how architecture, culture, and sustainability intersect. The potential for further refinement, community-driven iterations, and interdisciplinary collaborations remains open. Sustainable design is never a fixed outcome but an evolving process, adapting to new knowledge and changing environments. As I finalize this research, I remain open to critical reflections, discussions, and future developments. The process of creating, testing, and adapting has reinforced my belief that design should be responsive, responsible, and deeply rooted in its context. I hope that this work serves as an example of how sustainable practices, cultural heritage, and contemporary needs can coexist in meaningful ways.

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AI technologies, including language models such as ChatGPT and Grammarly, were utilized during the writing process of this thesis to support language refinement, improve readability, and ensure grammatical accuracy. These tools assisted in editing and organizing content more clearly but were not involved in generating the core ideas, arguments, or research findings. All academic content, interpretations, and conclusions presented in this thesis are the original work and responsibility of the author.

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