This contextual review lays the conceptual and practical groundwork that has shaped the direction of my project, focusing on how the ideas of unpredictability, material agency, and the adaptability of nomadic culture influence contemporary approaches to craft and fashion artefact design. It investigates how makers navigate the uncontrollable aspects of both material and environment, drawing on traditional nomadic architecture and cultural practices, particularly those rooted in nomadic ways of living from my own cultural background, as sources of both inspiration and method. A discussion around traditional vernacular, craft theory, and fashion design, identifies strategies that emphasize transformation, impermanence, and the adaptability with materials. From this standpoint, it reinforces the aim of my project: to develop modular, wearable artefacts that embody the dynamic tension between human control and the autonomous nature of materials.

Adaptability and nomadic culture

Growing up with a Mongolian background in Inner Mongolia, I've always felt adeep bond with nomadic traditions. It's a way of life rooted in movement, deeply in tune with nature. It shaped not only how my ancestors lived, but the very tools and materials they used. But nomadism isn't just about moving from place to place; it's about learning to stay balanced, to bend with the winds of change, and to adapt wherever life takes you.

Mobility is described as an important way for nomadic people to adapt to their environment (Myadar & Smith, 2020). Instead of staying in one place, nomads move in response to changes in weather, resources, and land conditions. This movement is not random—it is a smart and flexible way of living. Mobility helps protect both daily life and cultural identity. It also suggests that objects used in nomadic life, such as tents and tools, are designed to support this way of moving. These nomadic practices, the materials and technologies adapted to the condition of living have inspired me think about how design can respond to change and uncertainty, especially through flexible materials and simple, adaptable forms.

Construction of a yurt. Photograph, Matthieu Paley for National Geographic.

Traditional Mongolian vernacular, particularly the yurt, exemplifies a building structure that is inherently adaptive, portable, and environmentally responsive. The yurt's circular form, lattice wall (khana), radial roof supports (uni), and central crown (toono) are ingeniously designed to be disassembled and reassembled with ease, allowing nomadic herders to move in accordance with seasonal shifts and grazing needs (National Geographic n.d.).

This architectural logic directly influenced my design project, to develop a modular structure, and cover the hard, rigid structural supports with soft materials. The aim being to balance structure and softness, functionality and openness. In the design development Chapter, I will explore the visual tension between the soft and hardened leather and the rigid wood components and reference the interplay between the rigid, flexible and foldable frame of the yurt and its soft insulating covering.

As nomadic culture is characterised by adaptability and mobility, survival depends on working with nature rather than controlling it, such bags and containers play a central role. They are indispensable for storing food, carrying tools, or transporting belongings across long distances, but they also carry symbolic meaning through materials and craftsmanship. In the Mongolian tradition, for instance, leather saddle bags, woolen pouches, and woven containers not only facilitate daily movement but also embody cultural identity and social continuity.
Such objects illustrate how function and cultural expression are interwoven. This perspective resonates with Ursula K. Le Guin's 'Carrier Bag Theory of Fiction' (1986), which reframes the container as the first cultural device, focusing on the relational act of holding and sustaining. Seen in this light, traditional bags are not merely practical tools but material metaphors for resilience, adaptability, and the capacity to carry both necessities and narratives of cultural continuity.

Left: Pack horses carrying daily use with Stone Mongolia's Gorkhi Terelj National Park. Source: www.stonehorsemongolia.com Right: Herders' handmade yak leather bags, Resources from photos of local handicraft stores in Tibet

Nomadic carrying device, Pitt Rivers Museum, Oxford. Photography by the author (2025).

In my project Nomadic Adaptation, I draw upon my community's heritage linked to architecture and carrying devices adapted to nomadic living to develop a collection of modular bag structures that translate nomadic adaptability into contemporary design. Inspired by Le Guin, who frames the container as the first cultural tool, my work repositions bags as more than functional objects, they are 'containers' which function as metaphors of adaptability and continuity, holding both practical needs and cultural memory. The modularity of the prototype containers I design echoe the reconfigurable logic of nomadic life and in particular the yurt dwellings, suggesting ways in which contemporary wearable design can respond dynamically to shifting environments while remaining embedded in cultural tradition. As human behaviour continues to shift under the influence of technological change, climate instability, and new patterns of migration, the objects we carry may also transform. Today's nomads carry not only physical necessities such as clothes, tools, food, but also digital devices, power supplies, etc. Therefore, my designs will respond to the needs of modern nomads, and I will discuss this in the design development chapter.

Unpredictability and Material Agency in Craft

The concept of ‘unpredictability’ in craft challenges traditional narratives of precision and perfection. In the field of processes, uncontrollability often results from the inherent properties of the material, environmental conditions, and the interaction between the maker and the medium. Curator Glenn Adamson (2007) argues that the craft itself is entangled with failure, improvisation and material resistance, which resist total control and open a space for discovery. He also emphasizes that the craftsmanship, materials and time qualities of the process leave space for surprises, especially when using natural materials. The state of these materials usually changes with the variations in environmental conditions. My research draws on these ideas, positioning uncontrollability as an important condition for creative expression.

Artistic creation is not about pursuing perfect control and predetermined outcomes, but rather about responding to the complex world through actions in an environment that is constantly changing and full of uncertainties (Bogart, 2007). As Anne Bogart (2007, p.10) said, “Artists must learn to find the power of action in uncontrollable situations rather than attempting to fully incorporate the world into their own control”. For my research, this notion provides the theoretical support for understanding the significance of uncontrollability in design and materials.

In my project, it is important for me to personally experience the interaction between myself as the maker and the materials, and to communicate this process to others. Through making, I will observe how materials behave both under human control and in their natural state, highlighting the dialogue between control and release. This approach encourages the viewer or wearer to focus not only on the final outcome but also on the process of transformation and negotiation between maker and material.

The artist Robert Morris (1931–2018)) championed the embrace of unpredictability with a series of artworks using the medium of felt (Fig 1). These works intentionally allow the materials to sag or collapse under their own weight. By surrendering strict structural control, Morris redefined the artist's role as one of facilitation rather than dominance. Materials are not merely objects shaped by human intentions; rather, they are active contributors and participants in the making process.

Untitled (Brown Felt), Robert Morris (1931).

Political theorist Jane Bennet (2010) holds that materiality has its own form of agency, influencing and even initiating actions independent of human intentions. This view defines the relationship between manufacturers and materials as a dynamic and unpredictable interaction. Anthropologist Tim Ingold (2013) criticized the "hylomorphic model" (from form being imposed onto materials) that was traditionally emphasised in design for its past focus on outcomes. Instead, Ingold advocates for the concept of "correspondence", which is the gradually forming of the work through interaction with materials during the making process, rather than forcibly shaping it.

These perspectives provide the foundation for my practice. Through the comparison of soft, wool and leather and hardened leather and wood, my research not only aims to emphasize the physical imbalance but also highlights how the material's own agency during the design process defines the final form of the work.

In addition to theoretical perspectives from craft and material studies, fashion-specific research further informs this project's exploration of body, material, and temporality. The concept of "material time" within slow fashion (Fletcher, 2010) challenges the linearity and speed of industrial production by highlighting how materials carry traces of environmental exposure and human interaction. This idea supports my interest in allowing materials to shift, deform, or respond over time. I will discuss this in the design development section xxxx.

Contemporary Research

Practitioners

Enkhbold Togmidshiirev

Mongolian contemporary artist Enkhbold Togmidshiirev integrates nomadic cultural elements into his conceptual performances and installations. His Ger Project involves constructing and performing within portable structures inspired by the traditional Mongolian ger (translate), symbolizing mobility and adaptability inherent in nomadic life. Enkhbold's works often utilize organic materials such as horse dung, felt, ash, and rust, connecting his art to the natural environment and traditional practices.

The example shown from Enkhbold Togmidshiirev's Ger Project consists of a spherical structure constructed from interwoven wooden slats. Its form resembles the skeletal framework of a Mongolian ger, translating nomadic architectural principles into a portable and sculptural language. This understanding of structure as mobile rather than fixed has directly influenced my own design thinking. His work suggests that architecture can be reconfigured, carried, or temporarily inhabited, encouraging me to explore modular components and detachable units as a form of "wearable architecture" that adapts to bodily movement and shifting environments.

Performances, Ger Project Enkhbold Togmidshiirev (2015).

Lucy Orta

Visual Artist and Professor Lucy Orta has been researching and creating portable and modular architecture for the last thirty years. Her works has responded to the needs of migrant and nomadic communities as well as suggesting ways of adapting to uncertain futures, be this conflict or climate change.

A notable work is Refuge Wear – Habitent (1992) realised at the outbreak of the first Gulf War and in response to the need to shelter and clothe displaced people fleeing the conflict zone. This one-person tent that transforms into a poncho exemplifies the potential for wearable structures to provide immediate shelter to survive in harsh environments, reflecting a nomadic logic of mobility and protection. Other works in the Refuge Wear series (1992-1998) respond to the needs of homeless people. Like the Habitent they include rigid structures (telescopic poles) that support a range of soft metaphorical textile membranes that acts as membranes against harsh society, such as anti-abrasive and aluminum mirror. The works transform from sleeping bags into anoraks, this modularity is adaptable to living on the streets.

Lucy Orta, Refuge Wear – Habitent (1992).

Her most recent sculpture Bayt Al Sha'ar (House of Hair) (Fig x) draws from Middle Eastern Bedouin nomadic vernacular, taking the form of a large family tent (5m x 3m50) that can easily be assembled, dissembled and transported, replicating the nomadic traditions embedded in the Mongolian yurt. The components of the tent include a series of visual jacquard woven tapestries, a simple rigid U-shaped interior support structure, a canvas and natural wool roof and guy ropes that provide the necessary tension to anchor the soft architectural walls to the ground, providing stability for the dwelling. House of Hair is a speculative reflection the possible return to nomadic living if climate change were to dramatically alter our environment, resulting in mass-desertification. Lucy Orta questions our capacity to adapt by looking at nomadic people's traditions and technologies.

Bayt Al Sha'ar. Lucy Orta 2025 Exhibition at the 20205 British Textile Biennial

DZHUS

Ukrainian concept fashion brand DZHUS' Fall/Winter 2023 collection "TRANSIT" showcases a high degree of adaptability and versatility in design. The garments in the collection can transform according to the needs of the wearer and changes in the environment, a design that not only reflects the quest for functionality but also symbolizes the upheaval and adaptation that Ukrainians experience during the Russian invasion. (Pragmatika.Media, 2023).

“TRANSIT”, DZHUS AW23 collection (2023).

Craig green

In Craig Green’s Spring 2025 collection, the garments are conceived as a detachable and reconfigurable hierarchical system. This approach has informed my own modular design thinking. Drawing on Green’s concept of “clothing as a structure” (Green, 2024), I explore how multiple detachable units can generate different functions or expressive possibilities. In the process of material selection and structural testing, greater emphasis is placed on assembly ability, reusability and disassembly logic, in order to achieve "wearable architecture" (ibid) that is more in line with body movement and environmental adaptation.

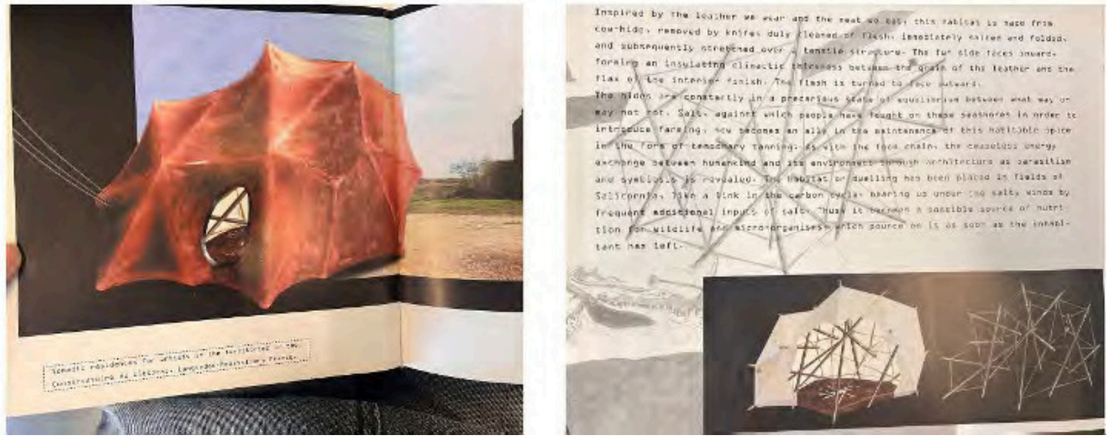
Craig Green SS25

Summary

Across these practitioners, a shared concern with mobility, adaptability, and material responsiveness has shaped my own design thinking. Enkhbold Togmidshiirev’s practice prompted me to consider how nomadic culture’s fluidity and portable structures can be translated through materials and form. Lucy Orta’s work demonstrated how architectural logics can be integrated into wearable systems to address both protection and functionality. DZHUS highlighted how adaptability and transformability emerge from conditions of instability, offering methods for reconfigurable constructions. Craig Green reinforced the potential of modular systems and detachable units to create structural garments that move with the body. Together, these examples inform my approach to developing wearable artefacts that express transformation, viewing modularity and nomadism as intertwined metaphors for structure, adaptability, and cultural continuity.

Contemporary Architecture

In contemporary architecture, lightweight modular structures and flexible connections enable mobility and adaptability. Works such as Shelter System and Portable Architecture explore tension-based structures that can be easily expanded, folded, or fixed using minimal joints. Kouichi Okamoto's tent designs similarly show how soft textile membranes can be combined with rigid poles to create transformable shelters that respond to different environments.

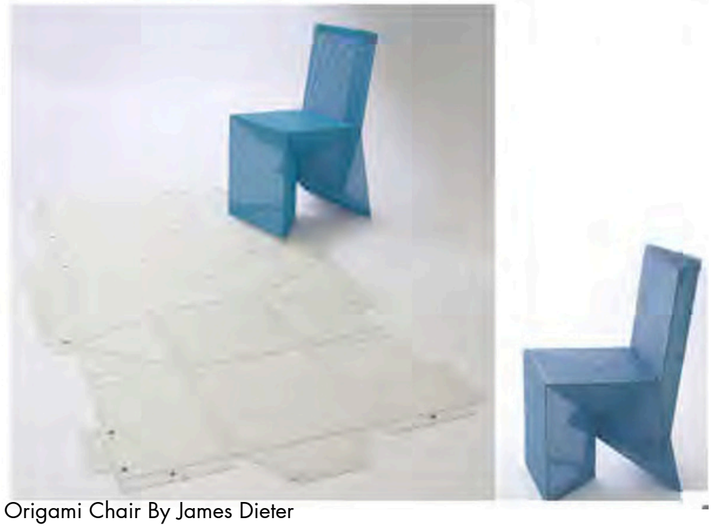


Portable Architecture: and Unpredictable Surroundings (Robert Kronenburg, 2011).

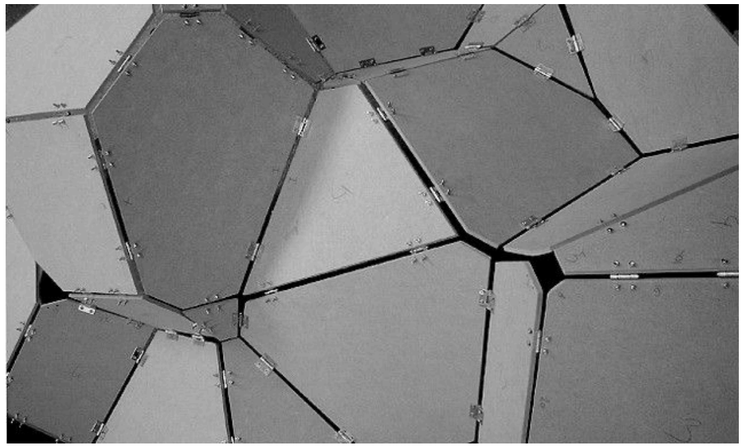
Kouichi Okamoto, Tent Design (2014)

STARP—— The North Face

Geometric inspiration and stability of modern mobile buildings In addition to traditional buildings, I also studied contemporary reconfigurable building systems. Although these systems differ in materials and contexts, they share the common feature of relying on precise geometric structures to achieve their reconfigurability and stability: Application of geometric structure: Modern mobile buildings manage pressure and achieve rapid assembly through precisely calculated geometric structures. This further reinforces the necessity of precise and controllable geometric division in my design. Stability and lightweighting: These buildings often aim for stability while pursuing lightweighting. I drew inspiration from the strategy of combining lightweight wood and leather tension to ensure that my wearable container maintains geometric rigidity while not becoming a heavy burden on the body.



Origami Chair By James Dieter



Voronoi wall - Grasshopper

Through studying portable and adaptable architecture, I realised that mobility is fundamentally enabled by modular units and flexible connection systems. Whether using tension-based structures or repeated geometric components, these examples show how flat elements can be assembled, folded, or expanded to create adaptable forms. This modular logic aligns with my interest in nomadic structures and directly informs my design approach.

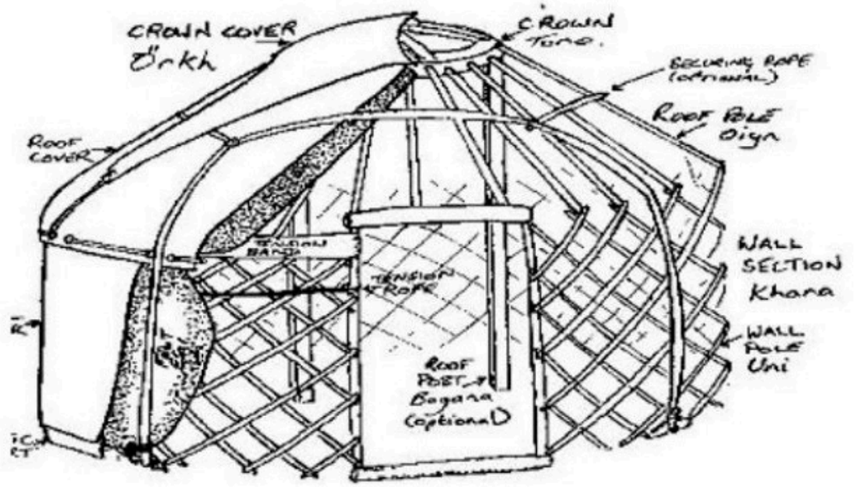
Based on this, I began experimenting with transforming flat geometries into three-dimensional forms at a wearable scale. The next page shows my initial tests, exploring how different shapes, folds, and joints can generate structural volume.

Traditional nomadic architecture

Vladimir Basilov, 'Nomads of Eurasia', Los Angeles, 1989

The Yurt

The adaptability and flexibility of nomadic life, as well as the movable architecture in a modern context, inspired my designs. Convenient tent setup and traditional yurts, among others, demonstrate an efficient modular attachment and disassembly system, and their structures require a combined connection of the system to assemble and disassemble without the need for permanent fixtures. Yurts wooden lattice walls, roof poles, and central crown are joined through interlocking and tension-based systems, which allow stability through flexible connections rather than rigid fixation. The characteristics of nomadic cultural architecture inspired my exploration of modular design with the variability of spatial logic, and the internal space can be flexibly arranged according to functional needs. The detachable and reusable unit structure can be applied to modern structures.



Structural diagram of a traditional Mongolian yurt, showing the interlocking framework of roof poles, wall lattice, and central crown. Source: Mauvieux, B., Reinberg, A., & Touliou, Y. (2014).

Geometry in Nomadic Architecture

The origin of the geometric structure: Abstractingnomadicarchitecture
My geometric structure is derived from the structural analysis of the traditional mobile buildings of nomadic peoples.
The **structural logic** of the Mongolian yurt: The supporting system of the Mongolian yurt is composed of wooden lattice walls (Khat). These lattices are based on rhombic or hexagonal units, and their unique interlocking and hinging methods provide crucial insights: The structure has strong rigidity and stability when expanded, but can be quickly folded and compressed when disassembled.
Extraction of design elements: I abstracted this dynamic rigidity and chose triangles, rhombuses, or similar geometric shapes as my basic units. These geometric shapes in the design perform the core function of "rigid control", ensuring that the container can provide precise and predictable structural support when carrying fragile electronic devices.

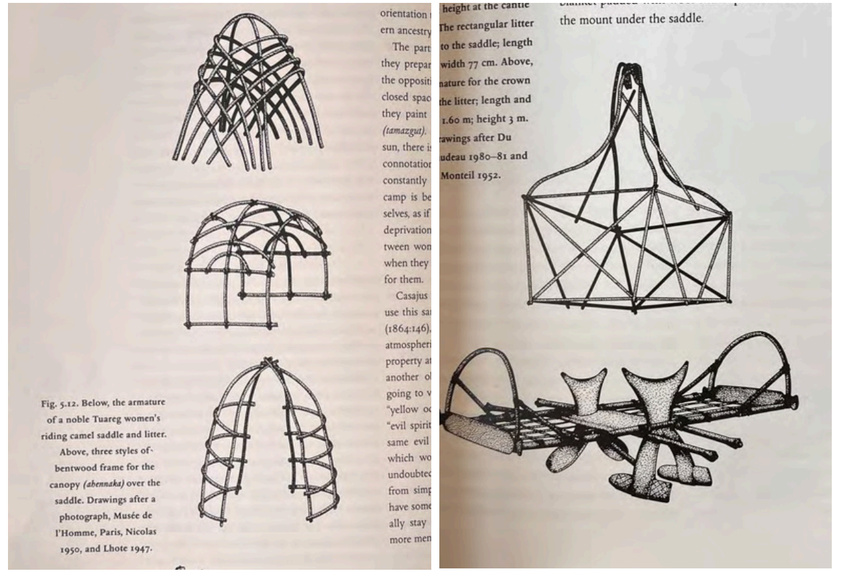


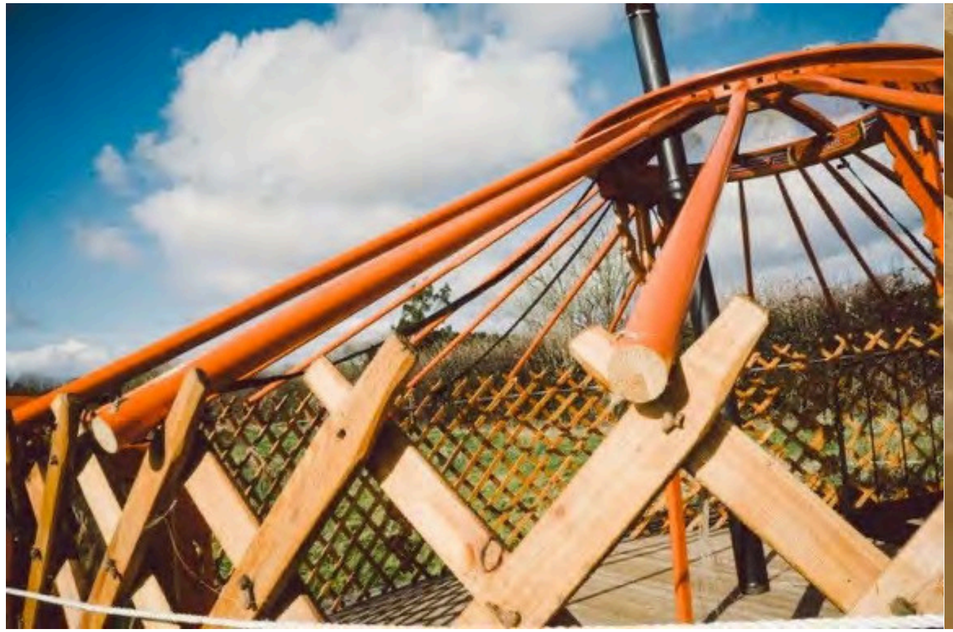
Fig. 5.12. Below, the armature of a noble Tuareg women's riding camel saddle and litter. Above, three styles of bentwood frame for the canopy *(ahennaka)* over the saddle. Drawings after a photograph, Musée de l'Homme, Paris, Nicolas 1950, and Lhote 1947.

the mount under the saddle.

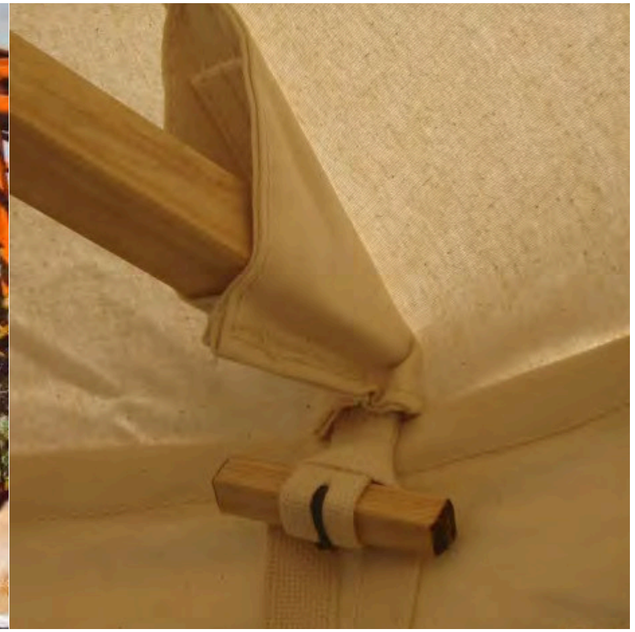
African nomadic architecture : space, place and gender

Tibet architecture Annette Etges Photography

Traditional connection method



The connection method for Mongolian yurtshttps://www.somersetyurts.co.uk/yurt-set-up-2015/



Medieval and Renaissance Pavilions–Philippa Montague

In traditional connection methods, such as the construction of nomadic tents, low-tech but highly adaptable connection forms like knots, perforations, binding, and hooks and loops are widely used. The wooden lattice walls (khat) and the top structure of the yurt form a unique interlocking and hinged connection method, which inspired my exploration of cross-connection methods.

Traditional Nomadic Containers

This bag made of animal skin is used to make airag*—fermented mare's milk.*

Mongolian Cloud Houses: How to Make a Yurt and Live Comfortably https://archive.org/search.php?query=subject%3A%22Kuehn%2C+Dan+Frank%2C+1951-%22

Saddle bag Hbebwy Nation Museum

When decomposing the concept of "nomadic adaptability", the bags and containers in traditional nomadic cultures are indispensable research subjects. These items are miniature models of nomadic life, reflecting a high degree of synergy between materials and the environment. Early containers, such as leather bags, milk bags, or tool bags made from animal skins and felt, were designed for simplicity, lightness, and functionality. Their structures were typically non-geometric and amorphous, capable of freely deforming in response to irregular contents (food, water, clothing, or tools) inside. This design philosophy maximized the natural resilience of materials (such as the waterproofing of leather and the insulation of felt), achieving the basic needs of nomads for mobility and durability in harsh natural environments.

However, although traditional bags perfectly embody the "adapting spirit" of nomadism, their flexible and non-structured nature cannot meet the demands of contemporary life. As the nomadic activity context shifts from the wilderness to the city, the contents have rapidly evolved from organic, malleable materials to rigid, fragile, and geometrically precise electronic devices (such as mobile phones, tablets, and power banks). This fundamental change in the nature of the contents poses new challenges to containers: they not only need to be flexible for quick movement, but also need to actively provide precise, geometric structural protection. Therefore, we enter the next stage of research to systematically define the cross-generational evolution of this migration carrying requirement, thereby providing a solid foundation for the introduction of geometric structures and rigid control elements in my design.

Nomadic transportation needs

Basedon theneeds ofboth traditional nomadicandmodern nomadic lifestyles, as well as the forms of traditional nomadic bags, my design will start by integrating traditional nomadic materials with modern requirements.

Requirement Aspect	Traditional Nomadic Needs (past)	Design Strategy (Traditional Containers)	Modern Nomadic Needs (Present)	Design Strategy (My design)	Core Tensions
Contents Carried	Life essentials (food, water, tools), often irregular and soft.	Container must be soft and pliable to conform to contents.	Electronic Devices (tablets, chargers, phones), often rigid and fragile.	Container must provide rigid, geometric structure for protection	Softness vs. Rigidity
Environmental Context	Harsh natural conditions: wind, rain, temperature extremes, long-distance migration.	Prioritize natural resilience, waterproofing, and stackability for bulk transport. Mobility Pattern: Long- distance, slow, periodic relocation.	collisions, pressure, constant short-distance movement, need for frequent access	Prioritize precise sizing, anti-shock construction, and quick-release connections.	Durability vs. Precision
Mobility Pattern	Long-distance, slow, periodic relocation.	Focus on carrying capacity and material toughness.	Short-distance, rapid, frequent movement and functional reconfiguration.	Focus on Modularity for instant assembly/disassembly of components.	Endurance vs. Adaptability
Design Logic	Passive Adaptation: The container follows the form of the contents and the environment.	Reliance on the natural properties of materials (e.g., leather, felt) to manage load. Modern Nomadic Needs (Present)	Active Protection and Reconfiguration: The structure must actively shield contents and allow user-defined reassembly.	Reliance on engineered geometry and structural components (wood/hardened leather). Core Tensions	Agency (Non-Control) vs. Control