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Experiential Nature Tourism Architecture

Doctoral thesis

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ANNOTATION

The doctoral thesis “Experiential Nature Tourism Architecture” explores how architectural thinking can support the development of new nature tourism destinations that are both engaging and ecologically responsible. As nature tourism grows, so does the pressure on iconic and fragile sites. This work examines how architecture through spatial design, materiality, and program can help distribute visitor flows more evenly, reduce anthropogenic stress, and foster more meaningful interactions with nature. Rather than treating the built environment as a backdrop, the thesis positions it as a mediator between humans and landscapes. It investigates how structures like shelters, trails, observation points, and small-scale interventions can shape sensory and emotional experiences. A key question is how these architectural elements can heighten awareness and connection, rather than distract or dominate. The thesis is structured into an Introduction, three main chapters, and a Conclusion. It draws on 2,797 sources, including 127 research papers and 2,570 case-specific references, compiled into a database (Annex 7) of experiential nature tourism destinations. The appendices support the analysis with additional contextual material.

Many countries continue to rely heavily on iconic, naturally formed, and often highly protected sites to attract nature tourists. While these destinations hold strong appeal, this overdependence can limit a country’s ability to sustainably manage increasing visitor numbers and diversify its tourism offer. This thesis investigates how a broader architectural and experiential approach might address that challenge. The study draws on a comparative analysis of 1,000 nature tourism destinations across Asia, Africa, North and South America, Antarctica, Europe, and Australia. Destinations were examined through the lens of their primary attractors: (a) the uniqueness of the perceived experience or narrative, (b) the presence of architecture or innovative use of the built environment, (c) distinctive natural features, and (d) hybrid combinations of the above. From this, eight levels of nature–architecture symbiosis were developed to describe how built elements interact with and enhance natural tourism experiences.

Collected data suggests that purpose-built, experience-oriented destinations are more prevalent in highly developed tourism markets like the Nordic countries, the United States, South Korea, New Zealand, and Japan. In contrast, less developed or emerging destinations for example Brazil, various regions in Africa, India, and parts of rural China tend to center on authentic natural features and adaptive reuse of existing infrastructure where a more intentional and design-led approach to development may help manage visitor impact and reveal new opportunities for growth. Research findings are presented in five academic articles. Four have been published in international peer-reviewed journals, one is under review, and the results have also been shared at both international scientific conferences and doctoral research forums.

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INTRODUCTION

As demand for authentic nature-based experiences continues to rise, many natural destinations are experiencing the strain of overtourism. The influx of visitors, even to previously remote areas, poses serious risks to fragile ecosystems and, at times, to the tourists themselves. High-profile examples include the overcrowding at Everest Base Camp in 2019 and subsequent years, where long queues formed in extreme conditions, placing pressure on the environment and the Sherpa guides navigating tourists through the terrain [91, 109, 147]. More accessible destinations like Stonehenge in the United Kingdom, have faced similar pressures. In response to landscape degradation, authorities have introduced measures including restricted visitor access and mandatory guided tours [5]. Norway's Trolltunga a once less-known hiking destination has also seen a dramatic rise in foot traffic, leading to trail erosion and environmental damage. A permit system has since been introduced to manage visitor numbers [6, 82]. Selected examples show insight on the impact of overtourism on nature tourism destinations. With the growing interest in outdoor-based experiences, addressing this issue becomes crucial for both tourists and the tourism industry. including finding new measures and solutions for overtourism as current approach of limiting the number of visitors can reduce access to nature tourism destinations and encourage elitism and tourist segmentation.

These examples reflect a wider issue: as nature tourism grows, traditional management strategies often rely on limiting access, which may inadvertently promote exclusivity and reduce public access to shared natural heritage. Such strategies, while protective, are not sufficient on their own. A more forward-looking approach requires expanding the tourism offer beyond overburdened sites. This research is grounded in literature, study analysis and extensive fieldwork. Between 2014 and 2024, the author conducted 341 organised outdoor tours across Europe, East and South Asia, and East Africa, covering 17,768+ kilometres on foot. These outdoor tours were complemented by 12 tourism product development workshops held in Latvia, focused on local knowledge transfer (Annex 1, 2, 3). Outdoor tours suggest that nature tourists increasingly value destinations that integrate basic infrastructure and offer a high level of experiential quality. Along hiking routes coordinated by the author, visitors often skipped segments lacking interactive or visually appealing features but chose to linger, photograph, and rest at sites offering seating, shelter, or other simple built interventions (Annexes 1, 2, 3). These behavioural patterns point to the importance of spatial design in shaping visitor experiences and dispersing tourist flows.

The current model, concentrating tourism in a few iconic destinations risks long-term environmental degradation and limits broader economic and social benefits. Over-reliance on these sites also narrows the market, failing to attract emerging tourist segments who seek new, innovative, and immersive experiences. There is untapped potential in many lesser-known areas, which, if developed through thoughtful spatial planning and experience-based design, could offer memorable alternatives. To address these challenges, a shift is needed toward more strategic tourism development including investing in destinations with the potential to deliver both ecological sustainability and rich visitor experiences, creating a wider network of attractions that are well-integrated with the built environment. Purposefully designed interventions when aligned with landscape values and local needs can support balanced visitor distribution and enhance the overall tourism landscape.

Previous Research: Research on nature tourism has grown steadily, with an emphasis on its ecological, cultural, and economic dimensions. Scholars have examined sustainable and eco-friendly approaches, focusing on tourist motivations, preferences, and behaviours. Environmental impact remains a central concern, and studies consistently highlight the role of local communities, government agencies, and other stakeholders in managing and developing nature tourism destinations. A recurring topic in existing literature is the need for responsible tourism practices, especially in ecologically sensitive areas. Visitor education, infrastructure development, and crowd control have been widely discussed as tools for reducing the pressure of overtourism. These efforts aim to balance conservation with continued growth in tourism. Marketing and communication strategies also play a significant role in shaping how destinations attract and engage visitors. Ecotourism is extensively explored as a form of nature-friendly travel. While many studies address the impacts of tourism on fragile ecosystems, relatively few focus on the potential for built, human-designed environments to support nature tourism. The possibility of using architectural interventions to create new experiential destinations thus reducing pressure on existing natural sites remains underexplored in the academic literature [34, 52, 72, 78, 91, 113, 115, 131, 135, 137].

Recent research highlights ecological design and transformative potential of architecture, where integration of built forms into natural landscapes enhances visitor engagement and fosters meaningful experiences. Architecture is understood not merely as shelter or utility, but as a catalyst for deeper interaction with nature. Studies have proposed various organizational typologies for nature tourism architecture, including classification by location, climate, relation to nature, and type of tourist attractor. These models support the development of more experience-oriented and sustainable destinations. The application of green and eco-friendly architecture principles has also gained traction, including energy-efficient design, use of local materials, and integration of renewable energy sources, key factors in reducing the environmental footprint of tourism infrastructure [17, 68, 118, 141, 144, 145]. Academic discourse regarding Landscape and ecological design highlight integrating architectural art, environmental design technologies, and local cultural elements in ecological parks and similar destinations seeking to elevate both the environmental sustainability and cultural resonance of built forms in natural areas. Aesthetic aspects of nature tourism architecture have been discussed in terms of harmony with landscape, contrast, viewing experiences, and architectural authenticity. Such features are seen as contributing significantly to tourist satisfaction and the perceived quality of the visit [9, 14, 26, 29, 135].

While interest in nature tourism, sustainability, and experience design continues to grow, research that brings these threads together, especially through the lens of architecture remains limited and scattered. There's still little discussion about how built interventions might create new kinds of nature destinations that ease pressure on existing natural sites rather than add to it. This study responds to that gap by exploring how architectural design can help shape a more diverse and sustainable future for nature tourism.

The Research problem focuses on overtourism and crowding in popular natural destinations, arising from a rapid increase in demand for nature tourism. Growing demand, contrasted with the finite capacity of accessible nature sites, accelerates environmental degradation, reduces the quality of visitor experiences, and presents significant challenges to the sustainable management of these locations.

The Research object is evolution of nature tourism architecture, specifically focusing on the transition from service and sightseeing destinations to involved experiential spaces. The

objective is to understand how nature tourism architecture has transformed over time to cater to the changing preferences and expectations of tourists seeking immersive and participatory experiences in natural environments.

The Research aim is to investigate the role of architecture in enhancing the experiential aspects of nature tourism. This study seeks to explore how architectural design can contribute to creating immersive and meaningful experiences for tourists engaging in nature-based activities aiming to provide theoretical and practical insights for architects, destination planners, and tourism stakeholders to design and develop nature tourism spaces that optimize visitor experiences and foster sustainable tourism practices.

Research Tasks

1. Based on literature studies observe the current evolution of nature tourism architecture, reacting to over tourism and crowding
2. Evaluate current market trends and tourist attraction approaches through a shared Facebook group using algorithmic data selection approach.
3. Select and highlight most valuable approaches for adaptation and development of a cohesive nature experience tourism environment through typological mapping and multi criteria data base visualising variety of tourist attraction methods
4. Conduct on site outdoor tours to test and observe nature tourist response on nature tourism destinatons through hiking outdoor tours on selected environments, nature parks, coastlines, wilderness areas and cities
5. Validate hypothesis and gather feedback through practical modelling workshops intentionally designing innovative nature tourist products with experiential qualities.
6. Compare selected expert feedback through conducting in person and distanced interviews with, tourism service providers, influencers, opinion leaders and nature tourism organisation representatives and nature enthusiasts.

Research Methodology: The paper contains authors used methodology to clarify current trends, perceived development and highlight opportunities and challenges in each proposed organizational typology. It is essential to understand a more comprehensive framework, its causality, and inner relations for experiential tourism as an industry to sum up and compare Experiential Nature tourism approaches for localized architectural interventions. The paper consists of a qualitative visual approach structured in a quantifiable multi-factor database on the airtable.com platform. Collected and structured nature tourism destination data then are grouped by 124 classifiers. Several approaches are considered to define a typology of nature involved recreational architecture systemization and coordination for more cohesive further research on planned applications and spatial solutions for Nature Tourism decentralization. In order to achieve the planned result, the author used a 4-stage approach for gathering and analysing information.

A. Selecting data – Selection by algorithm. Source – common interest groups, social media, and news recommendations online
B. Visual comparison – Graphical layout template on Miro.com (pre-visualization technique)
C. Forming database – Defining structure, classification criteria on Airtable.com, comparing distribution by similar grouping fields. observing distribution, quantitative analysis and updating the visual distribution chart.

D. Testing Experiences – Organizing test workshops and on-site visits for selected destinations to validate the gathered data and collect feedback through organizing local experiental workshops in Latvia

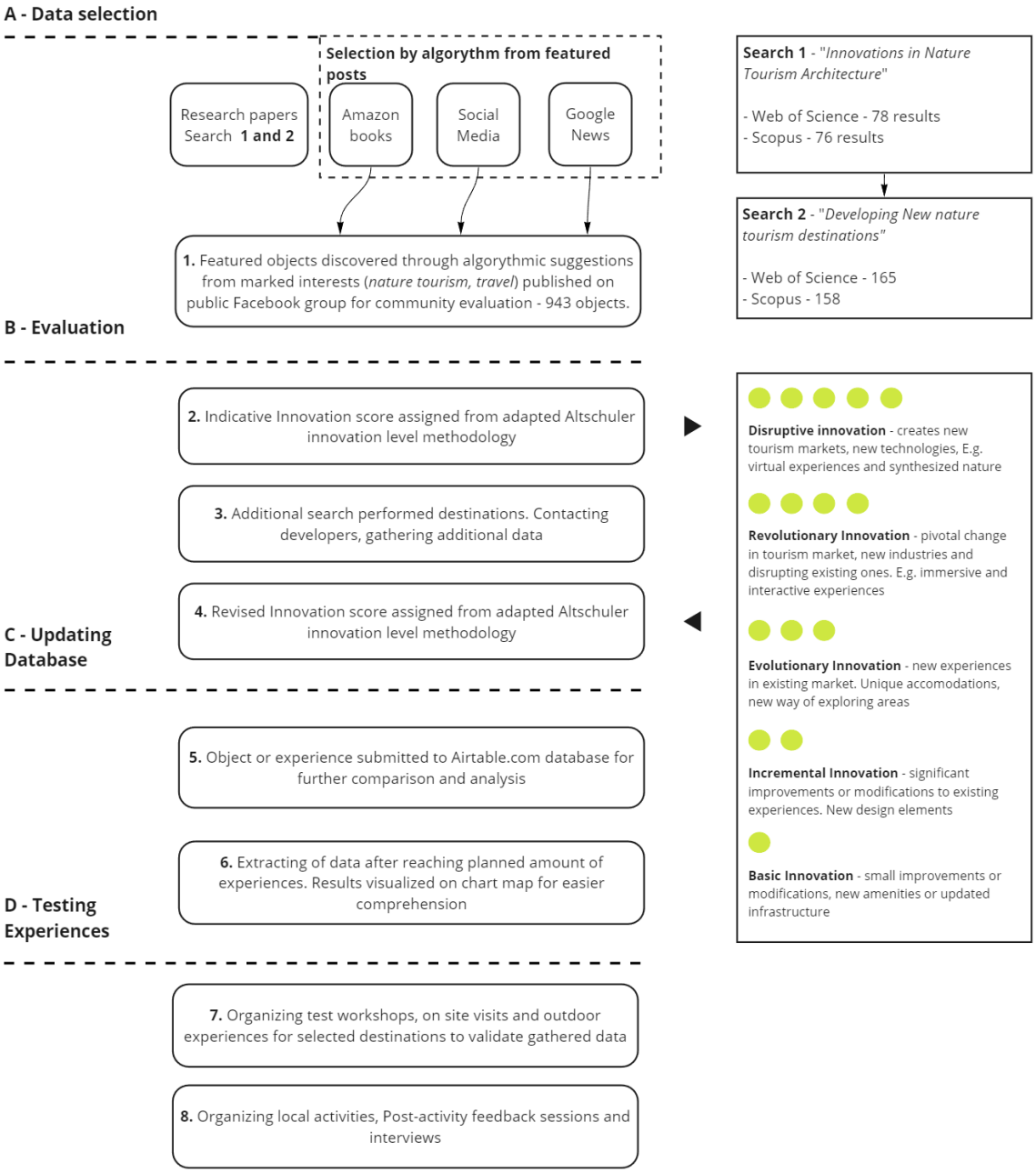

Figure 1. Selecting and validating information for location analysis.

Data selection. In order to see what approaches work best in attracting nature tourists to experiential travel destinations, four primary sources were used, literature analysis from research papers, using keywords mentioned in Fig. 1, Amazon books published since 2000, with keywords "nature tourism architecture" and selection by recommendation algorithm from Google news and social media. In order to avoid intentionally searching for destinations and thus influencing the results, the author selected and actively favourited material related to nature tourist destinations on social media platform timeline, Facebook, Instagram, Google news

platform and Amazon.de, Amazon.co.uk and Amazon.com book marketplaces to receive recommended content from suggestion algorithm, targeted ads and recommended posts on related content and avoid intentional and biased selection of destinations for analysis. On Google.com several intentional searches were performed using same keywords however only results from organic recommendations through the Google News platform on android were used during the one-year study period. Social media platforms were chosen as one of the quickest growing marketing channels with user-generated content for nature tourism destination marketing[33, 59, 74]. Authors personal profile was used for the initial search and combined with data from a new public Facebook group, "Experiential Nature Tourism Architecture", for collecting results from other participating social media users. During the research period of 307 days from 2021.03.09 till 2022.01.08, 261 people joined the group, and 809 unique posts were made. Participants represented 71 locations with users from Latvia, Estonia, Lithuania, Bulgaria, Russia, Finland, China, Italy, USA, Pakistan, Spain, India, Nigeria, Australia, Netherlands, Iceland, Georgia, UK, Bahamas, Afghanistan, France, Denmark, Madagascar, Tanzania, Sweden and Austria. Group members were equally distributed among genders, with the most active age range from 25 – 34 years.

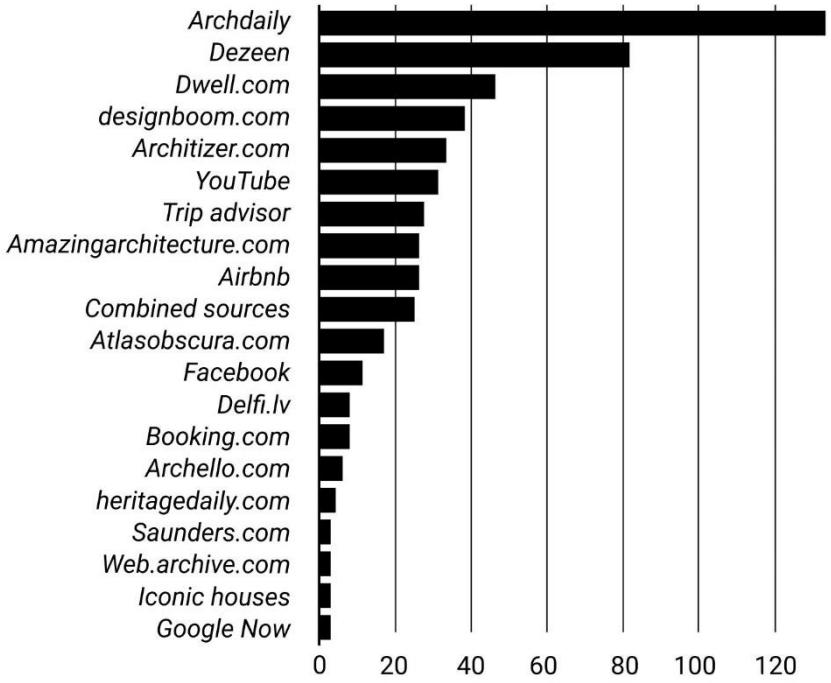

Figure 2. Distribution of represented sources in experiential nature tourism case-study database (Annex 7).

Sources of information. Most selected Nature Tourism destinations came from Archdaily.com, Dezeen, Dwell, YouTube and Amazingarchitecture.com (Fig. 2). In cases where one destination had several sources, the most information-dense one was credited. Although social media platforms like Instagram and Facebook played an essential role in the discovery of destinations, however the linked sources mostly came from established publishers or analysed object home pages after performing an additional search as described in the material selection algorithm (Fig. 1) and the distribution chart (Fig. 2).

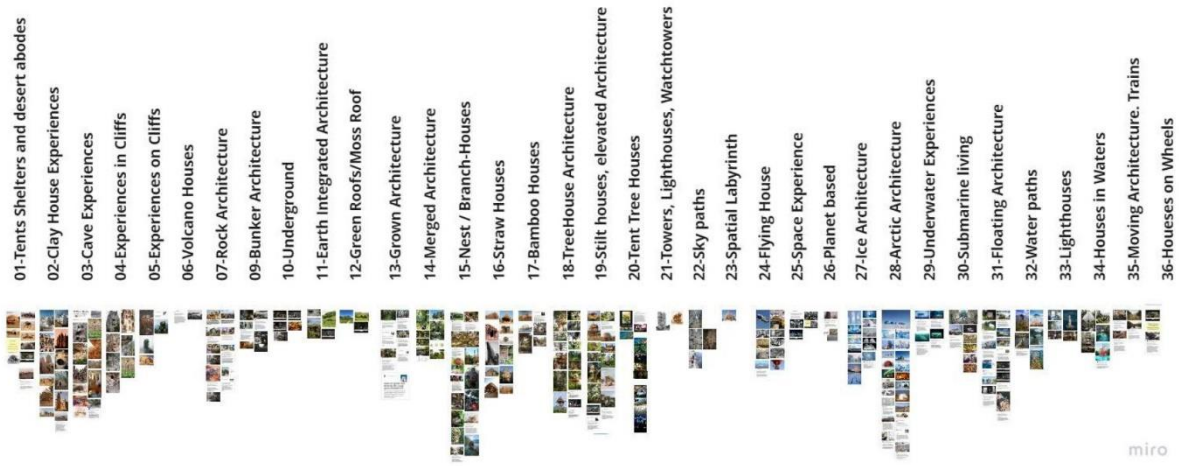

Figure 3. Miro.com visual database prototype for cataloguing Experiential Nature tourism Architecture research material.

Visual comparison. For the second stage of analysis, a visual collaboration board on Miro.com was used, grouping similar Experiential tourism examples from a selection that utilized experiential qualities in their design. In the first stage of inquiry, experiential tourism examples were compared to a list of available biomes, possible relationships with surrounding nature and experiences perceived, thus arriving at primary classification criteria for the nature tourism destination database. Given that the visual analysis was not automated it was inherently limited in its elasticity and adaptability; however, its visual comprehension level was substantial, giving an instant insight into possible object groupings and achieved stratification of analysed data.

Forming database: As several parameters overlapped, e.g. destination, materiality and experiential qualities of the grouped objects, a multi-criteria database was created where classifiers and tags grouped selected destinations. Labels were selected from looking at classifiable information provided on the source material, and additional search was performed where some of the elements were missing. When forming the grouping criteria, single select fields or numerical values were preferred where possible for optimising grouping and further analysis. In cases where it was not applicable, primary, secondary and tertiary qualities were used or in case of keywords, amenities and features, multiple selection criteria option was enabled. (Fig. 4) The database also features several meta criteria that are not directly linked to the nature objects themselves, chronological record of each cell, authors comments and score of the element's degree of completion.

As the author is a non-native English speaker, automated grammar and syntax correction tools like Grammarly, Tilde, Microsoft Word Copilot were employed when formatting the doctoral thesis to improve structure of sentences, clarity, precision, and overall legibility of the text.

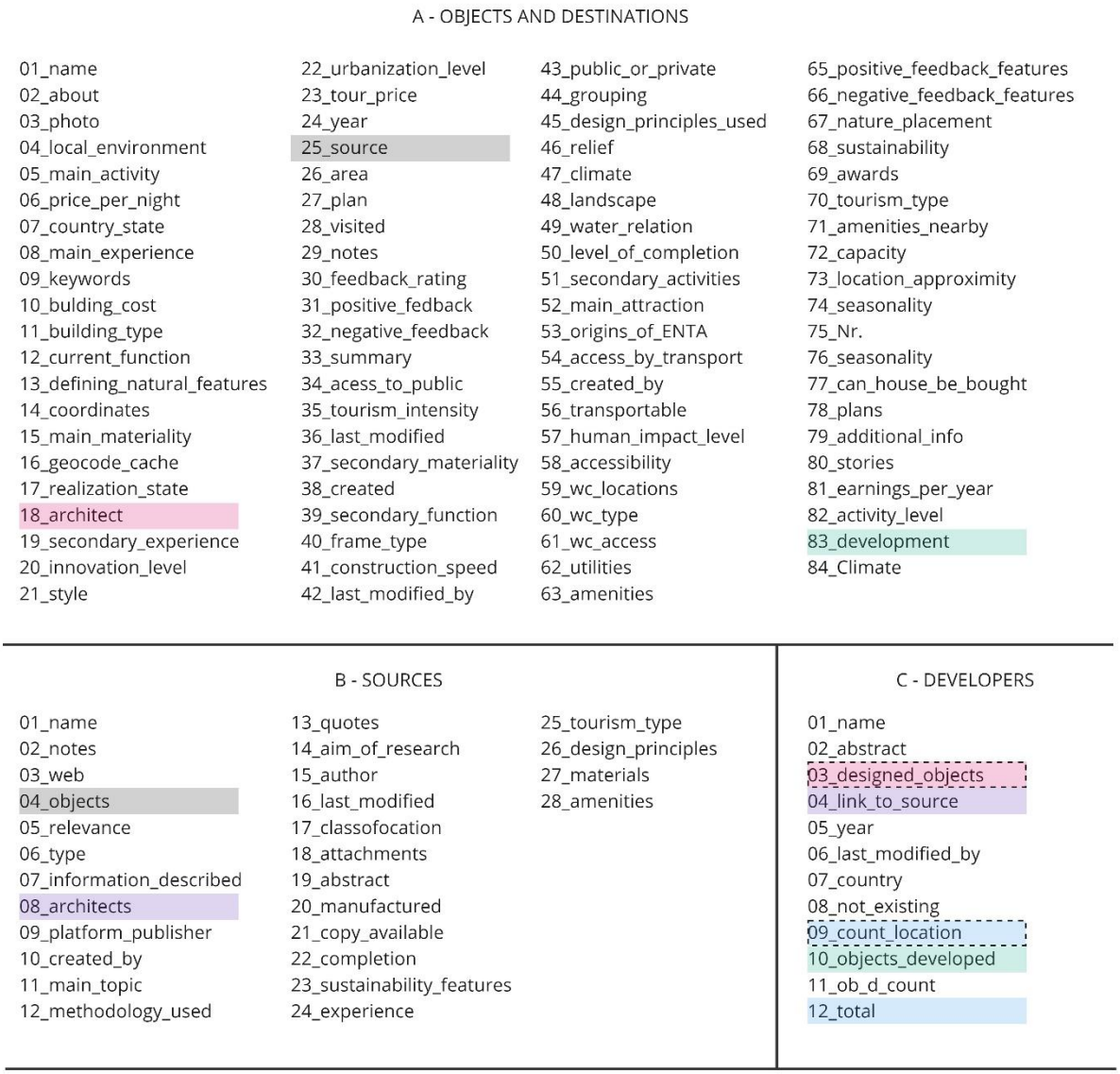

Figure 4. Grouping criteria and labels for Experiential Nature Tourism Architecture data base.

Terminology:

Experiential Architecture - In the scope of this work, experience is meant as an active or passive activity performed by a participant. This interpretation is based on the premise that the design of sustainable tourism destinations can play a critical role in attracting tourists and providing them with unique, authentic experiences in the natural environment. By focusing on the creation of new, human-made destinations that are designed to provide these types of experiences, it is possible to address the issue of over tourism and provide sustainable solutions for the tourism industry. This approach is distinct from a more traditional architectural interpretation of experience, which primarily focuses on the aesthetic qualities of building interiors, proportions and the way in which people interact with these spaces.

Architectural intervention - In the field of architecture, the term "architectural intervention" traditionally refers to the process of renovating or reconstructing existing structures. However, in the context of experiential nature tourism, the term is used to describe the creation of new built environments that enhance visitors' experiences of nature. In this context, architectural intervention is understood as a way of clarifying the relationship between the built environment and nature, and of creating spaces that encourage people to engage with

nature in meaningful ways. This understanding of architectural intervention differs from the traditional understanding of the term, as it focuses on augmenting rather than altering existing structures.

Nature tourism and Nature-based tourism – Traditionally nature tourism focuses on traveling to natural environments, primarily for the enjoyment of natural beauty and recreational activities. Typical activities include hiking, bird watching, landscape photography, and enjoying natural parks and reserves. Nature-based tourism is about engaging with and contributing to the conservation and sustainability of natural environments. In this work author has expanded the traditional use of terms nature and nature-based tourism in combination with active tourism and experiential tourism elements not limited to authentic destinations but rather focusing on the perceived experience of the target audience thus broadening the scope of the term. E.g. in case of themed entertainment, a tourist in mostly outdoors based Avatar Park at Disney's Animal Kingdom in Orlando – the world of Avatar themed area inspired by James Cameron film Avatar featuring alien world and bioluminescent rainforests with film's flora and fauna here it would be perceived as part of experiential nature tourism using fantasy attractor, while providing visitors with nature-based experience.

Scientific Novelty of Research

The scientific novelty of this work lies in its comparative analysis of experiential nature tourism architecture as an intentional solution for dealing with over tourism and crowding. This approach is distinct from previous research, which has primarily focused on the dangers of over tourism and the need for infrastructure-based solutions to address this issue [7, 52, 72, 91, 109, 115]. By contrast, this work takes a more proactive approach, exploring the potential of architectural interventions to create new, sustainable tourism destinations that can accommodate the growing demand for nature-based experiences without harming the natural environment providing a unique perspective on the role of architecture in addressing the challenges of over tourism and crowding in the tourism industry.

Practical Significance of the Work

The practical significance of this work lies in its potential to encourage a more planned approach to reducing the harmful over-reliance on authentic natural attractions as the main tourist attractor. As natural resources are inherently limited and can be easily damaged beyond repair, it is important to find sustainable solutions for the tourism industry. By exploring the potential of architectural interventions to create new, human-made destinations in nature, this work offers a practical approach to addressing the challenges of over tourism and crowding. By providing alternatives to the traditional reliance on natural attractions. This approach can help to preserve the natural beauty and integrity of these areas for future generations, while also providing tourists with unique and authentic experiences in nature.

Approbation of the results

The approbation of the results included meetings with several planning bodies and municipalities in Latvia, Estonia, UK, Norway and Iceland. These meetings provided opportunities to directly engage with key stakeholders involved in the development and management of nature tourism destinations. The research findings were presented, facilitating discussions, sharing insights, and exploring opportunities for collaboration. The meetings fostered a dialogue on implementing the identified design elements and strategies, as well as exploring potential partnerships for sustainable tourism development. In order to further explore the application of the research results, several workshops, further described in Annex 4 were held with local municipalities. These workshops aimed to demonstrate how the findings

could be implemented in their regional development programs. Representatives from the municipalities actively participated in these workshops, engaging in an introductory presentation and an ideation workshop that utilized the tools and methodologies discovered and pioneered during the research period. The workshops began with an introductory presentation, during which the research team presented the key findings and insights from the study. This presentation provided an overview of the evolution of nature tourism architecture and highlighted the potential benefits and opportunities for the municipalities to enhance their regional development through the implementation of innovative architectural designs and experiential tourism offerings.

Following the presentation, an ideation workshop was conducted, where municipality representatives usually consisting of representatives from local government, business, civil and education sectors actively participated. Workshops utilized the tools and methodologies discovered during the research to facilitate a collaborative brainstorming session. Participants were encouraged to think creatively and explore various ideas and possibilities for integrating nature tourism architecture into their regional development plans. The workshop aimed to generate practical and feasible solutions that aligned with the unique characteristics and goals of each municipality. Through these workshops, the research findings were translated into actionable insights and practical guidance for the municipalities. By actively involving municipality representatives in the process, the workshops fostered a feeling of ownership and empowerment, enabling them to directly contribute to the application of the research results in regional development programs. Ideation workshops provided an interactive platform for knowledge exchange, enabling municipality representatives to learn from the research team and from one another. This collaborative approach facilitated the transfer of expertise and best practices, creating a supportive environment for the municipalities to explore and adopt innovative approaches to nature tourism architecture in their regional planning.

The author took part in conferences focused on tourism, architecture, and sustainable development, presenting research findings to an audience that included professionals, practitioners, and policymakers. These presentations offered a space to share insights and discuss the practical implications of the research, leading to meaningful exchanges on its relevance in real-world contexts. Participation also opened up opportunities for networking, resulting in new professional connections and laying the groundwork for future collaborations in both research and applied projects. In several cases, these engagements led to on-site workshops with municipal representatives, supporting the transfer of knowledge from academic settings to practice.

Collaboration on two Interreg projects further expanded the approbation of the research results. These projects focused on exploring the export potential of nature tourism products to UK market. By participating in these initiatives, the authors team contributed their expertise in nature tourism architecture and collaborated with industry stakeholders to develop and promote innovative tourism products. The Interreg projects allowed for the exploration of market demands, the development of sustainable business models, and the expansion of the reach of nature tourism destinations to attract international visitors. The research findings were actively applied in real-world contexts, helping to bridge the gap between theory and practice in nature tourism architecture. Collaboration with planning bodies, municipalities, conferences, and relevant Interreg projects opened pathways for influencing policy, shaping industry practices, and supporting economic growth through the export of nature-based tourism products. These activities not only extended the impact of the research beyond academia but also contributed to the development of more practical and responsive approaches within the nature tourism sector.

Publications

Published:

Babris, M., Bratuškins, U., and Treija, S., (2018)**.** *Non-formal education in architecture: Latvian experience*. Journal of Architecture and Urbanism, 42(1), pp. 46–51.

Babris, M., & Bratuškins, U. (2019). Practical Modelling in Treehouse Development. AVP 15 (1) 106-112.

Babris, M., Bratuškins, U., Tihanova, A., & Hartmans, R. (2023). Organisational Typologies for Experiential Nature Tourism Architecture. Architecture and Urban Planning, 19 (1) 164 – 174.

Miķelsone, E., Babris, M., Piere-Segers J., Beitāne, A., Babre A.M. (2024). Web-based idea management and Quadruple Helix networking of creative industry cohorts for COVID-19. Business: Theory and Practice, 2024, 25 (1), pp. 362-376.

Babris, M., Johnston, J., & Derksen, B. (2024). Engaging Users in Creating the Next Library Space: Best Ideas in Innovative and Experimental Design. Das Offene Bibliotheksjournal.

Submitted publications:

Miķelsone, E., Babris, M., Babre, A.M., Saļņikova, A. (2025). Artificial Intelligence vs. Human Creativity from an Idea Management Perspective. Springer Nature Publishing.

Reports at conferences

Babris M., Bratuškins, U. Balancing Nature and Tourism: Innovative Architectural and Planning Approaches for Mitigating Rising Overtourism, RTU 64th International scientific conference. Section Architecture and Urban Planning, Riga

Babris, M., Bratuškins U. Organisational Typology for Experiential Nature Tourism Architecture, 2nd Baltic Conference of Young Researchers in Architecture, Landscape Architecture and Urbanism, 2021.10.04., Online

Babris, M., Bratuškins, U. Innovative Approaches in Developing New Experiential Nature Tourism Destinations. 3rd Baltic Conference of Young Researchers in Architecture, Landscape Architecture, Urbanism and Civil Engineering Doctoral students conference 2022.11.24., Kaunas

Babris, M. Dabas pieredžu tūrisma arhitektūra – kā radīt jaunus un apmeklētus galamērķus, Latvijas Dabas tūrisma konference, 2022.09.14., Ogre

Babris, M. Collaboration and Innovation in Nature Tourism development, Latvian Tourism Forum 2022, 2022.12.08., Sigulda

Public Approbation and Communication of research results

Date	Name	Description	Location
2021-09-02	Iceland 1800 km long distance hiking trail expedition report	Sharing experiences from expedition around the coastline of Iceland from Westfjords to South of Iceland.	Rīga, Latvia
2021-11-09	Moderator at Pan-Baltic Hiking conference	Coordination and moderation of online event on Baltic long distance hiking projects	Online
2022-03-09	Nature tourist expert training and development	Coordinating and moderating six public lecture series and workshop combining best experiences from Finland, Czech Republic, Estonia, and Latvia	Online and Straupe, Latvia
2022-08-20	Latvian Annual Nature Tourist Assembly	Long distance trail experiences public lecture and panel discussion	Ērgļi, Latvia
2022-12-08	Latvia Tourism Forum	Presentation Innovative Approaches to Interdisciplinary Tourism Product Development	Sigulda, Latvia
2023-02-17	Jēkabpils regional tourism creation workshop	Moderation of workshop with local residents	Jēkabpils, Latvia
2023-03-17	RTU Demo Day and CoLAB presentation	Experiential Nature Tourism Data Base application for developing new nature tourism destinations	Rīga, Latvia
2023-04-17	Aizkraukle tourism industry meeting and creative workshop	Tourism industry meeting	Aizkraukle, Latvia
2023-04-25	Public lecture on Innovations in Small Scale Nature Tourism Architecture and Modular Housing	Lecture on tourism and modular housing innovations	Rīga, Latvia
2023-05-08	Role of hackathons and idea competitions in developing new innovative products	Interview on lsm.lv Latvijas Radio 3	Rīga, Latvia
2023-05-10	Interreg Central Baltic region NAT-TOUR-EXPO project partner meeting	Experience sharing on nature tourism monetisation models, cross-border collaboration with Estonian nature tourism providers	Prangli, Estonia
2023-05-25	Biomimicry as tool for nature inspired innovations in architecture and design	Interview on radio SWH	Rīga, Latvia

2023-05-26	Modular House challenge	Small scale architecture in nature with Riga Wood (Latvijas Finieris) and Latvian State Forests	Jelgava, Latvia
2023-05-31	Ventspils Tourism Symposium	Latvian Nature Tourism Association offer for Baltic Nature tourism new product development programmes and methodologies 2023 = 2029	Ventspils, Latvia
2023-06-01	Prototyping Experience stories on World Design Factory Day	Sharing experiences on developing new nature tourism products through co-innovation methods	Online
2023-06-19	Interview and presentation on Rīta Panorāma lsm.lv	Prototyping innovative connector elements for outdoor shelters and modular adventure-oriented spatial grid structures	Rīga, Latvia
2023-12-24	Nature tourism entrepreneur seminar within Latvian Nature Tourism Association general assembly	Innovative product development involving nature tourism service providers	Zentene, Latvia
2024-02-16	Jēkabpils workshop with service providers and tour operators	Workshop with tourism service providers	Jēkabpils, Latvia
2024-02-20	The Nordic Marketplace	Representing Baltic Nature Tourism sector with Baltic country holidays	Copenhagen, Denmark
2024-03-13	Gulbene Municipality workshop	Tourism workshop with local residents and tourism service providers	Gulbene, Latvia
2024-04-18	Trade event at Embassy of the Rebuplic of Latvia to the United Kingdom of Great Britain and Northern Ireland	Presenting nature tourism offers available in Latvia and Estonia	London, United Kingdom
2024-04-30	Allaži Municipality workshop	Tourism workshop with local residents and nature tourism providers	Allaži, Latvia
2024-05-10	Jelgava Municipality workshop	Tourism workshop with local residents and nature tourism providers	Jelgava, Latvia
2024-06-12	Limbaži Municipality workshop	Tourism workshop with local residents and nature tourism providers	Limbaži, Latvia
2025-03-06	Tourism Industry Entrepreneurs Meeting	Tourism workshop with nature tourism providers	Sigulda, Latvia

1. TRANSFORMATION OF NATURE TOURISM ARCHITECTURE

In the not-so-distant past of nature tourism, visitors would typically observe nature from a distance, often from the comfort of a tour bus or a viewing platform. However, as the industry has developed, there has been an increasing emphasis on creating opportunities for visitors to actively engage with the natural environment through activities like hiking, bird watching, wildlife photography and other exploration-oriented experiences in nature [4, 128]. This shift has been driven in part by changes in consumer preferences, as more and more people seek out immersive and authentic travel experiences that allow them to connect with nature on a deeper level. The rise of experiential nature tourism has also been facilitated by advances in technology and transportation, which have made it easier for people to access remote and wilderness areas [1, 64, 73].

1.1. Evolution of nature tourism. Relationship between observation and participation

As the demand for nature-based experiences continues to grow, the design and development of nature tourism destinations is increasingly focused on creating immersive and engaging experiences for visitors. Overall trend is oriented towards flexible destinations that can adapt to several weather conditions and attract clients through a varied programme of nature-involved activities and events. Nature in itself not always can attract tourists and when it does without sufficient infrastructure it's not always for the best of results as highlighted by witnessed events of crowding and over tourism in popular destinations like Iceland, Norway and Italy [53, 95, 113]. A growing subcategory of nature tourism – adventure and experiential nature tourism tries to cope with this phenomenon by providing travellers with authentic nature-based experiences that are decentralised and sustainable, support local communities and are mindful of their carbon footprint.

Adventure Tourism, a form of nature tourism that typically involves more interactive and participatory experiences, like hiking, climbing, rafting, and other outdoor activities. In recent years, adventure tourism has experienced significant growth and development as a subcategory of nature tourism, with more and more travellers seeking out immersive and authentic experiences in the great outdoors. One of the key drivers of the growth of adventure tourism has been the increasing demand for unique and authentic experiences. As travellers become savvier and more selective, they are seeking out destinations and activities that offer a sense of adventure and challenge, and that allow them to truly connect with the natural environment

Figure 5). This trend has been fuelled by the rise of social media and online travel platforms, which have made it easier for travellers to discover and book adventure tourism experiences and have also helped to promote and market these experiences to a wider audience. Another factor that has contributed to the growth of adventure tourism is the increasing focus on sustainability and conservation in nature tourism. As travellers become more aware of the environmental impacts of tourism, they are seeking out destinations and activities that are mindful of their carbon footprint and that support local communities and ecosystems. Adventure tourism, with its emphasis on outdoor activities and immersive experiences, can provide a more sustainable and authentic alternative to more traditional forms of tourism.

Figure 5. South of France Coastal Trail, France, in 2024 [Photo by Author, Annex 2].

In hand with growth of interest in nature tourism, over tourism has become a pressing issue in development of Nature tourism destinations. To cope with a growing number of nature tourism several approaches have been proposed. Over-tourism is a phenomenon that has become increasingly prevalent in nature tourism destinations around the world. It refers to the situation in which a destination receives more tourists than it can sustainably accommodate, resulting in negative impacts on the environment, local communities, and the overall visitor experience. Over tourism in nature can have a range of negative impacts on the environment. For example, the increased traffic and waste associated with over tourism can lead to pollution and habitat destruction. The increased demand for natural resources, water and fuel, can also lead to resource depletion and environmental degradation [23, 42]. The negative impact of over tourism is disproportionally scaled towards significantly hurting local communities and so-called authentic experiences. The influx of tourists can lead to an increase in the cost of living, making it difficult for residents to afford housing and other necessities. The increased demand for accommodation and transportation, can also lead to the displacement of local businesses and communities. The negative impacts of over tourism on the visitor experience can also be significant. The overcrowding and congestion associated with over tourism can lead to a decline in the quality of the visitor experience, as tourists are unable to fully enjoy the natural beauty and attractions of the destination. To address the issue of over tourism in nature, a range of strategies can be adopted. These can include several measures like the implementation of sustainable tourism management plans, the development of alternative destinations, and the promotion of responsible tourism practices. Over tourism in nature is a complex and challenging issue that requires a comprehensive and coordinated response from stakeholders in the tourism industry. Through the adoption of effective strategies and the promotion of sustainable tourism practices, it is possible to mitigate the negative impacts of over tourism and enhance the visitor experience in nature tourism destinations [35, 66, 112].

Currently established practices in coping with growing tourist interest, commonly known as visitor management techniques vary from timed entry and reservation systems, zoning – designating specific areas for tourism activities, capacity limits, setting maximum visitor capacities for certain areas to prevent overcrowding and preserve natural resources while protecting sensitive zones to reduce environmental impact. Including not marking destinations in map, limited access policies and local regulations. All of these are frequently in conflict with the countries aim of attracting more nature tourists [76, 91, 131]. The aim of this work is to highlight two emerging radically different ways of coping with over tourism in nature: Enjoying

responsible over tourism and increasing number and variety of nature tourism destinations through application of experiential qualities to newly developed nature tourism destinations. In some destinations the over tourism itself is being provided as an experience especially in more developed countries like south Korea and Japan where local communities show how through balanced application of infrastructure in nature people can enjoy the sense of community and shared joy of being together outdoors (Figure 6). It is in large parts thanks to the role of lifelong learning and training to appreciate nature together in growing up in hiking clubs and local nature tourism societies [35, 72, 82, 112].

Figure 6. Michinoku Coastal Trail hiking community house, Japan, in 2022 [Photo by Andra Marta Babre, Annex 2].

Impact of Covid-19 has highlighted the need for decentralised and planned approach to nature tourism development. Starting Early 2010s a new trend of decentralized approach of selling experiences instead of destinations become ever more present. By creating new nature tourism destinations Tourist flows could be better organized and decentralised [48, 75, 92, 98]. The transformation of nature tourism architecture has paralleled the evolution of visitor management techniques, shifting from unregulated development to sophisticated, environmentally conscious designs that prioritize sustainability. Each category within this transformation, early practices, regulations, community involvement, sustainable models, and technological advancements has influenced the architectural approach to nature tourism.

In the early days of nature tourism, architecture was largely utilitarian, with little consideration given to the environmental impact of development. This often resulted in the construction of large-scale, invasive structures that did not account for the fragile ecosystems they were built within. The lack of regulatory frameworks allowed for tourism facilities, resorts and visitor centers, often built with a focus on maximizing visitor capacity rather than minimizing environmental disturbance [129]. As relatively little attention was paid to the natural environment, buildings frequently obstructed wildlife corridors, altered landscapes, and contributed to pollution through unsustainable materials and waste management. This phase led to significant degradation of natural landscapes, necessitating a shift in both visitor management and architectural design approaches to mitigate long-term damage [55, 72, 119].

As awareness of the negative effects of unregulated tourism grew, governments and environmental organizations began implementing regulations to protect natural environments. This new regulatory focus influenced nature tourism architecture in several ways [30, 41, 52]. Architects were required to design facilities within specific zones, limiting construction in

sensitive areas. For example, the use of boardwalks and designated pathways to guide visitor movement helped prevent soil erosion and habitat destruction [11, 56, 139]. Regulations introduced incentives for sustainable construction, requiring the use of local and renewable materials. Visitor centres like those in national parks started using local timber and stone to blend with the environment and reduce transport emissions [43, 103, 136]. Many natural reserves introduced caps on the size of new developments to ensure they did not overwhelm the landscape. This encouraged minimalist design principles, where smaller-scale, unobtrusive structures became the norm [94, 107, 132]. Involving local communities in the planning and development of tourism infrastructure led to architecture that's sustainable, culturally appropriate and reflective of local traditions. This approach, seen in projects like Ecolodge Lapa Rios in Costa Rica, has resulted in several key architectural transformations [51, 58]. Architects started incorporating local architectural styles and materials, respecting indigenous practices and ensuring that buildings harmonized with the cultural landscape [46, 111, 120]. The emphasis on sustainability further led to the creation of off-grid facilities powered by renewable energy with structures made from bamboo, recycled wood, or thatched roofs using natural materials from the region [78, 103, 112]. Nature tourism architecture began to include elements that directly benefit local communities, multi-purpose facilities that serve both tourists and locals, or community-led construction initiatives where locals are involved in the building process, as seen in sustainable tourism models like the Fogo Island Inn [19, 91, 93].

The development of sustainable tourism models like ecotourism, brought about a new era of environmentally conscious architectural design, where the goal is to reduce the ecological footprint of tourism infrastructure. This shift introduced several architectural innovations. Architects like Antony Gibbon pioneered designs that are almost invisible within their surroundings, treehouse accommodations and camouflaged lodges, where the use of natural materials and organic forms minimize the visual impact on the environment. Examples include Tree hotel (Figure 7) in Sweden and Juvet Landscape Hotel in Norway, which integrate seamlessly into forests and rural landscapes [12, 15, 79].

Figure 7. Treehotel in Swedish Lapland, Sweden [Photo by Tham & Videgård Arkitekter, Annex 7].

The construction of elevated structures (e.g., treehouses, stilt buildings) became more common to minimize ground disturbance and protect the underlying vegetation and wildlife. These designs ensure that the land below remains undisturbed, preserving delicate ecosystems [5]. Building materials in sustainable tourism architecture have shifted to recycled, reclaimed,

and biodegradable options. Examples include the use of hempcrete, straw bales, or recycled plastic in construction, as seen in projects like Practice Architecture's eco-lodges from Annex 7. Sustainable buildings are often designed with passive heating and cooling systems, green roofs, and natural ventilation to minimize energy use. Geothermal energy and solar panels are common in eco-lodges like the Fogo Island Inn, reducing reliance on non-renewable resources [22].

The integration of modern technology has revolutionized both the management of visitors and the design of nature tourism architecture, allowing for more adaptive, real-time responses to environmental conditions [69, 77]. Some modern nature tourism facilities are equipped with real-time monitoring systems that adjust energy use based on occupancy and environmental factors, enhancing sustainability. Sensors can detect temperature, humidity, and even foot traffic, allowing for dynamic management of energy and water consumption. The rise of virtual experiences and online booking systems has reduced the need for large, physical visitor centers, allowing for smaller, more discreet facilities that still serve the needs of tourists. Visitor apps provide educational content and self-guided tour information, reducing the demand for on-site infrastructure [72, 119]. Advances in renewable energy technology and water recycling systems have allowed for fully autonomous tourism facilities. These buildings operate off the grid, drastically reducing their environmental impact [11, 28]. As means of reducing physical strain on ecosystems, some destinations have incorporated virtual reality tours, allowing visitors to experience sensitive environments without physically being there up to some extent reducing the need for permanent structures in fragile ecosystems [95, 110].

Transformation of nature tourism architecture highlights that limiting human impact through reduced visitation and regulation is not the only solution to preserving natural environments. While managing visitor numbers and restricting access to sensitive areas remains important, equal emphasis should be placed on designing new nature tourism destinations that actively contribute to environmental conservation through thoughtful architectural interventions. Instead of merely controlling tourism, innovative architectural design can enhance the relationship between visitors and nature. Sustainable building practices, like those seen in the Fogo Island Inn, Tree hotel, and Juvet Landscape Hotel, show that architecture can be a tool for fostering environmental awareness while offering enriching experiences. By blending structures into their surroundings, utilizing eco-friendly materials, and incorporating renewable energy, these designs can reduce the ecological footprint while still providing immersive nature experiences (Annex 4, 7). Architectural interventions that integrate nature, culture, and sustainability minimize environmental impact and inspire visitors to engage more deeply with conservation efforts. This approach reframes tourism as means to actively protect and regenerate natural environments rather than a force to be curtailed emphasising a need for innovative design solutions that balance accessibility with ecological responsibility, ensuring that nature tourism destinations are sustainable, educational, and enriching for all.

1.2. Integration of natural elements and landforms in nature tourism destinations

The role of architecture in nature tourism has evolved over time from enabling access to existing destinations and providing infrastructure and visitor facilities, to becoming a key contributor in the decentralization of nature tourism. In the past, architecture in nature tourism was primarily focused on providing the necessary infrastructure and facilities to support visitors at popular natural attractions, visitor centres, parking areas, and trails. However, as the nature tourism industry has grown and become more diverse, architecture has played an increasingly important role in the creation of new destinations in nature, particularly in areas that do not already have popular natural attractions. This has involved designing and building structures that blend seamlessly with the surrounding landscape and enhance visitors' experiences of the natural environment making it more accessible to a wider range of people. [16, 62, 128]. The aim of this chapter is to primarily serve as an introductory overview of ways how natural elements can be successfully integrated in architectural application for nature tourism. This topic is further explored in chapter 2.2. on intentionally shaping immersive environments in nature tourism architecture. There are several ways in which nature can interact with architecture. Some of the most common ways include:

1. **Incorporation of natural materials** into the design of buildings and structures including small architecture forms and landscaping solutions[97].
2. **Use of biophilic design principles**. Biophilic design is a concept that focuses on the integration of nature into the built environment. It involves the use of natural elements, plants, water, and sunlight. [8].
3. I**ntegration of green spaces and nature** into the design of buildings and structures. Green spaces, parks, gardens, and green roofs, can provide a space for nature to thrive within the built environment.
4. **Use of natural light and ventilation** in the design of buildings and structures. Natural light and ventilation can provide a connection to the outdoors and enhance the overall experience of being in a natural environment.

During the research period, 83 destinations were identified from Annex 7 where nature is either completely absent or minimally present, as the focus remains on artificial constructs. These projects are typically found in highly urbanized settings where natural elements play little or no role in the design while still in marketing being seen as a nature tourism related destination. For example, the Library of Delft University of Technology features an artificial landscape integrated into its roof design, creating a striking contrast between its modern, engineered structure and the surrounding urban campus. Similarly, Streetmekka Viborg transforms a former industrial warehouse into a vibrant urban sports and culture hub, offering a fully engineered environment for recreation and creativity, with minimal integration of natural elements into its structure. Both examples prioritize human-made experiences over natural immersion, focusing on nature as a distant object of observation rather than core attractor for potential nature tourists (Figure 8).

Figure 8. Streetmekka Viborg, Denmark [Photo by EFFEKT, Annex 7].

During the research period, 30 cases were found with primary focus on observing Nature. Projects in this category facilitate visual engagement with nature, offering expansive views without direct interaction or environmental disruption. The Drop Eco-hotel provides panoramic vistas from remote locations while maintaining a minimal ecological footprint. Similarly, the Cappadocian Hot Air Balloon Experience allows visitors to observe geological formations from an aerial perspective, ensuring immersion without intrusion. These designs enhance appreciation of nature through passive observation rather than physical alteration (Figure 9).


Figure 9. Cappadocian Hot Air Baloon Experiencem, Turkey [Photo by Emrah Gurel/AP Photo, Annex 7].

As a largest group by far, destinations and objects Adjacent to Nature**,** featuring 638 individual cases from the data set in Annex 7. In this approach, structures are placed close to natural features but maintain a clear boundary between the built environment and nature. One prominent example is The Bands cabins in Vestvågøy in Norway, where tourists stay in traditional fishing cabins along the fjords. The cabins are positioned at the edge of the landscape, allowing guests to experience the natural beauty of the region without direct immersion into it. A similar concept is applied at Juvet Landscape Hotel in Norway, where glass-fronted rooms sit adjacent to a river and forest, providing panoramic views while keeping the structure separate from the natural surroundings. These examples emphasize proximity to nature, allowing tourists to appreciate the environment while remaining within a defined human space (Figure 10).

Figure 10. The Bands, AHO Oslo School of Architecture, Norway [Photo by Jonas Aarre Sommarset, Annex 7].

Going further in scale of nature and architecture synthesis, 58 cases were identified from Annex 7 with direct integration in surrounding nature showcasing projects that are fully integrated into their natural surroundings, blending the built environment seamlessly with nature. The Nothofagus Hotel in Chile Huilo Huilo exemplifies this approach, where the hotel is built within a forest using organic materials and forms that mimic the surrounding trees. Another example is the The Bird`s Nest in Sweden, where individual rooms are suspended in the treetops, designed to minimize their impact on the forest floor while offering guests an immersive experience. Both projects demonstrate a commitment to creating structures that coexist with their environments, minimizing disruption and fostering a sense of connection between the built and natural worlds (Figure 11).

Figure 11. The Bird`s Nest, Bertil Harström, Sweden [Photo by Bertil Harström, Annex 7].

Continuing along the scale of nature involvement, 30 cases included in Annex 7 were identified with architectural approach that prioritizes the use of natural materials, facilitating a further uninterrupted integration between built structures and their surrounding landscapes. The Choquequilla Inca Huaca in Peru exemplifies this principle, as its design is directly carved into a cave, utilizing the existing rock formations as both structural components and cultural symbols. Similarly, The Dormouse Nest demonstrates a deep engagement with the natural environment through its construction with organic materials, fostering an immersive sensory experience while maintaining ecological sensitivity. These examples highlight the importance of using local, natural materials to create structures that reflect and respect their environments

however as seen with fully integrated destinations, this can result in reduced comfort and amenities available for the visitors (Figure 12).

Figure 12. Choquequilla Inca Huaca, Peru [Photo by Greg Willis, Annex 7].

Among other identified approaches 37 distinct cases were selected from Annex 7 with buildings that host natural elements within their design belong to this category. Camaya Butterfly in Bali, Indonesia, uses bamboo as the primary construction material, with plants and trees integrated into the structure itself, creating a living ecosystem within the building. A similar approach is seen in One Central Park in Sydney, Australia, where vertical gardens cover the façade of the building, allowing vegetation to thrive within an urban context. These projects actively incorporate living nature into their design, making the built environment a host for biodiversity and natural elements (Figure 13).

Figure 13. Camaya Bali Butterfly, Bali [Photo by Camaya Bali, Annex 7].

In 77 cases from Annex 7 where several elements from previous approaches combined strategically integrating architecture within its natural context, fostering a reciprocal relationship between built structures and the environment. Kellogg Joshua Tree House exemplifies this principle through its organic forms and material selection, which align well with the desert topography. Likewise, Dusun Bambu employs vernacular bamboo construction techniques alongside contemporary design strategies, creating an ecologically responsive ecotourism destination. These examples illustrate how architectural interventions can mediate between modern innovation and environmental preservation, ensuring both contextual sensitivity and ecological sustainability (Figure 14).

Figure 14. Kellogg Joshua Tree House, Kendrick Bangs Kellogg, The United States [Photo by Lance Gerber, Annex 7].

As the subject of this research is architectural and infrastructure solutions, very few destinations were selected where mostly unaltered nature is the main tourist attractor (4 cases). This category focuses on preserving nature with minimal or no built structures. The Galápagos National Park in Ecuador is a prime example, where tourists experience the pristine environment with minimal infrastructure, ensuring that the natural ecosystem remains undisturbed. Another example is Torres del Paine National Park in Chile, where camping and trekking are the primary modes of accommodation, with limited human intervention in the landscape. These areas emphasize the primacy of the natural environment, allowing tourists to experience nature in its purest form without the interference of architecture (Figure 15).

Figure 15. Torres del Paine National Park in Chile [Wikimedia Commons, Annex 7].

Desert landscapes, dry, arid regions that are known for their unique plant and animal life and offer visitors the chance to experience the natural beauty of the desert. These landscapes may be impacted by human development, mining and other resource extraction operations, but are generally less impacted compared to other landscapes. integrating landforms into architecture involves designing structures that respond to the harsh climate and unique topography, often by blending with the arid environment and utilizing local materials. For example, desert architects like Rick Joy and Diller Scofidio + Renfro often design structures that emphasize thermal mass, use natural ventilation, and minimize water usage to create sustainable, climate-resilient buildings. By incorporating natural elements like sand dunes, rock formations, or canyon features, architects can ensure that their projects are both visually and environmentally harmonious with the surrounding desert landscape (Figure 16).

Figure 16. Ventana House, Ricky Joy, The United States [Photo by Bill Timmerman, Annex 7].

Mountain landscapes, mountain ranges, ski resorts, and other high-altitude destinations that offer visitors a chance to experience the natural beauty of the mountains. These landscapes may be impacted by human development, ski resorts and mountain towns, but are generally less impacted by infrastructure and built environment. Architects integrate landforms by designing structures that complement the natural topography and enhance the rugged beauty of the mountains. Architects like Peter Zumthor and Shigeru Ban are known for creating mountain retreats and resorts that utilize sloped roofs, natural materials, stone and wood, and large windows that capture panoramic views. These designs often follow the contours of the land, blending into the rocky, elevated terrain. By working with the steep inclines, architects can create structures that are both functional and aesthetically attuned to the dramatic mountain environment, while also considering factors like snow load and seismic activity [38] (Figure 17).

Figure 17. Zenbo seinei, Shigeru Ban, Japan [Photo by Shigeru ban architects, Annex 7].

Forest landscapes include forests, woodlands, and other areas that are rich in vegetation and provide visitors with the opportunity to experience the natural beauty of the forest. These landscapes may be impacted by human development, logging and forestry operations, or by the presence of recreational facilities, camping grounds but are generally less impacted compared to other landscapes. integrate landforms by designing structures that harmonize with the dense vegetation and undulating terrain of wooded areas. Alvar Aalto and Henning Larsen have designed buildings that incorporate natural materials like timber and stone to reflect the surrounding environment, creating a sense of unity with the forest. These structures often follow the contours of the forest floor, with elevated platforms or stilts to minimize impact on the ecosystem. Large windows and open layouts are common, allowing natural light to penetrate

and offering immersive views of the trees. By embracing the organic shapes and textures of the forest, architects create buildings that feel both part of and respectful to the natural landscape (Figure 18).

Figure 18. Moesgaard museum, Henning Larsen, Denmark [Photo by Martin Schubert, Annex 7].

Island landscapes are popular with tourists looking to experience the natural beauty of the beach and the ocean. These landscapes may be impacted by human development, construction of resorts and other tourism facilities but are generally less impacted compared to other landscapes. Surrounding land and sea attributes here are usually integrated by designing structures that respond to the proximity of the ocean, tropical vegetation, and often sandy or rocky terrain. Architects like Oscar de la Renta and Renzo Piano have designed resort projects and private villas that embrace island ecosystems, using materials like bamboo, stone, and thatch to blend seamlessly with the surroundings. These buildings are often designed to withstand tropical climates, with features like elevated structures to protect against flooding and open designs to maximize natural ventilation. Emphasizing sustainability, island architecture often incorporates renewable energy sources and water conservation systems. By positioning buildings to take advantage of ocean views and the island's natural topography, architects ensure that their designs enhance the serene beauty of the coastal and marine environment while being environmentally conscious (Figure 19). Island landscapes differ from coastal landscapes by often involving more isolated environments surrounded entirely by water, requiring architecture to address both marine and tropical climates. While coastal architecture typically focuses on shoreline areas and may be influenced by nearby urban developments, island architecture must consider limited resources, self-sufficiency, and sometimes harsher weather conditions like tropical storms. Island structures often emphasize integration with the natural environment through sustainable materials and off-grid systems, while coastal architecture may prioritize interaction with the ocean through proximity and views.

Figure 19. Calivigny Island, Oscar de la Renta, Grenada [Photo by Calivigny Island, Annex 7].

Agricultural landscapes, rural areas that are characterized by farming and agriculture and offer visitors the chance to experience the natural beauty of the countryside. Agricultural landscapes may be impacted by human development, the construction of roads and other infrastructure, but are generally less impacted by human activity. Prioritizing spatial solutions that respect the rural character and functional needs of farming environments. Architects like Glenn Murcutt and Herzog & de Meuron have worked on projects that blend with the open, cultivated land by using simple, functional forms and materials like wood, stone, and metal. These designs often prioritize sustainability, incorporating elements like rainwater harvesting systems, natural ventilation, and passive solar heating to minimize environmental impact. The architecture tends to be low-profile, following the natural contours of the land to avoid disrupting the agricultural processes. Structures are often oriented to maximize natural light and views of the countryside, enhancing the connection between the built environment and the surrounding farmland. By integrating traditional rural elements with modern sustainability practices, architects create buildings that support both agriculture and ecological preservation (Figure 20).

Figure 20. Alexander Calder Sculpture Garden, Herzog & de Meuron, Portugal [Photo by Herzog & de Meuron, Annex 7].

Coastal landscapes, beaches, cliffs, and other coastal features that are popular with tourists are frequently impacted by human development, like coastal towns and cities, ports, and other infrastructure however differ in their development level by country and location. often focus on creating designs that respond to the dynamic interaction between land and sea. Architects like Tadao Ando and Richard Meier have developed coastal projects that take advantage of ocean views and breezes while addressing the challenges of saltwater corrosion, wind, and flooding. These objects frequently incorporate materials like concrete, glass, and treated wood, which are resilient to the coastal climate. Elevated platforms or stilts are commonly used to protect buildings from rising tides or storm surges, and open layouts maximize airflow for natural cooling. Coastal architecture also tends to integrate with the natural contours of the shoreline, often using curved or linear forms that mimic the flow of the beach or cliffs, creating a seamless connection between the structure and the coastal environment. In coastal settings, architects design buildings that merge with the landscape while standing up to the harsh conditions of the sea. Alberto Campo Baeza and David Chipperfield create minimalist designs with expansive glass facades that offer unobstructed views of the water using robust materials to ensure durability in a marine environment. These buildings are often low-impact and eco-friendly, incorporating renewable energy and water conservation systems to minimize their environmental footprint. Architectural projects along the coast integrate landforms like cliffs, beaches, and dunes into their designs, creating a balance between the built and natural environments. For instance, Kengo Kuma and Norman Foster have worked on projects where the architecture follows the undulating terrain, using organic materials and forms that blend with the coastline. The emphasis is often on creating minimal disruption to the environment, incorporating sustainable technologies like solar panels and rainwater harvesting, and designing buildings that reflect the natural beauty of the coastal landscape while providing protection from environmental elements, high winds and salt spray (Figure 21,Figure 22).

Figure 21. Jeju Ball Villa, Kengo Kuma, South Korea [Photo by Daici Ano, Annex 7].

Figure 22. Chichu Art Museum, Tadao Ando, Japan [Photo by Chicu Art Museum, Annex 7].

Lakes, rivers and other water bodies provide visitors with the opportunity to experience the natural beauty of the water and participate in recreational activities, boating and fishing. These landscapes may be impacted by human development, construction of dams and other water management infrastructure, especially when closer to urban centres. Traditionally however they are considered a low development area. In landscapes surrounding lakes and rivers, architects design structures that engage with the tranquil beauty of freshwater environments. Unlike coastal or island architecture, which deals with oceanic conditions, lakeside and riverside architecture emphasizes serenity and connection to still or flowing water. Architects like Frank Lloyd Wright and Zaha Hadid have designed projects that use large windows, terraces, and decks to enhance views of the water, often blending the structure into the gently sloping terrain. These designs may include elements like boathouses or docks, creating a seamless interaction between the built environment and the water, while also addressing issues like flooding and erosion through elevated structures or natural barriers. Sustainable approaches includ features like rainwater harvesting and environmentally friendly materials often integrated to protect the delicate aquatic ecosystems (Figure 23).

Figure 23. Fallingwater, Frank Lloyd Wright, The United States [Photo by Lee Sandstead, Annex 7].

Urban landscapes, including city and town areas offer visitors the opportunity to experience urban environments, including parks, gardens, and other green spaces. These landscapes are heavily impacted by human development and are characterized by the presence of buildings, roads, and other infrastructure paired with elevated noise, and dust, present in such environments. During last decades their importance in nature travel has been growing as tourists look for sustainable low travel alternatives for travelling to far nature tourism destinations that

are associated with growing carbon footprint. Here architectural forms that respond to the dense built environment while incorporating elements of nature provide positive results in relation to nature tourism. Unlike rural or natural settings, urban architecture must navigate the challenges of space constraints, infrastructure, and human activity. Architects like Bjarke Ingels and Norman Foster often focus on creating green spaces, rooftop gardens or vertical forests, that bring nature into the city while enhancing sustainability. Urban architecture also integrates with transportation networks, using compact designs that maximize efficiency and minimize environmental impact. The emphasis is on blending modern materials like glass and steel with natural elements to create buildings that promote a balance between urbanization and environmental well-being, offering green havens within bustling cities (Figure 24).

Figure 24. Gammel Hellerup Gymnasium, Bjarke Ingels, Denmark [Photo by Gammel Hellerup Gymnasium, Annex 7].

Human-impacted landscapes, industrial sites, landfills, or mining areas, differ significantly from urban landscapes in that they are primarily shaped by heavy environmental alteration and often reflect the consequences of large-scale human activity. In these areas, architects focus on reclamation, restoration, and creating new uses for degraded land. Unlike urban landscapes, which are centres of human habitation and commerce with ongoing development, human-impacted landscapes often require designs that prioritize ecological recovery, turning abandoned industrial zones into green spaces or cultural hubs. Architects like Lacaton & Vassal or Anne Lacaton might use adaptive reuse techniques, focusing on reducing the footprint of new construction while rehabilitating damaged ecosystems. Where urban landscapes are vibrant, structured, and focused on efficient living, human-impacted landscapes often demand solutions that are about healing and reintegration of nature into previously exploited areas. In these contexts, the architectural goal shifts from building in synergy with an existing cityscape to creating sustainability and resilience in areas that have been heavily modified or neglected, transforming them into valuable social or ecological spaces. These landscapes may offer opportunities for nature tourism experiences: eco-tourism or cultural tourism but may also present challenges in terms of preserving and enhancing the natural beauty and ecological integrity of the environment [10, 94].

The landscape is often used to describe the aesthetic or visual qualities of an area and may be analysed in terms of its beauty, diversity, and other nature tourism related characteristics. The Chart 1 shows the frequency of featured landscape elements in the analysed nature tourism destinations from Annex 7 overall dominated by forest, urban and mountain landscapes.

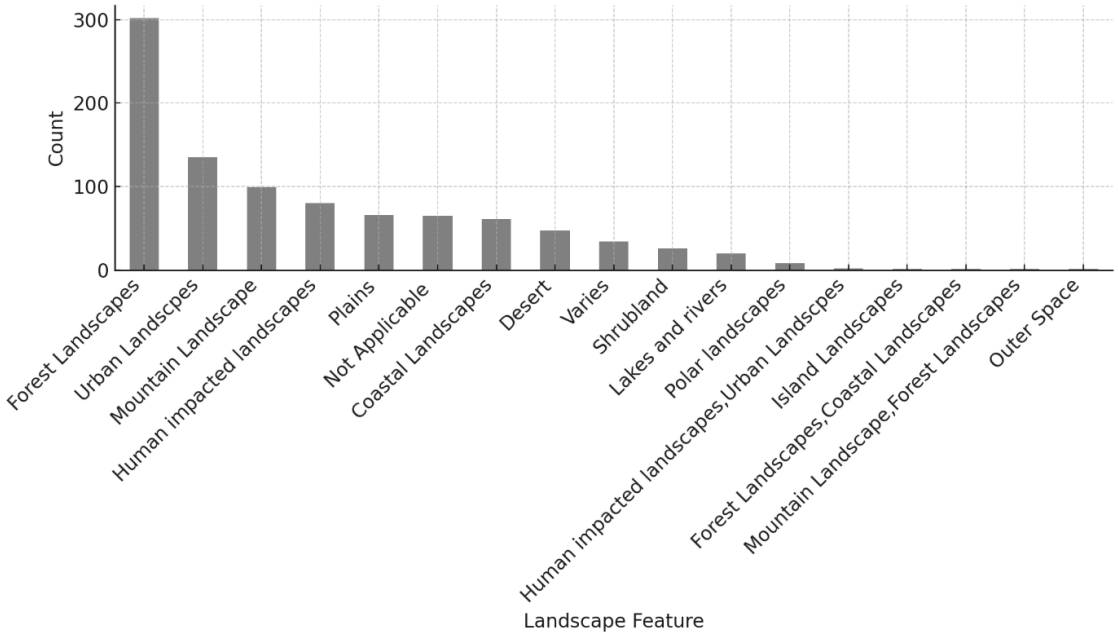

Chart 1. Count of Landscape features from selected destinations from Annex 7.

Role of landforms and bodies of water in nature tourism architecture: The unique landforms of a region can have a significant impact on the attractiveness and appeal of nature tourism destinations. Mountains, valleys, plateaus, and other landforms provide a stunning natural backdrop for outdoor activities and adventures and can also provide opportunities for unique architectural interventions. In this section, we will explore how different types of landforms can contribute to the success of nature tourism destinations, and the challenges and opportunities they present for architects and designers to create immersive and engaging experiences for visitors, while also preserving and enhancing the natural beauty of the region. Choice of materials and building techniques serves as a crucial consideration in architects work with integration of landforms. In mountainous regions, for example, architects and designers may choose to use materials and techniques that are suited to the extreme weather conditions like heavy snowfall and high winds. This might include the use of durable and weather-resistant materials for example timber or stone, and the incorporation of design elements that help to minimize the impact of the built environment on the surrounding ecosystem. Mountainous regions often offer some of the most breathtaking views and outdoor experiences in the world. From skiing and snowboarding in the winter to hiking and climbing in the summer, mountains provide a wide range of recreational opportunities for visitors. In addition to these activities, mountain resorts often offer a variety of accommodation options, luxury hotels, cabins, and chalets, which are designed to take advantage of the stunning mountain views and provide a comfortable and welcoming environment for visitors [15, 30, 140].

In low-lying areas, valleys and other flood-prone regions, designers must consider the potential for natural hazards and must design buildings and infrastructure that are resilient and adaptable, including the use of materials and techniques that are resistant to flood damage, raised foundations or flood-resistant doors and windows. Low landforms can also serve as attractive destinations for nature tourism, particularly for activities like rafting, kayaking, and fishing. Low lying areas often offer a more peaceful and serene environment and can provide opportunities for more rustic and eco-friendly accommodation options, tents, yurts, and cabin rentals [97]. Flat, elevated areas, like plateaus are common for nature tourism development.

These landscapes are well-suited for spacious accommodation solutions, including villas, lodges, and retreat centres that can be oriented to capture panoramic views and the feeling of openness. Open settings are well matched for low-impact architectural interventions that incorporate sustainable features like solar panels and rainwater harvesting systems. These areas also attract visitors interested in birdwatching, landscape photography, and stargazing, activities that benefit from unobstructed horizons and clear skies.

Springs, natural sources of water that emerge from underground, are often found in mountainous or forested regions and are vital for sustaining the local environment. In architectural design, springs are often incorporated into the landscape as focal points that enhance both the natural and built environment. In remote locations like Phugtal Monastery in India (Annex 1, Annex 7) which is nestled within a rugged mountain landscape, the integration of natural springs contribute to the ecosystem and aligns with the monastery's spiritual and contemplative nature. The monastery's design complements the surrounding terrain, with the water from nearby springs supporting life and agriculture in this isolated area. By preserving and showcasing natural water sources, Phugtal Monastery attracts visitors who are drawn to both the architecture, spiritual experience and the serenity provided by the natural environment and the built environment (Figure 25).

Figure 25. Phuktal Monastery, India [Photo by Author, Annex 2].

Interwoven with Cultural Heritage and Tourism are small bodies of flowing water, often integrated into the architectural design of structures in mountainous or forested landscapes. Providing an ongoing connection to nature, enhancing the serenity and appeal of the site. At Moni Timiou Monastery in Greece, the presence of nearby streams creates an immersive experience for visitors. The monastery, perched on a high plateau with dramatic cliffs, reflects the natural landscape for both defensive and contemplative purposes. Streams running through these areas enhance the sense of isolation and tranquillity, providing opportunities for hiking and exploration. They also contribute to the agricultural needs of the site, feeding the vegetation and sustaining the monastery's self-sufficiency, which is integral to its appeal for tourists seeking both cultural and nature experiences. When integrated into the design of resorts, lodges, and eco-friendly accommodations, streams create tranquil environments that encourage relaxation and reflection. Architects often take advantage of streams by positioning structures to overlook or be adjacent to the water, allowing the natural flow to become part of the visitor's experience.

Architectural Features Related to Streams often include Footbridges and Pathways, Small, rustic footbridges are often built over streams to provide access and connectivity while maintaining a close relationship with the natural watercourse. Pathways that follow the stream's course can be designed to enhance the visitor's interaction with the water. Accommodations near streams often feature open-air patios, decks, or even meditation spaces, allowing visitors to enjoy the soothing sounds of flowing water. In sustainable tourism destinations, streams are preserved and protected through careful water management, ensuring that the natural flow is not disrupted by human activity. Buildings near streams are typically designed with flood considerations in mind. Streams can offer a wide range of activities for nature tourists, many destinations located near streams offer opportunities for fly fishing or other types of fishing, making them attractive for visitors interested in outdoor sports. Streams often serve as natural guides for hiking trails, providing a sense of direction and offering a peaceful environment for hikers as well as supporting a diverse range of ecosystems, making them ideal for birdwatching, amphibian observation, and photography. The flowing water attracts a variety of species, enhancing the natural experience. Plitvice Lakes National Park in Croatia is renowned for its cascading streams that connect a series of lakes and waterfalls. Elevated walkways allow visitors to walk along and over the streams without disturbing the natural environment. Teton Mountain Lodge in Wyoming, USA, offers views of nearby mountain streams, integrating the flowing water into the backdrop of the resort, creating a relaxing environment for visitors after a day of exploring the surrounding wilderness. Oregon's Columbia River Gorge features numerous hiking trails that follow streams and waterfalls, providing opportunities for visitors to engage with the water as they explore the scenic landscape.

A well-known example of hot spring integration is the Blue Lagoon in Iceland, where the architecture blends with the surrounding volcanic landscape. The modern, minimalistic design of the Blue Lagoon spa complex uses natural lava rock and muted tones to complement the milky-blue geothermal waters. Visitors can experience the healing properties of the hot springs while being surrounded by the raw, dramatic beauty of Iceland's volcanic terrain. Hot springs are particularly appealing in nature tourism because they offer an additional layer of attraction beyond just the natural beauty of the landscape. They provide a tangible, interactive experience that draws visitors looking to relax, heal, or connect with the environment in a more immersive way. Hot spring locations often combine scenic hiking trails, wildlife viewing, and other outdoor activities with the therapeutic benefits of the waters. These destinations also tend to emphasize sustainability, preserving the natural ecosystems that support the hot springs while offering eco-friendly accommodations and services (Figure 26). This approach aligns with the broader trends in nature tourism, where the emphasis is on low-impact, environmentally responsible travel [122].

Figure 26. Blue Lagoon [Photo by Author, Annex 2].

At Khoo Teck Puat Hospital, the adjacent Yishun Pond plays a functional role in creating a calming atmosphere for patients, staff, and visitors. The design of the hospital integrates open spaces, gardens, and water features that connect the urban setting with nature. The presence of the pond encourages a sense of well-being and relaxation, which is particularly important in a healthcare setting where patients benefit from exposure to natural environments (Figure 27). The hospital's architecture includes large windows and open areas that offer panoramic views of Yishun Pond. This connection to nature through architecture provides a serene backdrop for healing and relaxation, emphasizing the importance of green spaces in urban design. The integration of the pond into the hospital's landscape design transforms what could be a purely functional space into a therapeutic one. The surrounding greenery and water help mitigate the urban heat island effect while offering a refuge for wildlife. The pond is part of a larger ecosystem that includes sustainable water management practices. Rainwater harvesting, filtration, and bio-retention systems ensure that the pond remains a healthy and active part of the local environment, even in a densely populated urban setting. Ponds in Nature Tourism serve as focal points for various activities, from birdwatching and educational tours to simple relaxation spots within parks or eco-resorts. Their relatively small size makes them easy to incorporate into a variety of landscapes, including urban, suburban, and rural settings. Ponds also offer opportunities for conservation efforts, where visitors can learn about aquatic ecosystems and the importance of maintaining healthy water bodies.

Figure 27. Khoo Teck Puat hospital, RMJM, Singapore [Photo by Eustaquio Santimano, Annex 7].

Lakes, large bodies of freshwater surrounded by land, are highly popular for recreational activities, boating, fishing, and swimming. They often serve as focal points for nature tourism and are crucial habitats for various species. Float Cabins on Powell Lake, Canada are Located on the serene waters of Powell Lake. The Float Cabins are unique off-grid accommodations that offer visitors a chance to experience living on the water. These cabins are situated directly on the lake, providing guests with stunning views and immediate access to the water for activities like fishing, swimming, and boating. The architecture is simple yet functional, designed to harmonize with the natural environment and promote sustainability. The cabins are built on floating platforms, allowing them to drift on the lake's surface while being securely anchored. This integration with the lake makes the cabins well suited for nature lovers seeking isolation and a deep connection with their surroundings. The presence of the lake shapes the design of the cabins and the overall visitor experience, offering a sense of calm and escape from urban life.

The Grotto Sauna, located on the shores of Lake Huron in Canada, showcases how architecture can blend seamlessly with a lakefront environment while offering a wellness-focused experience. Designed by Partisans, the sauna is a compact, sculptural structure made from wood and glass, positioned directly on the rocky shore of the lake. The minimalist design echoes the natural beauty of the surrounding landscape, with large windows providing uninterrupted views of Lake Huron's blue waters. The integration of the sauna with the lake is both functional and aesthetic. Visitors can enjoy the heat of the sauna and then cool off in the lake, creating a unique wellness experience that draws on the natural elements. The lake is a critical part of the design, shaping the visitor's interaction with both the architecture and the surrounding environment. This site is a perfect example of how lakeside architecture can foster a deep connection with nature while maintaining modern comforts (Figure 29). The Floating Sauna OGLE is a floating bathhouse located on a lake in Latvia, designed to offer a unique nature-immersive experience. Built from natural materials, the sauna floats on the lake, providing visitors with an intimate, water-based wellness retreat. The structure's design emphasizes the simplicity and raw presence of the natural surroundings, with wooden construction that mirrors the forest landscape around the lake. The lake itself becomes an integral part of the experience, with guests able to dip directly into its waters after their sauna session, further connecting the built environment with nature. drawing tourists seeking wellness and relaxation and demonstrating how lakes can serve as both a visual and interactive centrepiece in architectural design (Figure 28).

Situated near Lake Geneva, The Hut in the Purple Beech is a nature lover's retreat that highlights the beauty of lakeside living. This treehouse-style accommodation is perched at the edge of the lake, surrounded by the foliage of a majestic purple beech tree. Visitors are drawn to the location for its secluded atmosphere and proximity to the lake, which offers opportunities for birdwatching, peaceful walks, and reflection by the water. The lake plays a central role in defining the atmosphere of this location. While the hut itself is nestled in the trees, the presence of the lake just a short walk away adds to the allure, giving guests a balanced experience of woodland and water. The architecture is minimalist and natural, using materials that blend with the surrounding environment while allowing the lake to remain the focal point of the setting.

Figure 28. Floating Sauna OGLE, Estere Savicka, Latvia [Photo by OGLE, Annex 7].

Figure 29. Grotto Sauna, Partisans, Canada [Photo by Jonathan Friedman, Annex 7].

Wetlands, areas of land periodically or permanently covered with water and characterized by specific types of vegetation. In addition to swamps, other types of wetlands include marshes, bogs, and fens. Building in or near wetlands requires a sensitive approach that minimizes environmental impact while enhancing the visitor experience. Structures in wetland areas are typically designed to have a minimal footprint, using materials and construction

methods that do not disrupt the delicate ecosystem. Common Architectural Features in Wetlands include Elevated Walkways and Boardwalks - a hallmark of wetland architecture, allowing visitors to explore the environment without disturbing the water or land. Elevated pathways provide safe access to otherwise inaccessible areas and allow tourists to observe wildlife and plant species up close. Wetland visitor centres are often designed with sustainability in mind, using energy-efficient materials and natural ventilation. These centres serve as educational hubs, providing information about the importance of wetlands, the species that inhabit them, and the ecological benefits they offer. In many wetland areas, observation towers or viewing platforms are built to give visitors panoramic views of the landscape. These structures are usually constructed from wood or other natural materials to blend with the environment and minimize visual impact. Eco-lodges near wetlands are designed to be energy-efficient and environmentally friendly. They often use sustainable materials and employ systems like rainwater harvesting and solar energy. These accommodations attract nature tourists who are drawn to the tranquillity and biodiversity of wetland ecosystems [22].

Wetlands offer a range of activities that appeal to nature tourists, including birdwatching, photography, guided ecological tours, and educational programs. Wetland areas often serve as critical habitats for endangered or migratory bird species, making them key destinations for ornithologists and eco-tourists. Additionally, wetlands play an essential role in water management and conservation, and many visitors are drawn to these areas to learn more about sustainable practices and ecological preservation. Several well-known destinations around the world serve as models for how wetlands can be integrated into tourism and architectural design. Everglades National Park in Florida, USA, is one of the largest wetland ecosystems globally and features extensive elevated boardwalks, visitor centres, and educational programs focused on wetland preservation. Kakadu National Park in Australia features vast wetlands that are home to an array of wildlife. The park’s infrastructure includes walkways, observation points, and eco-lodges designed to give visitors a sustainable way to explore the environment. Okavango Delta in Botswana is another example of wetland tourism, where luxury eco-lodges are built on stilts to minimize environmental impact while providing high-end accommodations for nature tourists.

Canals, a crucial interaction between bodies of water and landforms**.** Man-made channels of water that are used for transportation, irrigation, and other purposes. Canals can be found in both urban and rural areas and are frequently incorporated into nature tourism experiences, including boat tours or canal-sidewalks. Canals serve as important features for transportation, irrigation, and aesthetic appeal**.** Hood River Retreat, USA. The Hood River Retreat is a nature-focused series of family cabins hidden in a forested landscape, incorporating canals as part of the surrounding water systems. This retreat offers visitors a peaceful escape into nature, with the nearby canal serving both functional and aesthetic purposes. The cabins, designed to harmonize with the forest landscape, allow visitors to experience the natural flow of water while staying close to the amenities offered by modern accommodations. The canal, integrated into the site, enhances the connection to nature by providing serene water views and the calming sounds of flowing water. It also supports the local ecosystem by feeding nearby water bodies, helping sustain the surrounding forest's flora and fauna. This design encourages eco-tourism and wellness, drawing visitors who seek a peaceful and immersive experience in nature. Viewpoint Shelter Over Regent's Canal, United Kingdom, Located near London’s Regent’s Canal, the Viewpoint Shelter offers a unique architectural feature that floats above the canal, allowing visitors to appreciate the waterway and its surrounding urban landscape. This floating shelter is a modern, minimalist structure designed to blend into the city while providing a peaceful retreat for those walking along the canal. The canal itself serves as a scenic route for

pedestrians, boat tours, and other recreational activities, making the Viewpoint Shelter an ideal spot for tourists to rest and observe the vibrant canal life. Regent's Canal has historically been used for trade and transportation, but in modern times it has become a recreational feature of the city, drawing locals and visitors alike. The floating shelter emphasizes the integration of urban architecture with historical waterways, highlighting how canals can serve as cultural and recreational hubs within cities (Figure 30).

Waru Waru Agricultural Terraces in the Peruvian highlands. The ancient Waru Waru Agricultural Terraces demonstrate an innovative use of canals for irrigation and water management. This pre-Columbian system, still in use today, employs raised fields with canals running between them to ensure water distribution and soil fertility. The canals help manage water levels, preventing both droughts and floods in an agricultural context. While primarily serving a functional purpose, these canals also provide a cultural and historical tourism experience. Visitors to this region can explore the terraces and learn about the water management techniques that have been practiced for thousands of years. The Waru Waru system showcases the integration of canals into both the agricultural and cultural fabric of the region, offering insights into sustainable farming practices (Figure 31).

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Figure 30. Viewpoint Shelter, AOR, The United Kingdom [Photo by Max Creasy, Annex 7].

Figure 31. Waru Waru Agricultural terraces, Peru [Photo by World Monument Fund, Annex 7].

Rivers provide opportunities for rafting, kayaking, and fishing, making them popular for adventure tourism. Rivers also support diverse ecosystems and serve as critical freshwater sources. Rivers, with their dynamic movement and ecological significance, often serve as focal points for tourism, offering opportunities for relaxation, adventure, and wellness. Mirror House, a unique mirror cabin that hangs over a river in Latvia, providing visitors with an immersive experience in nature. The architectural design uses reflective surfaces to blend the cabin into its forested and riverside environment, creating an almost invisible structure that harmonizes with the natural landscape. The proximity to the river enhances the cabin's serene and secluded atmosphere, offering guests a peaceful retreat where they can relax by the water, listen to the sounds of the flowing river, and observe wildlife. The river becomes a central feature of the visitor experience, contributing to the sense of being fully immersed in nature. Visitors can enjoy outdoor activities like fishing or canoeing (Figure 32). The Aura House in Bali is a stunning bamboo structure situated near a river, designed by Ibuku Bamboo Architecture. The river flows directly through the lush forest, providing guests with a beautiful view and sound of running water that enhances the tranquil atmosphere. The river's proximity allows for meditation by the water, forest walks, and swimming in natural pools. The house itself is built using sustainable bamboo materials, which blend well with the natural environment.

Figure 32. Spoguļnamiņš, Mārcis Ziemiņš, Gundega Skudriņa, Latvia
[Photo by Jānis Vīksna, Annex 7].

Waterfalls are popular destinations for nature tourism and are often incorporated into recreational activities like hiking and sightseeing [3, 97]. One of the most famous examples of architectural integration with a waterfall is Fallingwater, designed by Frank Lloyd Wright. Located in Pennsylvania, USA, built directly over a natural waterfall, with the sound and sight of flowing water being central to the experience. The architecture is designed to harmonize with the surrounding forest landscape, using natural stone and cantilevered terraces to blend with the environment. The waterfall here is integral to the overall design of the house. Visitors experience the interaction between the built structure and the natural environment, with the waterfall creating a sense of movement and life that permeates the space. The house is an iconic example of how architecture can coexist with nature, using the waterfall to enhance both the aesthetic and sensory experience of the site. Pension Briol is a hillside retreat in Italy, where guests can enjoy views of distant waterfalls as part of the serene mountain landscape. This hotel, nestled in a natural environment, offers rustic accommodations that emphasize relaxation and connection to nature. While the waterfall is not directly incorporated into the architecture, its presence in the surrounding landscape adds to the peaceful, remote atmosphere that attracts visitors looking for a retreat from urban life. The sound of distant waterfalls and the sight of cascading water contribute to the overall ambiance, creating a calming and meditative experience for guests.

The Salt Spring Island Cabin in Canada, designed by Saunders Architecture, is a modern cabin that integrates its forested surroundings, with nearby waterfalls contributing to the overall natural experience. While the cabin itself is designed to blend seamlessly with the dense forest landscape, the nearby waterfall provides an additional layer of tranquillity and immersion for guests. Waterfalls in this context are key to creating a sense of serenity and escape. The sound of the water, along with the lush forest environment, offers visitors a peaceful retreat where they can enjoy nature at its most pristine. The Gibbon Experience Treehouse combines adventure tourism with stunning natural surroundings, including rivers and waterfalls. This unique eco-tourism destination features treehouses perched high in the forest canopy, allowing visitors to experience the surrounding waterfalls and rivers from an elevated perspective. The waterfall serves as both a scenic attraction and a source of adventure, with zip lines allowing guests to traverse the landscape and view the falls from different vantage points, central to the sense of adventure and exploration that defines the Gibbon Experience. Visitors can hike to the falls, swim in the pools, or simply enjoy the sight and sound of cascading water from their treetop accommodation (Figure 33).

Figure 33. The Gibbon Experience Treehouse, Laos [Photo by Gibbon Experience, Annex 7].

Reservoirs are used for a variety of purposes, including irrigation, hydroelectric power generation, and water storage. Reservoirs may also be used for recreational activities, boating and fishing integrating into nature tourism experiences. Architectural design around reservoirs often focuses on creating functional and sustainable structures that complement the natural surroundings. Many reservoirs are developed into multi-use recreational areas, with visitor centres, lodges, and parks built along the water's edge, designed to minimize environmental impact while maximizing access to the water [71, 97]. Dams that form reservoirs are often significant architectural monuments, sometimes becoming tourist attractions in their own right. Observation decks can be built into or near the dam, allowing visitors to appreciate the engineering while enjoying panoramic views of the reservoir. Many reservoirs include visitor centres that provide educational information about water management, sustainability, and the environmental importance of reservoirs. Resorts, lodges, or campgrounds near reservoirs include marinas, fishing piers, and picnic areas. Buildings near reservoirs are often constructed with eco-friendly materials and energy-efficient systems. Reservoirs, by their nature, provide opportunities for sustainable water use and hydroelectric power, which are frequently highlighted in the design of accompanying structures. Reservoirs are often used for non-motorized water sports, kayaking, canoeing, and paddleboarding. Larger reservoirs may also allow for motorized boating, water skiing, and jet skiing. Many reservoirs are well stocked with fish, making them prime locations for recreational fishing. Fishing piers or boat launches are common facilities found at reservoir-based tourism sites. The areas around reservoirs are often developed with hiking trails, camping sites, and picnic areas. These amenities allow visitors to enjoy the water and surrounding landscape.

Lake Mead in the USA, created by the Hoover Dam, is one of the largest man-made reservoirs in the world. The Hoover Dam is an architectural and engineering marvel, and the surrounding lake offers ample recreational opportunities. Lake Vyrnwy in Wales is another well-known reservoir that provides water to nearby cities while serving as a popular destination for hiking, birdwatching, and fishing. Oman's Wadi Dayqah Dam shows how a reservoir can be turned into a scenic and recreational area, with the dam creating an artificial lake used for tourism while supplying water for agriculture. Seas are popular destinations for nature tourism and are often characterized by a range of unique coastal landscapes and ecosystems [43, 62, 103, 106]. Coron Palawan Twin Lagoon in the Philippines is a stunning natural feature, where a small wooden cabin sits above the ocean on stilts. The lagoon's crystal-clear waters and dramatic limestone cliffs create a fairytale-like atmosphere that draws nature lovers and adventurers alike. The experience at Coron Palawan revolves around its proximity to the sea. Visitors can swim, snorkel, or kayak in the lagoon, surrounded by the beauty of the ocean and cliffs. The wooden cabin and stilted structures are designed to blend seamlessly into the natural

environment, using the ocean as the main attraction. The sea here provides a serene and calming environment, enhancing the beauty and allure of this remote destination (Figure 34). Cape Hatteras Lighthouse in North Carolina, USA, is an iconic coastal landmark known for its towering height and historical significance. Located on the Atlantic coast, the lighthouse was built to guide ships through the dangerous waters off the Outer Banks. The sea plays a crucial role in the history and function of this structure. The sea enhances the visitor experience by providing dramatic views of the Atlantic Ocean and its surrounding beaches. The lighthouse is also a popular destination for educational tourism, where visitors learn about the maritime history of the area and the important role the lighthouse played in ensuring the safety of ships navigating the treacherous coastline (Figure 35).

Figure 34. Coron Palawan Twin Lagoon, Phillippines (Annex 7)

Figure 35. Cape Hatteras Lighthouse, Dexter Stetson, The United States [Photo by WJE Projects, Annex 7].

Oceans are popular destinations for nature tourism, and coastal areas along the ocean are often home to a range of tourism facilities and experiences. Oceanix City is a visionary concept by Bjarke Ingels Group (BIG), designed to float on the ocean as a self-sustaining urban settlement. This futuristic project envisions a modular city that could be deployed in coastal areas prone to rising sea levels. The concept involves floating platforms that can house communities, with each platform designed to be sustainable, incorporating renewable energy sources, water filtration systems, and food production technologies. The ocean is central to the design and functionality of Oceanix City. The project offers a solution to climate change by creating a city that floats on the water and harnesses the ocean's resources to sustain itself. The ocean surrounds each module, becoming an integral part of daily life, from transportation to energy production. While still a concept, Oceanix City represents the potential of integrating architecture with the ocean in a sustainable, futuristic way [7, 23, 62]. Treebones Resort, located along the rugged coastline of Big Sur, California, offers unique yurt accommodations that take full advantage of their proximity to the Pacific Ocean. The resort’s yurts are positioned to provide panoramic views of the ocean, creating a serene and immersive nature experience. The yurts offer a blend of rustic charm and modern comfort, providing an eco-friendly glamping experience where the ocean is a constant presence. This resort demonstrates how proximity to the ocean can create a tranquil retreat where nature and sustainability are key components of the design.

Art Villa Coco, part of a larger complex in Costa Rica, incorporates the distant view of the Pacific Ocean into its tropical forest setting. While the ocean is not directly adjacent to the villa, its presence is felt through the expansive views from the property’s elevated position. The villa itself is designed with natural materials and open-air spaces that allow guests to enjoy the beauty of both the forest and the distant ocean. This combination of forest and ocean views creates a relaxing and inspiring atmosphere for visitors looking for adventure and relaxation. Activities like hiking and beach excursions are part of the overall experience, and the design

reflects a harmony between the land and sea. Art Villa Coco showcases how ocean views, even from a distance, can enhance the appeal of a destination by providing a connection to nature and coastal beauty.

Hapuku Tree Houses, located near the Kaikoura coast in New Zealand, are elevated accommodations nestled in the trees, with stunning views of both the mountains and the Pacific Ocean. The design of the treehouses allows guests to feel as though they are living in harmony with nature, with large windows and open spaces that maximize the connection to the surrounding landscape. The ocean is a significant part of the appeal, offering opportunities for marine wildlife viewing, including whale watching, which is a popular activity in the region. The treehouses are designed to provide a luxurious, eco-conscious experience, with the ocean and its natural wonders forming the backdrop to a unique and immersive stay. Hapuku Tree Houses highlight how ocean proximity can enhance both the adventure and relaxation aspects of nature tourism (Figure 36). Beach Huts in Indonesia provide simple, beachfront accommodations where the ocean is the main attraction. These huts are designed to offer an affordable and immersive experience, with the sound of the waves and the sight of the ocean being central to the visitor's stay. The huts are situated directly on the beach, allowing guests to enjoy immediate access to the water for swimming, snorkelling, and other beach activities. The design of huts is minimalistic, focusing on the essentials to ensure that the beauty of the ocean remains the focal point. The combination of a tropical climate, sandy beaches, and clear ocean water creates a paradise-like atmosphere that draws tourists seeking a peaceful and laid-back experience (Figure 37).

Figure 36. Hapuku Tree houses, New Zeeland [Photo by the Wilson family, Annex 7].

Figure 37. Art Villa Coco, ARCHWERK, Costa Rica [Photo by BoysPlayNice, Annex 7].

Aquatic parks, common in both urban and rural areas and can be incorporated into nature tourism experiences. One of the most iconic features of aquatic parks, water slides range from simple, kid-friendly slides to more extreme versions that cater to thrill-seekers. Wave pools simulate the experience of ocean waves, allowing visitors to swim or float as if they were in the sea. Slow-moving water courses allow guests to float along on inner tubes in a relaxed setting, often meandering through scenic areas of the park. Many aquatic parks feature water playgrounds with fountains, sprayers, and shallow pools designed for younger children to enjoy. In addition to slides, aquatic parks may feature raft rides or water coasters that combine water elements with amusement park-style rides. The design of aquatic parks often emphasizes open spaces, flowing water, and a sense of adventure. Architects can use natural landscaping elements, rock formations and greenery, to create a more immersive environment. Sustainable water management is also an important aspect of designing these facilities, with systems in place to filter and recycle water to minimize environmental impact. Aquatic parks need to

provide seating areas, cabanas, and food courts to create a full-day experience for visitors. Shade structures and lounging areas are essential in providing comfort, as many of destinations are typically located in warm climates. While most aquatic parks are man-made, they can also be integrated into natural environments, particularly in eco-resorts or coastal destinations using natural water sources, lagoons or rivers to create a more organic and less engineered experience.

Aquaculture facilities are man-made systems for cultivating aquatic plants or animals, fish, shellfish, or seaweed. Aquaculture facilities can be incorporated into nature tourism experiences, tours of fish farms or seafood-tasting experiences, displaying farming aquatic organisms, fish, shellfish, and aquatic plants. Aquaculture facilities range from inland fish farms to coastal seaweed farms and are increasingly being integrated into nature and educational tourism. Visitors to aquaculture facilities can learn about sustainable seafood practices, observe the farming processes, and sometimes participate in hands-on experiences, harvesting or feeding the fish. Aquaculture farm tours explain the farming process, from breeding to harvesting. These tours often highlight the sustainable practices used in the facility and educate visitors about the importance of aquaculture in maintaining healthy ecosystems. Some aquaculture facilities offer fresh seafood tasting experiences, allowing visitors to sample on-site grown oysters, mussels, or sustainably farmed fish. In some cases, visitors can participate in activities like feeding the fish or harvesting seaweed, providing a more immersive experience.

Loch Fyne Oysters in Scotland facility is both a working oyster farm and a restaurant, where visitors can tour the farm and learn about the process of cultivating oysters before enjoying freshly harvested seafood. In aquaculture research facility in Tasmania, visitors can tour fish farming operations and learn about the latest research in sustainable aquaculture practices. Chilean Salmon Farms in the southern regions of Chile, salmon farms offer tours that explain the methods used to raise and harvest salmon in environmentally controlled settings. Architectural and infrastructure features include Fish Tanks or Ponds, where fish and other aquatic organisms are raised. These include ponds, tanks, or raceways that circulate water to ensure the proper environment for growth. Visitors can often see how aquatic species are fed and harvested. Some facilities offer guided tours that explain the life cycle of the species being farmed and the technology used to sustain them. Larger aquaculture facilities can include areas where visitors can see the fish or shellfish being processed for market, as well as laboratories where research into better farming practices is conducted. Aquaculture facilities often feature visitor centers that provide information about the environmental benefits of aquaculture, sustainability, and the economic importance of farming aquatic species.

Bodies of water influence both the microclimate and the material character of landscapes, often shaping how people experience nature. Features like springs, streams, hot springs, ponds, lakes, wetlands, and waterfalls add dynamic visual and sensory layers to the environment. Beyond their ecological function, they invite exploration, relaxation, and interaction, making them central to many successful nature tourism destinations. Whether for quiet observation or active recreation, water-based elements help anchor experiences that feel both memorable and deeply connected to place [3, 88, 114].

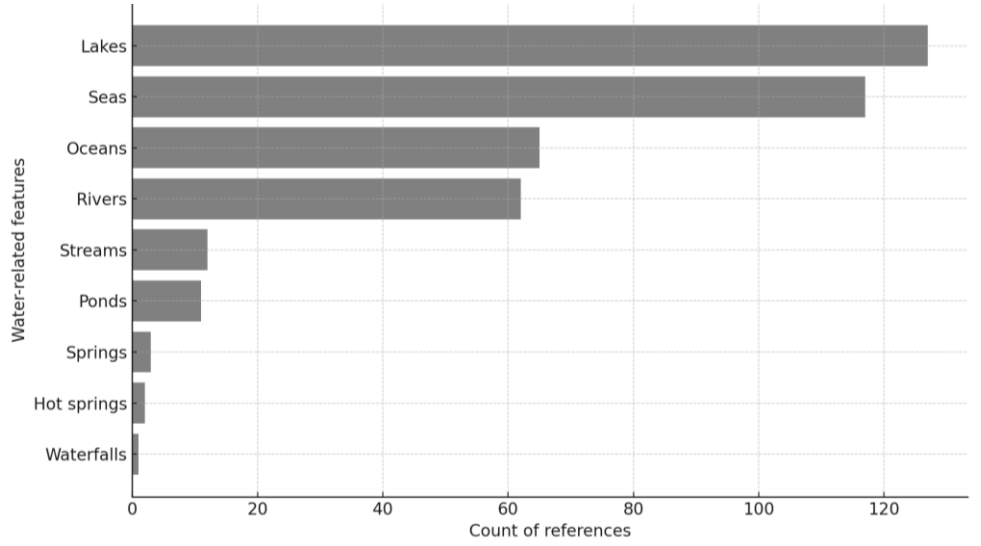

Chart 2 Count of Water related features in locations from Annex 7.

Nature and architecture have a complex and multifaceted relationship. The interaction between these two elements can provide numerous benefits, including improved mental and physical health, increased productivity, and a sense of connection with nature. At its most basic level nature interacts with architecture through the incorporation of natural materials into the design of buildings and structures. Natural materials, wood, stone, and clay can be used to create a connection between the built environment and nature as well as use of biophilic design principles in which nature can interact with architecture. Biophilic design involves the integration of nature into the built environment, using natural elements, plants, water, and sunlight. In more practical aspects, the relationship between built environments and natural landscapes can be categorized into several distinct approaches, each reflecting varying degrees of integration between human-made structures and nature. Based on existing cases from analysed architectural and tourism projects. (Annex 1, 7) these approaches range from minimal interaction with nature to fully immersive designs illustrating a spectrum of interactions between tourism infrastructure and natural environments. The majority of cases (638) fall under the “Adjacent to nature” category, indicating that most tourism setups are situated near but not within a natural setting. Other types, “Artificial or without nature” (83) and “Combined approach” (77), show moderate representation, while direct immersion models like “Only nature” (4) and “Made from elements of nature” (30) are less common. This distribution suggests a prevalent strategy of proximity rather than full integration with nature in nature tourism development.

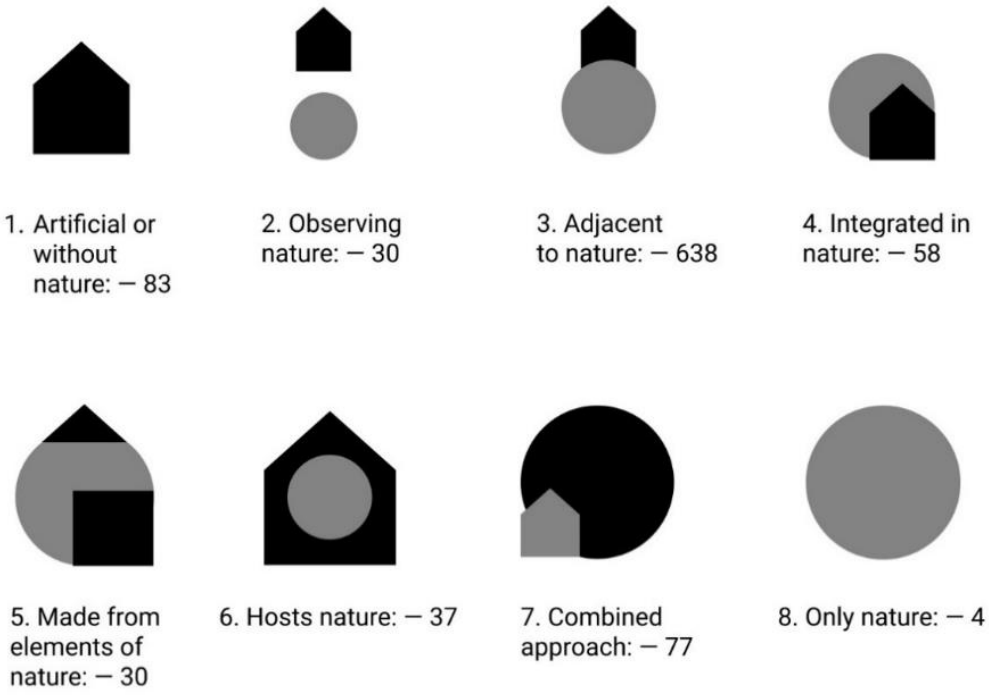

Figure 38. Nature integration approaches from Annex 7.

Integration of architecture and nature in nature tourism destinations requires a careful balance of aesthetics and functionality and a consideration of the unique characteristics of the land and the surrounding ecosystem. While each type of landform has its own unique characteristics and opportunities, they also present a number of challenges and considerations for architects and designers. In mountainous regions, architects and designers must consider the impact of extreme weather conditions, heavy snowfall and high winds, on the design and construction of buildings. In low-lying areas its crucial to properly evaluate the potential for flooding and other natural hazards and must design buildings and infrastructure that are resilient and adaptable. In flat, elevated areas, designers must consider the impact of the built environment on the surrounding ecosystem and must work to preserve and enhance the natural beauty of the region. There are also challenges to the interaction between nature and architecture. These include the need for careful planning and design to ensure that the integration of nature into the built environment is done sustainably and responsibly. There is also a need for ongoing maintenance and management of natural elements in the built environment to ensure their continued health and vitality. The interaction between nature and architecture is often a complex and multifaceted relationship. Through careful planning and design of buildings and structures, as well as the integration of natural elements into the built environment, it is possible to create unique and engaging experiences that enhance the overall visitor journey and promote the health and vitality of nature as well as attract customers and ensure sustainable and growing business potential.

1.3. Industry shift and emerging trends in nature tourism architecture

Starting with a specific illustration, in case studies from Annex 1, Iceland is a prime example of a natural destination with valuable biomes and fragile natural ecosystems that are in need of protection. The country's unique and diverse landscapes, including its glaciers, volcanoes, and geothermal hot springs, are among its most valuable natural assets. These ecosystems are also fragile and vulnerable to the impacts of human activity, pollution and over-tourism. One way in which Iceland is addressing the challenges of protecting its natural ecosystems is through the creation of new human-made nature-based destinations. These destinations provide visitors with unique and immersive experiences that allow them to connect with nature in meaningful ways, while also minimizing the negative impacts of tourism on the environment. A growing trend in Iceland is the creation of nature-based experiences near existing urban centres. This allows visitors to experience the country's natural beauty without having to travel long distances, while also minimizing the environmental impact of tourism. For example, the city of Reykjavik is home to a number of nature-based experiences, whale watching tours, birdwatching excursions, and geothermal baths, that allow visitors to experience the country's natural beauty without having to leave the city [1].

Iceland's approach to protecting its natural ecosystems through the creation of new human-made nature-based destinations is an effective strategy that allows the country to balance the needs of its natural environment with the economic benefits of tourism. Creating unique and immersive nature-based experiences near existing urban centres, Iceland offers its visitors memorable and enriching experiences while minimizing the negative impacts of tourism on the environment. The ability of a given region to attract new nature tourists can be influenced by a range of factors, including the natural and cultural attractions of the area, the availability of infrastructure and support services, and the level of competition from other destinations. In a more general sense, globally the landscape of nature tourism is undergoing a significant transformation, shifting from traditional, remote natural destinations to city-based nature experiences. This evolution is driven by several interrelated factors, including the increasing urbanization of populations, environmental concerns, accessibility challenges, and the growing demand for convenience in travel. As more people reside in urban centres, the practicality of traveling to distant natural sites diminishes due to time constraints and environmental impacts associated with long-distance travel. Strict environmental protection laws are limiting access to fragile ecosystems, necessitating innovative approaches to nature tourism that balance conservation with visitor engagement. User feedback from various destinations underscores the importance of this shift. Positive experiences are often linked to visually striking architecture, cultural significance, and unique, memorable vistas. As mentioned in previous chapter, destinations like Casapueblo and Göreme National Park receive acclaim for their aesthetic appeal and heritage value. Conversely, negative feedback highlights issues related to overcrowding, difficult access, and high costs, which detract from the overall experience. This contrast emphasizes the need for destinations to provide enriching sensory and emotional experiences while addressing practical concerns of accessibility and comfort [108].

Regional differences play a crucial role in a destination's ability to attract nature tourists. Factors including the inherent natural and cultural attractions, the level of infrastructure, and the competitive landscape influence visitor numbers. Regions rich in unique natural features and cultural heritage can draw tourists, but without adequate infrastructure and services, they often struggle to provide a satisfying experience. Areas with well-developed tourism

infrastructure can better accommodate visitors, but must differentiate themselves to stand out in a competitive market. The case study of Iceland exemplifies how destinations can adapt to these changing dynamics. By developing human-made, nature-based attractions near urban centres, Iceland offers immersive experiences that allow visitors to connect with nature without exerting undue pressure on fragile ecosystems. This approach mitigates environmental impact and enhances accessibility for a broader range of tourists, including those with mobility issues or limited time (Figure 41). Cited sites from Annex 7 show that a growing customer demand for sustainable and engaging urban nature experiences that cater to the evolving needs of modern travellers. Integration of natural elements within urban settings and leveraging innovative architectural design can provide meaningful connections to nature and preserve authentic natural sites for conservation and specialized use by researchers and dedicated nature enthusiasts. This balance ensures that the economic benefits of tourism do not come at the expense of environmental integrity, paving the way for a more sustainable and inclusive nature tourism industry.

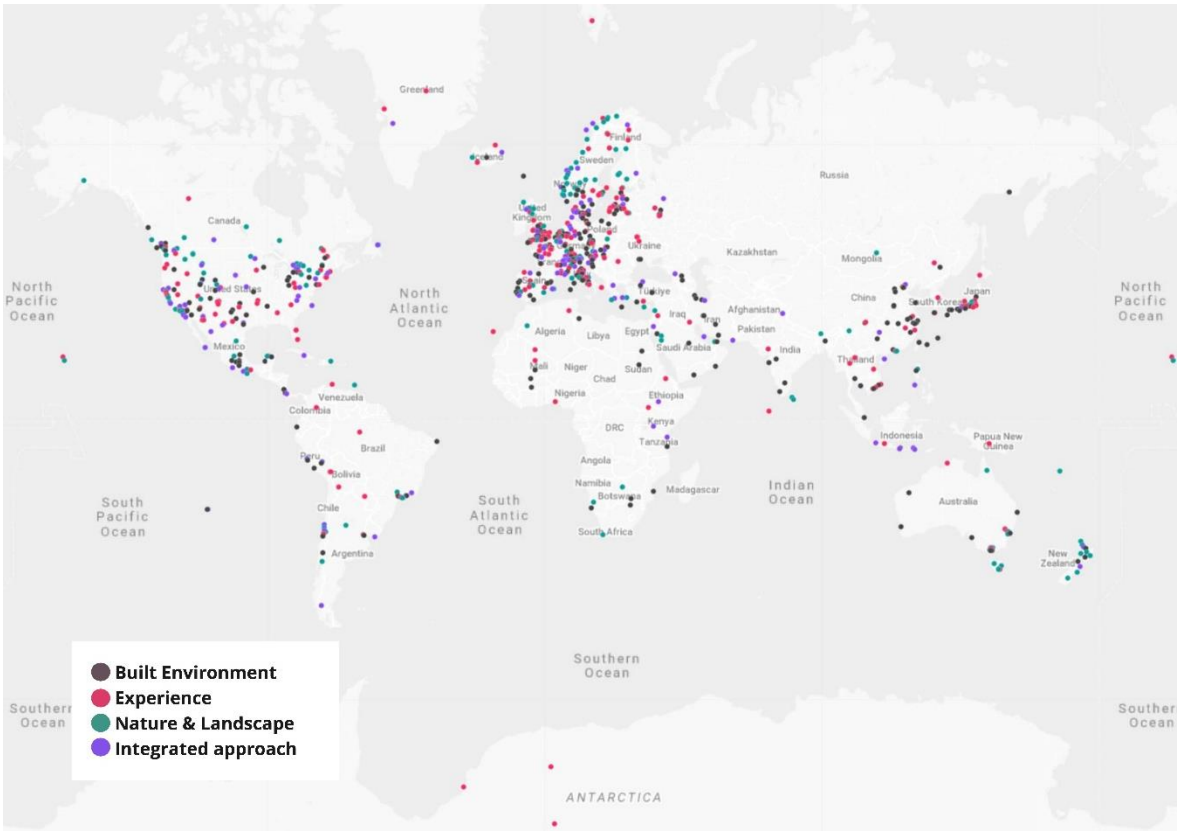

Figure 39. Nature tourism case study map from Annex 7.

Observing user feedback from selected data set (Annex 7) positive feedback from various destinations often highlights specific recurring features that enhance visitors' experiences. Aforementioned destinations like Casapueblo are frequently praised for their beautiful sunsets, cleanliness, and rich architecture (Figure 40). Similarly, Göreme National Park is noted for its stunning architecture and UNESCO heritage recognition, drawing attention to its cultural significance. Many natural and remote destinations, Mount Fanjing and Phugtal Monastery, receive positive mentions for their breathtaking views and the unforgettable experiences they offer, underscoring the importance of unique, memorable vistas in positive feedback.

Figure 40. Casapueblo, Carlos Páez Vilaróm, Urugay [Photo by Carlos Páez Vilaróm, Annex 7].

The comparison between positive and negative feedback terms (Chart 3) reveals a clear distinction in what visitors value versus what detracts from their experience. Positive feedback involving terms "views," "architecture," and "unforgettable experience" often highlight the visual appeal and unique, memorable aspects of destinations, showcasing the importance of natural beauty and cultural significance in creating positive impressions. In contrast, negative feedback terms like "crowded," "difficult access," and "expensive" point to logistical and comfort-related issues that can frustrate visitors. While the positive feedback focuses on the sensory and emotional impact of the location, negative feedback typically addresses more practical concerns, accessibility, cost, and maintenance. This comparison underscores the balance needed between providing a visually and culturally enriching experience while ensuring comfort and convenience for tourists.

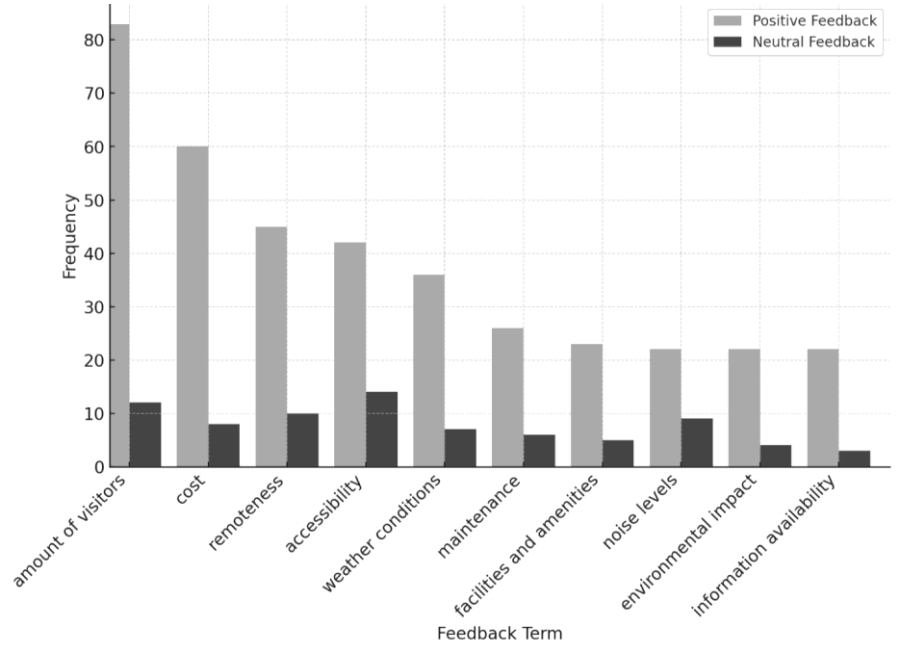

Chart 3. Comparison of Positive and Negative Feedback Terms from Annex 7.

Destinations also receive critique regarding accessibility, commercial crowding, or preservation. Stunning, places like Mount Fanjing can struggle with being too touristy, detracting from the serene experience many visitors expect. Across the board keywords associated with views, architecture and heritage are frequently linked to both praise and criticisms, reflecting the balance between maintaining authenticity and accommodating visitors. There can be significant regional differences in the ability of nature tourism destinations to attract new visitors. These differences are influenced by factors including the natural and cultural attractions of the area, the level of infrastructure and support services available, and the level of competition from other destinations. In some regions, the natural attractions and cultural heritage of the area can be a major draw for nature tourists. For example, a region with a rich history, abundant wildlife, and unique natural features like national parks or natural landmarks, may be highly attractive to nature tourists. In other regions, the availability of infrastructure and support services, accommodation, transportation, and guide services, can be a major factor in attracting new visitors. A region with well-developed tourism infrastructure, roads, airports, and visitor centres, will be able to adequately accommodate and support a larger group of nature tourists. As all limitations, growing influence of nature protection laws can drive innovation in creating new experiences. Impact varies by regions. Architecture involved synthesised nature can help cope with these challenges. The level of competition from other nature tourism destinations can also influence the ability of a region to attract new nature tourists. In some cases, a region can be part of a larger tourism area, where there are many nature tourism destinations competing for visitors. In this situation, a region needs to differentiate itself in order to attract new visitors by offering unique natural attractions or cultural experiences. A region with few competitors can be able to attract visitors simply by promoting the natural attractions and support services available, mentioned in interviews with experts from Annex 5.

During the author's organized expeditions, participants were observed to take more photographs around intentionally designed environments compared to fully authentic natural sites (Figure 41. Comparison *of human altered and fully authentic destinations (Annex 1-2).*. This suggests that architectural interventions in nature can act as focal points, attract visitors and encourage a wider range of photographic expression. Such environments support new tourism experiences and highlight the role of design in guiding attention and shaping how destinations are perceived. A complete record of images used in this research is provided in Annex 2, containing photo reports from the organized tours. From all organized expeditions the highest intensity of intentionally designed environments was measured along the East Coast of Taiwan with a large variety of sculptures tied to local folklore, tradition and cultural engagement, sand festivals and immersive art experiences that blend with natural landscapes making the long walks along the sometimes visually repetitive coastline more eventful creating a sense of surprise and reward, motivating you to continue exploring (Annex 1, 2)

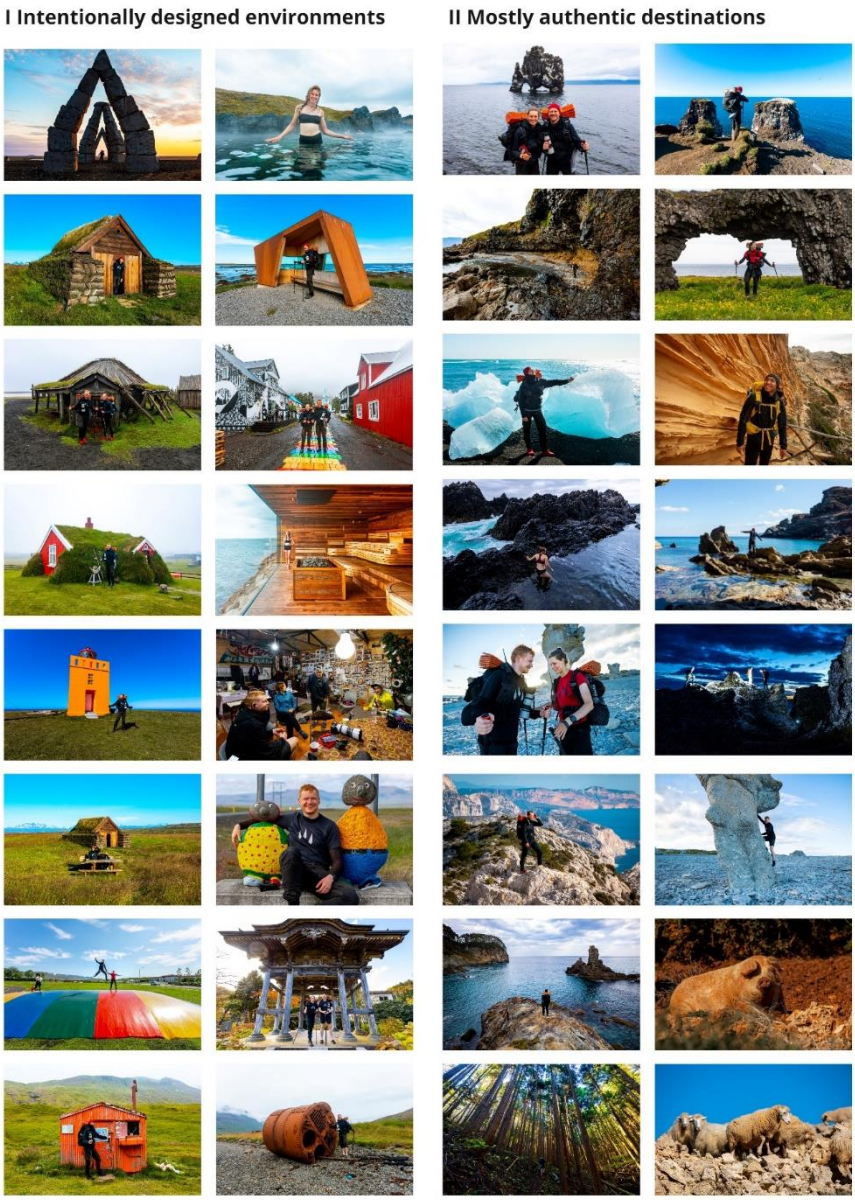

Figure 41. Comparison of human altered and fully authentic destinations (Annex 1-2).

As more developed countries are attracting more nature tourists with built environment as opposed to a limited amount of authentic natural destinations the current trends point towards nature tourism industry shift to city-based nature tourism. More and more people live in urban centres so travel to remote nature destinations outside of cities becomes less practical, time-consuming, and environmentally harmful. Additionally, growing environmental pressure is leading to increased restrictions on travel, which is forcing the industry to adapt and find new solutions, city-based nature tourism, that allows people to enjoy the benefits of nature without the need for long-distance travel. Notably, cities also seem to offer better access to investment and improved accessibility for people with disabilities or mobility issues. As a result, the future of nature tourism architecture is likely to focus on creating new marketable and accessible urban nature destinations that can provide visitors with a sense of connection to the nature, while also addressing the challenges posed by growing environmental pressure, leaving authentic destinations for trained nature lovers, researchers, and advanced educated consumers.

2. ROLE OF EXPERIENCE IN NATURE TOURISM ARCHITECTURE

The role of immersive experience in nature tourism architecture is closely tied to how spatial design shapes human engagement with natural environments. Architectural elements, sensory integration, material choices, and responsiveness to local climate conditions contribute to how visitors perceive and connect with the landscape. As nature tourism evolves toward deeper forms of engagement, the built environment serves as a mediator between the visitor and the ecological context. Examining how climate, materiality, and sensory design inform these environments helps clarify the architectural strategies that support experiential connections to place [53, 108, 138].

2.1. Immersive environments in nature tourism: The role of story, climate and materiality

Immersive environments in nature tourism play a crucial role in connecting visitors to nature through sensory experiences. Using architecture, materiality, and a calculated relationship with the local environment, nature tourism destinations can be designed to engage multiple senses and create a feeling of immersion, featuring buildings made from locally sourced materials that blend seamlessly into the surrounding landscape or walking paths that take visitors through a variety of ecosystems and habitats. The design of these environments can be planned to incorporate sensory experiences, sound of a nearby river or the smell of wildflowers in bloom thus engaging the senses, enhancing the visitor experience and fostering a deeper connection to nature. [11, 46, 121]. Successful nature tourism destinations are increasingly focused on creating immersive experiences for visitors, with the aim of promoting a deeper connection with the natural environment. The design and development of these destinations plays a crucial role in creating immersive experiences.

In this thesis climate zones have been adapted from industry-standard Köppen climate classification system The Köppen climate classification system is used by meteorologists and climatologists to describe and understand the Earth's various climate zones. In this work for clarification and better adaptability some of the climate zones have been combined for easier comprehension and distinction for architectural purposes. Focusing on organization system based on the characteristics of temperature and precipitation, rather than using the specific Köppen classification codes [24]. Climate zones, regions that are characterized by specific patterns of temperature, humidity, and precipitation. These patterns have a significant impact on the design and development of nature tourism destinations, as well as the sensory experiences of visitors. In tropical climate zones, high temperatures and high humidity can create a sense of warmth and moisture, which can be enhanced using materials and design elements that promote airflow and ventilation. In polar climate zones cold temperatures can create a sense of starkness and isolation, which can be used to create immersive experiences using materials and design elements that promote warmth and shelter. In addition to the direct effects of climate on sensory experiences, climate can also influence the types of natural elements and landforms that are present in each region. In tropical climate zones, lush vegetation and diverse wildlife are more prevalent, while in polar climate zones, ice and snow will dominate the landscape. Architects and designers can use these natural elements to create immersive experiences for visitors, incorporating them into the design of nature tourism destinations in a way that enhances the sensory experiences of visitors [9, 41]. In addition to

the direct effects of climate on sensory experiences, climate can also influence the types of natural elements and landforms that are present in each region. Designing for specific climate zones can present several challenges and considerations. In some cases, the climate conditions of a given region can be extreme or unpredictable, requiring designers to consider the durability and adaptability of materials and design elements. In addition to these practical considerations, architects and designers must also consider the sustainability and conservation of local ecosystems when designing for specific climate zones. This involves the use of materials and design elements that are sourced locally or that have a low impact on the environment, as well as the incorporation of features that promote the conservation of local flora and fauna [96, 105, 107].

Polar Climate is characterized by extremely cold temperatures, strong winds, and long winters with little to no daylight, creating a challenging environment for both habitation and tourism. In nature tourism destinations located in polar climates, architecture must be specially designed to withstand harsh conditions. Buildings often feature heavy insulation, double-paned windows, and durable construction materials to ensure warmth and energy efficiency. Additionally, these structures must account for snow loads and permafrost, while minimizing environmental impact. According to the Köppen climate classification system, polar climates are categorized as either "EF" (polar ice cap) or "ET" (tundra), indicating regions where temperatures rarely rise above freezing [96]. In this challenging environment, two standout architectural projects showcase how human creativity can thrive even in the most extreme conditions (Annex 7). The Cabin, designed by Swedish architects Cyrén & Cyrén, is located in the Arctic Circle, within the heart of Swedish Lapland. The minimalist design is both functional and luxurious, providing a cozy retreat in one of the coldest regions on Earth. Architects here focused on creating a structure that blends into the rugged landscape while ensuring that it could withstand the Arctic's extreme weather. The use of local materials, timber, combined with energy-efficient design elements like insulation and triple-glazed windows, allows the cabin to maintain warmth and comfort throughout the year. Guests are treated to spectacular views of the surrounding wilderness and can often witness northern lights, making the cabin a matching blend of modern architecture and natural beauty. The 7th Room, designed by Norwegian firm Snøhetta at Sweden's Treehotel is a remarkable feat of architecture and environmental design. Suspended high among the trees in the Harads Forest, the structure offers guests panoramic views of the Lule River. Built to minimize its footprint, the cabin is elevated off the ground, preserving the delicate forest floor beneath. Sustainability was a key focus in the design, with large windows allowing natural light to reduce the need for artificial heating during daylight hours. The structure is heavily insulated, and the materials used, predominantly timber, help it blend seamlessly with the natural surroundings. Architects also designed the space with comfort in mind, incorporating comfortable interiors and outdoor terraces where guests can enjoy the stunning polar landscape from the warmth of their room (Figure 42).

Figure 42. The 7th Room, Snøhetta, Sweden [Photo by Johan Jansson, Annex 7].

Temperate climate, characterized by moderate temperatures, typically found between the tropics and the polar regions, where the seasons are more distinct and vary from warm summers to cold winters. In nature tourism destinations located in temperate climates, architectural designs often need to accommodate a wide range of weather conditions, from mild to more extreme seasonal changes. This requires structures to be adaptable and comfortable throughout the year, incorporating features like efficient ventilation systems, ample natural lighting, and energy-efficient materials. Buildings in these regions often focus on sustainability, taking advantage of the climate's moderate conditions to reduce energy consumption while maximizing comfort for visitors. Two standout examples of nature tourism destinations in temperate climates demonstrate how architecture can balance functionality with environmental integration (Annex 7). Located in the Cappadocia region of Turkey, *Göreme National Park* is a UNESCO World Heritage site known for its dramatic landscape of rock-cut architecture and ancient cave dwellings. Although the exact architects of these structures are unknown many were shaped by early Christian monastic communities these dwellings are marvels of sustainable, climate-responsive design. The caves, carved directly into volcanic rock, naturally regulate temperature, staying cool in summer and warm in winter, an early example of passive climate control. The region’s temperate climate allows these historic structures to persist without significant intervention, blending cultural heritage with the natural landscape. Visitors are drawn to Göreme for its history and the chance to explore its cave churches and monasteries[2]. Nestled in China’s Wuling Mountains, *Mount Fanjing* is also a UNESCO World Heritage site. The local environment of Wuling Mountains requires buildings that can withstand fluctuating conditions. Although no single architect is credited with the design of the ancient temples perched atop Fanjing’s peaks, their construction reveals a deep understanding of the environment. The temples are built using traditional materials, stone and timber, integrating seamlessly with the mountainous terrain. The moderate climate allows for the preservation of these ancient structures, and the site is known for its magnificent views and its tranquil, meditative atmosphere. The location’s dramatic cliffs and natural beauty draw visitors seeking spiritual solace and the chance to experience one of the world’s most extraordinary architectural and natural wonders (Figure 43).

In the temperate climate, architecture must balance between adapting to seasonal changes and maintaining harmony with the natural landscape. Architecture in temperate regions is defined by its versatility and seamless integration with the environment. Both sites attract visitors who seek to connect with nature and history while enjoying the comfort of designs that are well-suited to the variable climate.

Figure 43. Mount Fanjing, China (Annex 7).

Dry Climate is defined by low levels of precipitation, often found in arid or semi-arid regions where extreme temperatures and dryness pose challenges for both habitation and tourism. In nature tourism destinations located in these climates, architectural designs prioritize water conservation, heat protection, and overall sustainability. Structures incorporate features like shading devices to minimize solar heat gain, water-saving fixtures to preserve scarce resources, and drought-resistant landscaping that blends with the natural environment. Materials are chosen for their thermal efficiency, and buildings are designed to create cooling airflow, offering refuge from the hot, dry conditions. Moni Timiou Monastery, located on the island of Naxos in the Cyclades, Greece, is an orthodox sanctuary that sits in a dry, rugged landscape. Design of the monastery is a fitting example how architecture can adapt to arid conditions. The stone construction, with its thick walls, provides natural insulation from the heat, keeping the interior cool during the day and warmer at night. The building's high elevation allows for natural ventilation. The surrounding landscape, further enhances the monastery's harmonious relationship with its dry environment. Visitors come for spiritual reflection and to admire the way the monastery blends seamlessly into the harsh yet beautiful landscape of Naxos. Choquequilla Inca Huaca in the Sacred Valley of Peru is an example of how ancient Inca architecture adapted to the dry Andean environment. This inca ceremonial site, dedicated to moon worship, demonstrates the Inca's advanced understanding of engineering and sustainability. While the specific architects are unknown, the site reflects the Inca's mastery of stone masonry, with precisely cut stones that required no mortar, allowing the structure to withstand earthquakes. The terraces built around the site serve as agricultural platforms and help conserve water and prevent erosion. The site's design ensures that water from seasonal rainfall is captured and stored efficiently, demonstrating a sophisticated approach to resource management. Visitors to Choquequilla appreciate the way the ruins blend into the landscape. (Figure 44). Located in the Utah desert, USA, Amangiri Resort is a modern example of how contemporary architecture can thrive in arid environments. Designed by architects Marwan Al-Sayed, Wendell Burnette, and Rick Joy, the resort integrates seamlessly with the dramatic desert landscape, using local stone and concrete to blend with the natural surroundings. The architecture prioritizes sustainability, with buildings oriented to maximize shading and minimize heat exposure. Extensive use of thermal mass helps keep the interiors cool, while large windows offer panoramic views of the stunning rock formations, connecting guests to the environment without compromising comfort. In dry climates, architecture must be resource-

conscious and adapted to the environment's extreme conditions. Amangiri Resort, Moni Timiou Monastery, and Choquequilla Inca Huaca highlight the evolution of architectural strategies in dry climates. From ancient methods of stone construction and water conservation to modern techniques that emphasize energy efficiency and sustainability, these examples show how architecture can rise to meet the challenges of arid environments while offering guests a deep connection to the landscape.

Figure 44. Choquequilla Inca Huaca, Peru [Photo by Greg Willis, Annex 1].

Tropical climate brings high temperatures, abundant rainfall, and high humidity. Found near the equator, this climate experiences lush vegetation and a rich diversity of wildlife. In nature tourism destinations located in tropical climates, architectural designs address the need for ventilation, protection from heavy rainfall, and resistance to humidity. Common elements include large overhangs or verandas to provide shade, open-air designs to encourage natural ventilation, and the use of materials that resist moisture and decay (Annex 7). Located on Pemba Island, Tanzania, The Manta Resort is a luxury eco-resort that embraces the local tropical environment. Developed by Genberg Underwater Hotels, its most famous feature is an underwater room submerged in the Indian Ocean, where guests can sleep while watching marine life swim past their windows. Above water, the resort's open-air design and use of locally sourced materials create a seamless connection between the building and its surrounding tropical landscape. The resort incorporates sustainable practices, rainwater harvesting, solar power, and a focus on reducing environmental impact. The use of large windows, wide verandas, and open spaces allows for natural cooling, reducing the need for artificial air conditioning (Figure 45). One of the most famous examples of tropical architecture is Geoffrey Bawa's Kandalama Hotel in Sri Lanka. Known for pioneering the "tropical modernism" style, Bawa designed the hotel to integrate almost invisibly into the surrounding jungle, with the structure appearing to rise out of the forest itself. Built with natural materials and designed to blend into its environment, the Kandalama Hotel is a paragon of sustainable tropical architecture. Open-air corridors and large windows take advantage of cooling breezes, while the hotel's energy-efficient design minimizes its environmental footprint. Its terraces and infinity pools look out over the vegetation rich landscape, including views of the ancient Sigiriya Rock Fortress, providing a connection to both nature and the cultural heritage of the region. The hotel is designed to capture rainwater, and wastewater is recycled, highlighting its sustainable approach in the tropical setting.

Figure 45. The Manta resort, Mikael Genberg, Zimbabwe [Photo by The Manta resort, Annex 7].

Marine climate synonymous with mild, temperate conditions, relatively cool summers and wet winters. Typically found along coastal regions, marine climates benefit from the moderating influence of nearby oceans, which help regulate temperature and humidity. In nature tourism destinations located in marine climates, architectural designs must account for moisture, salt air, and the need for energy efficiency in environments where temperature fluctuations can be less extreme, but dampness and wind can be challenges. Buildings often incorporate durable materials resistant to corrosion, wide windows for capturing views of the water, and sustainable practices to protect the delicate coastal ecosystems [114]. Located in Denmark's Gisselfeld Klosters Forest, Camp Adventure Tower is a spiral observation structure designed by the Danish architectural firm EFFEKT. The tower rises 45 meters above the surrounding forest, offering visitors panoramic views of the countryside in a marine-influenced climate. Built using sustainable materials like weather-resistant Corten steel and locally sourced oak, the structure integrates seamlessly into the natural environment. The tower's open-air design allows visitors to experience the coastal climate of the region while taking advantage of natural airflow. The spiral walkway provides easy accessibility, welcoming people of all abilities to enjoy the forest canopy in a unique, eco-friendly way. The architecture emphasizes minimal environmental disruption while enhancing the outdoor experience, which is characteristic of design in marine climates (Figure 46).

Figure 46. Camp Adventure Tower, EFFEKT, Denmark [Photo by Rasmus Hjortshoj, Annex 7].

Situated near the coast in Aarhus, Denmark, Moesgaard Museum, designed by architectural firm Henning Larsen. The museum's roof is covered with grass, sloping down into the landscape to create a green extension of the surrounding countryside. This eco-friendly design helps with temperature regulation and insulation and reduces the visual impact on the

natural environment. The use of materials like timber and stone helps the building withstand the damp, marine climate while maintaining a harmonious aesthetic with its coastal location. The large windows allow for natural light to flood the interior and offers visitors sweeping views of the sea. A famous example of marine climate architecture is Louis Kahn's Salk Institute for Biological Studies in La Jolla, California. Overlooking the Pacific Ocean. A modernist masterpiece, designed to maximize the spectacular coastal views and the benefits of the mild, marine climate. The use of durable concrete and teak wood, materials that age gracefully in salty, humid environments, ensures the building's longevity despite its proximity to the ocean. The structure is oriented to harness natural light and airflow, reducing the need for artificial cooling and heating. Kahn's design also incorporates wide, open courtyards that frame views of the Pacific, blurring the boundary between indoor and outdoor spaces. In marine climates, architecture is shaped by the need to protect against moisture, salt and mild temperatures of coastal environments. From the eco-conscious design of Camp Adventure Tower and Moesgaard Museum to the iconic modernism of The Salk Institute, marine climate architecture can create spaces that are sustainable and deeply connected to the surrounding landscape. Each structure enhances the visitor experience by offering scenic views, utilizing natural light and ventilation, and preserving the delicate balance between human intervention and the natural environment.

Highland Climate, known as alpine or mountainous climate, is characterized by cooler temperatures, with temperature decreasing as elevation increases. Highlands feature a wide range of weather conditions, often with cold winters, cooler summers, and significant temperature variation between day and night. The architecture in nature tourism destinations located in highland climates must be designed to endure rugged terrain, high winds, and colder temperatures. Common features include steeply pitched roofs to prevent snow buildup, thick insulation, and materials that provide thermal efficiency. Sustainability and minimal environmental disruption are key considerations, as these regions are often remote and ecologically sensitive. Perched on the cliffs of the remote Zanskar Valley in northern India, Phugtal Monastery is one of the most isolated Buddhist monasteries in the world. Built in the 12th century, the monastery is a marvel of traditional highland architecture, designed to survive in harsh, high-altitude conditions. The structure is literally carved into the cliffside, using natural stone and mud brick for construction, which provides excellent insulation against the extreme cold. The monks live in caves and structures built into the mountain, with a layout that maximizes natural warmth from the sun while minimizing exposure to the cold winds. The monastery's construction is an extraordinary example of how architecture can adapt to one of the most challenging highland climates. Visitors brave difficult terrain and cold weather to reach the monastery, where they are rewarded with stunning views and a profound sense of spiritual isolation in harmony with the mountains. The monastery provides guest hotel nearby. During our visit in atumn of 2018 the precarious location was highlighted by quite a hard trek up and down the mountainous trail, completable only on foot, emphasizing the experience of remoteness (Annex 1-2, 7).

Figure 47. Alpine trail to Phugtal Monastery 2018, India
[Photo by Author, Annex 1-2, 7]

Designed by Miller-Roodell Architects, The Bunker is a modern highland retreat located in Big Sky, Montana, USA. This private residence showcases how modern architecture can thrive in a highland climate, combining rugged mountain living with contemporary design. Built to withstand Montana's harsh winters, the structure features thick, thermally efficient walls and large windows that offer sweeping views of the surrounding wilderness while maintaining warmth and energy efficiency. Efficient use of natural materials, stone and timber allows the building to blend into its alpine environment, while steep roofs prevent snow buildup during the long winter months. The design emphasizes sustainability and energy efficiency, incorporating high-performance insulation and renewable energy systems. Guests enjoy both the comfort of modern luxury and the raw beauty of the highland landscape, creating an ideal escape from the urban environment (Figure 48) (Annex 7).

Located in the Elqui Valley in Chile's Andes Mountains, Elqui Domos is a unique astronomy-themed hotel designed to take full advantage of the clear highland skies for stargazing. Built at an elevation of over 1,000 meters, the hotel's geodesic domes and cabins are designed for minimal environmental impact while providing warmth and comfort in the chilly highland climate. The domes are constructed from weather-resistant materials and feature large skylights, allowing guests to gaze at the stars from their beds. The steep terrain and cool night temperatures required architects to carefully consider both insulation and accessibility. Passive solar heating is used to maintain warmth, and the structures are built to optimize natural ventilation. This eco-friendly design suits the highland climate but also enhances the natural experience of the guests, who visit primarily for the spectacular views of the Andean night sky (Annex 7).

The Bivouac Shelter Designed by OFIS Architects is located in the Julian Alps of Slovenia, an area known for its rugged highland climate and extreme weather conditions. The small shelter is positioned on a remote mountain slope, accessible only to climbers and hikers. The design of the shelter focuses on simplicity and resilience, using prefabricated wood and steel to create a structure that can withstand high winds, snowfall, and temperature extremes. Its compact, triangular form minimizes exposure to the elements, while the insulated panels and solar power system ensure energy efficiency in this challenging environment. The Bivouac Shelter is an fitting example of how contemporary highland architecture can provide both functionality and protection in extreme conditions. It offers adventurers a safe and sustainable refuge during their mountain expeditions (Annex 7). In highland climates, architecture must contend with cold temperatures, harsh winds, and often difficult terrain. From the ancient, cliff-carved Phugtal Monastery to modern structures like The Bunker and The Bivouac Shelter, its

perceivable how design in mountainous environments is both a challenge and an opportunity for creative, sustainable solutions. Whether using traditional materials and techniques or incorporating cutting-edge technologies, architecture in highland climates harmonizes with the landscape to offer warmth, comfort, and protection while preserving the beauty and fragility of these remote environments.

Figure 48. The Bunker, Miller-Roodell Architects, The United States [Photo by Dook, Annex 7].

Climate influences the landscapes, ecosystems, and biodiversity that form the essence of nature tourism destinations. It dictates the types of vegetation, wildlife, and natural phenomena that visitors seek to experience, the blooming of cherry blossoms in Japan or the northern lights in Scandinavia. Architects and designers must therefore create structures and experiences that withstand local climatic conditions and harmonize with them using sustainable materials suited to the region, incorporating passive heating or cooling systems, and designing for optimal natural light and ventilation. According to the destinations selected from Annex 7, temperate zones dominate nature tourism destinations, with 293 occurrences, reflecting their balanced seasons and suitability for a wide range of activities like hiking, cycling, and seasonal festivals. Marine climates follow with 219, emphasizing coastal proximity and mild conditions that encourage open-air, sea-oriented architecture and extended use seasons. Dry climates (81) and tropical regions (67) support specialized approaches, where in dry zones, heat mitigation, shade structures, and water are leading factors shaping the built environments. In tropical areas, ventilation, elevated walkways, and flood-resilient materials are essential for navigating dense rainforests and river landscapes. Less frequently represented, but equally significant are polar (58) and highland (27) zones. In these harsher environments, architecture must contend with extremes insulation, wind protection, and durable materials become non-negotiable, while the design often prioritizes compact, thermally efficient forms that retain warmth and resist moisture. The correlation between climate and local environment creates distinct tourism ecosystems. Seasonal changes further intensify this relationship altering vegetation, wildlife activity, and access, shaping when and how tourism activities take place. Each climate-local environment pairing generates its own immersive framework, reinforcing how experiential nature tourism is influenced by this interdependence.

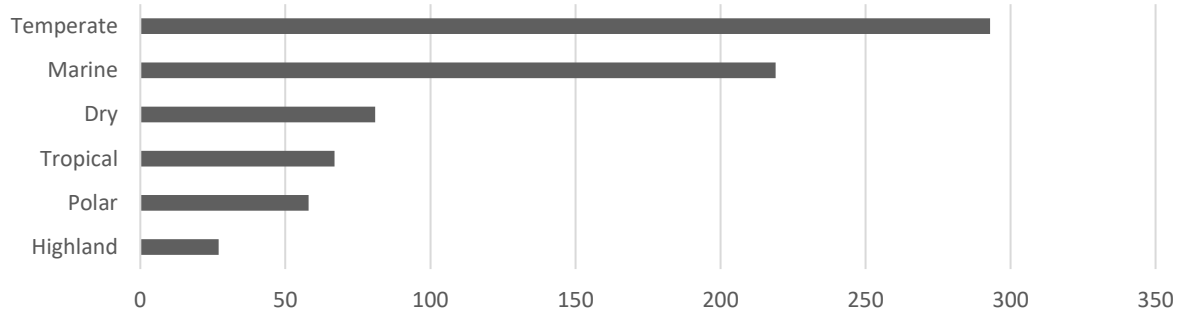

Chart 4. List of climate zones featured on selected destinations from Annex 7.

Natural materials, wood, stone, bamboo, and earth are highly effective at creating immersive environments that feel organic and connected to the landscape. With 348 mentions, this is the most frequently mentioned type of materiality in nature tourism, particularly in nature-focused projects. Projects realized by La Cabane Perchée show good example on tourist attraction through materiality, specializing in treehouses that merge seamlessly into forested surroundings. Often using locally sourced wood and natural stone blended with the colours and textures of the environment. Evoking a sense of place and making visitors feel like they are part of the natural landscape rather than outsiders. This helps foster a deep emotional connection with the environment, a critical element in nature tourism, where the goal is often to provide an escape from urban life. Bourgeois Lechasseur Architects and Saunders Architecture also extensively use natural materials in their designs, focusing on projects that integrate rugged landscapes, mountains and coastal environments. Natural materials, when carefully chosen and crafted, can give structures a timeless and authentic feel. Visitors tend to react positively to this approach, providing comfort and a tactile connection to nature. For instance, wood interiors can evoke warmth and serenity, while stone facades can reflect the solidity and permanence of the surrounding geology (Annex 7).

Processed natural materials, including concrete, adobe, plaster, and plywood, are also prominent in nature tourism architecture, with 166 mentions from researched destinations (Annex 7). These materials provide structural versatility and can be shaped to fit contemporary architectural designs that still reference the natural world. La Cabane Perchée again leads in this category, using processed materials in conjunction with natural ones to create structures that feel both modern and organic (Figure 49). This combination allows for designs that are more flexible and adaptive to the unique challenges of building in remote or difficult terrain, mountainous areas or forests. Architects like Amey Kandalgaonkar and Studio MK27 are known for using concrete and other processed materials to create minimalist designs that contrast yet complement the surrounding landscape. Concrete can mimic the raw textures of stone cliffs or desert environments while offering durability and low maintenance. Visitors often appreciate how these materials, while modern, still maintain a connection to nature through their texture and form. Processed natural materials allow for sleek, modern forms that don't overwhelm the landscape but instead emphasize its beauty. This enhances the immersive experience by framing nature as a central component of the architecture, rather than something separate from it [136] (Annex 7).

Figure 49. The Giraffe Feeder, La Cabane Perchée, Belgium [Photo by La Cabane Perchée, Annex 7].

While metals like steel, aluminium, and corten steel, featured in 89 destinations, are less common in nature tourism, their use can create dramatic, immersive environments that feel cutting-edge. Architect Olson Kundig, known for innovative use of industrial materials in natural settings, uses metals to create bold, minimalist structures that can stand out in sharp contrast to their surroundings while still feeling harmonious with the environment. Metal structures, with their clean lines and industrial aesthetic, are often used to create a sense of modernity and innovation. This can appeal to visitors seeking a unique, forward-thinking experience that challenges traditional notions of nature-based architecture. Metal's reflective qualities also enhance the natural environment by mirroring the landscape, creating an interplay between the built and natural worlds. Corten steel, which develops a rust-like patina over time, can blend with earthy tones in desert or forest landscapes, making structures feel like they are gradually becoming part of the environment. Gracia studio has similarly explored this balance between modernity and nature, using metals to create visually striking structures that interact with lightand landscape in unique ways (Figure 50). For visitors, metal constructions often symbolize strength and resilience, adding a futuristic element to the nature tourism experience.

Figure 50. Encuentro Guadalupe, Graciastudio, Mexico [Photo by Luis Garcia, Annex 7].

Glass and other modern materials like fiberglass and thermal glass, featured as primary materials in 17 cases are used to create immersive environments that emphasize transparency and light. Firms like Leapfactory, Pirinen & Salo, and Emma Strömberg employ these materials to design structures that appear almost invisible in their surroundings, blurring the boundaries between inside and outside. Glass walls allow for panoramic views, giving visitors a continuous

connection with the landscape, whether it's a forest, mountain range, or coastline. Glass structures help create a serene, contemplative experience by allowing the environment to flow seamlessly into the living spaces. Visitors often respond positively to the openness and sense of lightness that glass imparts. For example, cabins or pavilions with large glass windows provide uninterrupted views of natural scenery, creating an immersive experience where the landscape becomes a part of the architecture (Figure 51). However, glass also adds a modern, almost futuristic aesthetic that can sometimes feel more detached from the earthiness of natural materials. Despite this, in nature tourism, glass structures are celebrated for their ability to highlight the beauty of the surroundings, making them a good match for environments where the landscape is the core attractor for nature tourists (Annex 7).

Figure 51. Leaprus 3912, Leap Factory, Russia [Photo by LEAPfactory, Annex 7].

Sustainable and recycled materials mentioned as primary materials in 17 cases are gaining importance in nature tourism architecture as environmental sustainability becomes a core concern for new projects. Architects like Antony Gibbon and Practice Architecture lead the way in using materials like recycled wood, bioplastic, and hemp bricks to minimize environmental impact, helping create immersive environments that are aesthetically connected to nature and ethically aligned with ecological values. For visitors, knowing that a structure has been built with sustainability in mind can enhance their overall experience, as it aligns with a growing desire for responsible tourism that supports environmental conservation. Recycled materials often lend a rustic, handcrafted feel to buildings, making them seem more in tune with their surroundings. Recycled wood or natural fibres can relate to a sense of history and continuity with the landscape and reduce the carbon footprint of the construction. Structures made from sustainable materials are often smaller in scale further immersing visitors in nature. Focus on sustainability appeals particularly to eco-conscious tourists, who value architecture that reflects a commitment to preserving the environment they are visiting. Immersive environments in nature tourism play a pivotal role in enhancing visitors' connections to nature by engaging multiple senses (Figure 52), (Annex 7).

Figure 52. Flat House, Practice Architecture, The United Kingdom
[Photo by Oskar Proctor, Annex 7].

Through thoughtful architectural design, material selection, and a deliberate relationship with the local environment, nature tourism destinations can be crafted to offer deep sensory engagement, using locally sourced materials and building designs that seamlessly blend with the landscape, or incorporating natural sounds, sights, and smells, the rustling of trees or the fragrance of wildflowers, can significantly enhance the immersive experience. A critical factor in shaping these experiences is the local climate, which influences the design and dictates the types of vegetation, wildlife, and natural phenomena that visitors can encounter. Climate-specific architectural solutions, sustainable materials, passive climate control systems, and designs that maximize natural light and ventilation, are essential for creating environments that both withstand and harmonize with local conditions. For example, in tropical climates, open designs and materials that promote ventilation are key, while in polar regions, buildings must prioritize insulation and energy efficiency to cope with extreme cold. Each climate zone whether polar, temperate, dry, tropical, marine, or highland presents unique challenges and opportunities for creating immersive experiences. The interdependence between climate and materiality is particularly significant, as architects and designers must carefully select materials that function well in the given climate but also contribute to the overall sensory experience. Natural and locally sourced materials are often favoured for their sustainability and ability to evoke a sense of connection to the natural surroundings.

Materiality Type	**Examples**	**Count**
Natural Materials	Earth, Volcanic Rock, Stone, Wood, Bamboo, Brick, Local rock, Sandstone, Granite, Limestone	348
Processed Natural Materials	Concrete, Cement, Adobe block, Burnt larch wood, Plaster, Glulam, OSB, Plywood, Thermowood	166
Metals	Metal, Aluminium, Steel, Corten steel, Stainless steel, Galvanised steel, Iron	89
Glass and Modern Materials	Mirrored glass, Glass, Fiberglass, ETFE, Smart glass, Thermal glass, Polyester	17
Sustainable and Recycled Materials	Recycled wood, Bio-plastic, Recycled soda bottles, Hemp bricks, Recycled materials	11

Table 1 List of Material types from selected destinations from Annex 7, M.Babris

Materiality plays a crucial role in shaping the function and aesthetic of architectural spaces, significantly influencing how visitors perceive and experience a structure. As seen in the dataset *Table 1*, The role of experience in modern nature tourism architecture is increasingly

important. As the nature tourism industry continues to grow and evolve, the design and development of nature tourism destinations is increasingly focused on creating immersive and engaging experiences for visitors. One key aspect of the role of experience in nature tourism architecture is the use of sensory experiences to enhance the overall visitor experience. Sensory experiences, like the use of sound, light, and scent, can create a sense of immersion and connection with the natural environment. The incorporation of natural materials can also contribute to the sensory experience of nature tourism as well as use of immersive environments to engage the senses and promote a sense of connection with nature. This can involve the use of technology to create immersive experiences that allow visitors to explore the natural environment in new and exciting ways. In addition to sensory experiences and immersive environments, the role of experience in nature tourism architecture also includes the use of experiential marketing to promote the unique and engaging nature of nature tourism experiences involving the use of storytelling, social media, and other marketing strategies to showcase the unique and immersive qualities of nature tourism destinations.

Interaction between climate, architecture, and materiality shapes the immersive qualities of nature tourism destinations. By creating spaces that are attuned to their environmental context, architects and designers can foster a deeper connection between visitors and the nature, enhancing both the environmental sustainability of these destinations and the overall visitor experience. This approach improves visitor engagement and promotes conservation and a deeper appreciation for natural ecosystems.

2.2. Designing for experiences to connect with the local environments

The sensory experiences in popular local environments are shaped by the unique combination of natural elements and their influence on the visitor’s perception. For instance, coastal environments, like the project at Cabot Shores in Nova Scotia, designed by Paul Hawman, provide an immersive experience defined by the rhythmic sounds of the ocean, the scent of salty sea air, and the tactile feel of soft sand or rugged coastal rocks. This environment fosters a sense of openness and tranquillity, making it ideal for activities like beach exploration or kayaking, where the sensory elements heighten the experience. In forested environment like in Baumraum's Treehouse in Germany, designed by Andreas Wenning, the sights, smells, and sounds of dense foliage create a feeling of being enveloped by nature. Visitors here engage with the earthy scent of wet leaves, the sound of rustling trees, and the vibrant greenery. The experience is both calming and lively, drawing tourists into the depths of the forest for hiking, wildlife observation, or simply enjoying the serenity of the woods (Figure 53). Mountainous environments offer a starkly different sensory experience, as seen in Zinc House in Norway, designed by Carl-Viggo Hølmebakk. The visual landscapes of towering peaks, the crisp cool air, and the tactile interaction with rocky paths and steep terrain evoke feelings of adventure and awe, ideal for activities like trekking or climbing, where the challenges of the terrain enhance the physical and emotional engagement with the surroundings [23, 142].

The interaction between sensory experiences and local environments plays a crucial role in shaping how travellers perceive and connect with natural landscapes. Each environment offers a distinct combination of sights, sounds, smells, and textures that collectively define a visitor's experience. In nature-based tourism, the richness of these sensory inputs enhances the immersion, making the experience memorable and transformative.

Figure 53. German Tree House, Baumraum, Germany [Photo by Baumraum, Annex 7].

Sight is often the first and most impactful sense engaged in nature tourism. The visual diversity of different environments, from towering mountains to serene beaches, dense forests to vast deserts creates a lasting impression impacted by the colours, forms, and scale of a landscape. The vibrant greenery of a tropical rainforest or the sweeping vista of a coastal region offers a dynamic visual experience that can draw visitors into the environment [33, 101, 140]. Each environment has its own soundscape, which can significantly impact a visitor's experience. The rustling of leaves in a forest, the crashing of waves on a shore, or the silence of a remote desert all contribute to the immersive quality of nature. Soundscapes also communicate important information about the ecosystem, the presence of wildlife or changing weather conditions. Bird calls and flowing rivers can enhance the sense of serenity in a woodland setting, while the sounds of wind across a desert or the call of distant wildlife can add to the feeling of isolation in arid landscapes [37].

Smell is closely linked to memory and emotion, making it a powerful component of nature-based tourism. Different local environments offer distinctive smells that can deepen the sensory experience. In coastal environments, the scent of saltwater and marine life can evoke a feeling of freedom and openness, while in a forest, the earthy smell of moss, pine, or wildflowers brings a sense of freshness and life. These olfactory experiences can transport visitors back to specific moments, making their connection to the place more personal and emotional [27]. The tactile experience involves physical interaction with the environment, whether through touch or movement. Walking barefoot on soft sand, feeling the rough bark of a tree, or the cool spray of a waterfall creates a deeper sensory engagement. These tactile moments allow tourists to form a direct, physical connection with the environment, enhancing their sense of presence and grounding them in nature [63, 96].

Immersive sensory experiences are central to the Treetop Walk Black Forest, where visitors are enveloped by the sights, sounds, and textures of the forest canopy. Elevated up to 20 meters above the ground, the 1,250-meter-long wooden walkway goes through fir, beech, and spruce trees, culminating in a 40-meter-high observation tower that offers panoramic views of the Black Forest and on clear days, the Swiss Alps. Interactive learning stations along the path engage multiple senses: visitors can touch various textures of bark and leaves, inhale the rich scents of the forest, and listen to the sounds of local wildlife, fostering a deeper connection to the ecosystem. The design prioritizes accessibility, featuring a maximum gradient of 6% and no steps, ensuring that individuals using wheelchairs, walkers, or strollers can comfortably navigate the path. During authors visit in March 2025, these thoughtfully integrated sensory

experiences, combined with the inclusive design and the unique perspective offered by the elevation, exemplified how built environments can offer an interactive and accessible solution for a engaged connection with nature.

Figure 54. Interactive educational forest flora and fauna display with elements of touch and scent attributes at Treetop Walk, Black Forest. Screenshot from Annex 3, March 2025.

Designing for experiences that connect with local environments is a central principle in nature-based tourism architecture. The architecture in these settings is shaped by the surrounding environment and is deeply influenced by the types of activities and experiences offered to visitors. Careful integration of buildings into landscapes and the use of a can create spaces that enhance the visitor experience while preserving the natural surroundings. Location-oriented design plays a crucial role, where the landscape, climate, and proximity to natural features like water dictate both aesthetics and function. Understanding topography helps position structures to maximize views and minimize environmental impact. Similarly, bodies of water or forests offer opportunities for water-based activities or immersion in nature, shaping how structures are designed to blend with or stand out from their surroundings. Human Interaction and accessibility are key factors in ensuring that natural environments can be enjoyed by a wide range of visitors. From secluded, minimalist cabins to larger installations in high-traffic tourist areas, the intensity of tourism influences the degree of development. Ensuring that everyone, regardless of ability, can engage with the nature is a critical consideration in the design of pathways, footbridges, and other access points. The nature-based activities offered in these environments, like hiking, kayaking, or cultural events further dictate the design principles and material choices. Adventure tourism may call for portable, lightweight structures, while wellness retreats might feature organic forms and materials like wood and stone to create calming, serene spaces. The sensory experience sight, sound, smell, and touch play a crucial role in shaping the visitor's connection to the local environment.

The sound of waves at a coastal site or the smell of pine in a forest, sensory elements deepen the visitor’s immersion, making the experience more memorable. Successful nature-based tourism architecture balances design, functionality, and sustainability, ensuring that the structures serve the needs of visitors and respect and enhance the natural surroundings. By considering location, activities, accessibility, and materials, architects can create spaces that foster meaningful connections with the nature. This interrelationship between place, activity, and design is crucial in crafting impactful and memorable nature tourism experiences. Nature-

based tourism architecture is deeply shaped by the types of experiences it aims to offer, which are often driven by the surrounding environment, the interaction with nature, and the activities designed for visitors. The architectural design, functionality, and material choices are influenced by both the desire to enhance the visitor's experience and the need to preserve the natural surroundings. This connection is evident in various aspects, the location, accessibility, and the specific natural elements integrated into the architecture

The organisational chart based on analysed materials from Annexes 4-5 and 7 visually organizes the core elements involved in nature-based tourism architecture, dividing them into several interconnected branches. This breakdown provides a more systematic approach to understanding how different factors contribute to the overall experience at these locations emphasizing the importance of location, natural surroundings, and the activities designed for visitors. The first major branch focuses on Location Oriented elements, which includes various sub-categories, landscape, climate, local environment, and topography. These categories reflect how the natural surroundings dictate the aesthetic of the architecture and its function and relationship with nature. In case of topography, whether the site is on a hill, plain, or escarpment, determines how the structures are positioned to maximize views or minimize environmental impact. The bodies of water present, lakes, rivers, and their proximity to the site, can influence the design's integration with natural features. Locations adjacent to water may highlight water-related activities or create elevated structures to manage seasonal changes like flooding (Figure 54).

Interaction Modifiers highlight how design elements in nature tourism destinations influence the visitor experience and accessibility. Human impact levels in nature tourism destinations, as outlined in Annex 7, show a clear tendency toward sustainability and minimal disturbance. The most frequent designation is low human impact (331), followed by medium (273), while high impact (174) and minimal impact (52) are less common. This suggests that most sites are developed with careful consideration of environmental balance, aligning with broader goals of ecological preservation. Interaction Modifiers further reveal how design and infrastructure mediate visitor engagement. The most frequently featured accessibility feature is stairs (394), indicating their prevalence in terrain navigation. However, more inclusive options like ramps (24) and elevators/lifts (16) remain rare, suggesting that full accessibility is still underdeveloped. Footbridges (11) and boat access (10) illustrate some experiential approaches to reaching remote sites. Accessibility is closely tied to tourism intensity, where the vast majority of destinations are categorized as private (438), requiring less infrastructure than high (43) or overtourism (16) settings. Regarding monetisation models, time-based pricing (290) leads by a wide margin, ahead of admission fees (123), signalling a preference for flexible, duration-oriented revenue mechanisms. These models are further explored in Chapter 3.3. Monetisation and integration of sustainability principles, which examines how economic models align with environmental and social responsibility. Basic amenities, indoor toilets (319), kitchens (300), and bedrooms (285) are commonly offered, while luxury features like pools (94) or fireplaces (141) are less frequent. In terms of sanitation, private WCs (433) and indoor WCs (376) significantly outnumber shared or outdoor options, reinforcing visitor preferences for personal comfort. These dominant attributes reflect a tourism model prioritizing low-impact, semi-private experiences with a baseline of convenience, supporting sustainable tourism while maintaining visitor satisfaction.

Nature-based experiences are closely shaped by the surrounding environment, with each landscape attribute influencing the type of architectural response. The most frequent integration category is adjacent to nature (638), indicating that many destinations are sited on the edge of

natural environments rather than fully embedded within them as outlined in Chapter 1.2. Integration of natural elements and landforms in nature tourism destinations. In terms of topography, plains (344), hills (213), and coastal areas (181) dominate, aligning with activities like hiking, swimming, or cycling, which require broad or undulating terrains. Bodies of water are most often distant (456), although lakes (129) and seas (120) also appear frequently, supporting water-related tourism like kayaking or lakeside camping. The landscape is typically forest (313) or urban (151), suggesting that natural and semi-developed areas host a large share of nature tourism destinations. In terms of climate, temperate (293) and marine (219) zones are the most common, providing conditions favorable for year-round use and diverse programming of outdoor activities. Regarding local environments, nature tourism facilities are most often located near cities/towns (150), forests (124), or mountain/hill areas (131), where a balance between accessibility and immersive nature can be maintained. Prominent natural features include plains (131), slopes (116), and coastal/river banks (75), which often call for adaptable infrastructure, temporary shelters or lightweight observation decks to accommodate outdoor sports and educational programs. Finally, use of materials reflects both ecological and functional concerns: wood (323) is the most common, followed by concrete (173) and metal (115), with limited presence of recycled materials (3). This material palette reflects a tendency toward natural finishes with durable, low-maintenance components suitable for semi-permanent or seasonal structures. Together, these attributes demonstrate how architectural responses are tailored to the activity, climate, and terrain be it lightweight shelters in forests for hikers, or more formalized gathering spaces near towns for guided educational events.

Architectural elements in nature tourism destinations, as categorized in Annex 7, are closely aligned with functional use, design logic, and context-driven typologies. The most common functions are related to accommodation (210), including hotels (137), holiday homes (100), and Airbnb-style lodgings (41), reflecting a strong emphasis on overnight or extended stays within natural settings. Beyond lodging, tourist attractions (44), community spaces (27), and smaller categories like viewpoints (21), museums (23), and restaurants (22) illustrate a range of cultural, recreational, and educational uses integrated into the natural landscape. In terms of design principles, a clear visual language emerges. Highly recurring concepts, white space (263), pattern (257), symmetry (246), and repetition (236) point to a preference for clarity, visual rhythm, and structured form. Meanwhile, elements like contrast (193), colour (137), and asymmetry (68) introduce variety and vibrancy to the user experience. Less frequent but still significant are principles like sculpting (47), organic design (31), and utilitarianism (23), often employed to reflect either natural fluidity or practical simplicity depending on the destination's purpose and setting. The most frequently used building types are cabins (171) and traditional houses (153), reinforcing the importance of modest, familiar architectural forms in natural environments. These are complemented by more novel structures, tree houses (68) and villas (47), which cater to visitors seeking immersive or upscale experiences. Large-scale or mobile structures, shelters (9), tents (12), and apartment buildings (8) appear much less often, indicating a focus on permanence and individual character rather than mass accommodation. The use of materials underscores both contextual sensitivity and practical choice. Wood (323) is the dominant material, offering a tactile, sustainable, and regionally adaptable solution. Concrete (173) and metal (115) follow as key structural and finishing materials, likely valued for their durability. Natural and expressive elements like glass (69), stone (51), and natural materials (41) enhance the sensory connection to surroundings. However, recycled materials (3) remain marginal, suggesting a gap between environmental goals and material implementation.

The range of activities in nature tourism destinations, as documented in Annex 7, reveals how architectural design plays a supporting and sometimes transformative role in shaping visitor experiences. The most prevalent group, adventure and outdoor activities, is led by exploration (56) and hiking (52), both of which rely on lightweight, durable infrastructure, marked trails, observation decks, and modular shelters that blend with the terrain while offering rest or protection. Similarly, bike riding (12) and kayaking (8) often necessitate facilities like rental pavilions, dry storage, or water access points integrated seamlessly into the landscape. In sports and physical activities, swimming (31) stands out, calling for interventions, lakeside decks, floating saunas, or minimal changing shelters. More specialized activities like skiing (13), horse riding (9), and climbing (2) require built features, stables, gear stations, or belay platforms, often designed with local materials to maintain aesthetic cohesion.

Architecture also plays a key role in relaxation and wellness, with high frequencies for skygazing (28), sauna use (27), and playing (11/13). These experiences benefit from intimate, enclosed spaces that emphasize calm, comfort, and views typically constructed with wood, warm lighting, and soft acoustics. Creative activities, including art making (11) and pottery (1), require studios or open-air structures with natural ventilation and light, often designed to evoke a sense of openness and inspiration.

In the domain of social and leisure activities, festivals (6) and weddings (3), architecture supports temporary or semi-permanent gathering spaces like open pavilions, canopies, or terraces capable of being reconfigured while maintaining a connection to the natural setting. Lastly, cultural and educational activities show significant presence, especially sightseeing (49), education (19), and museums (19). These demand interpretive infrastructure visitor centers, signage systems, and exhibition spaces designed to be accessible and context-sensitive, often integrating local narratives into the spatial layout. Whether through minimal interventions like viewing platforms or more structured facilities, spas and classrooms, architecture shapes how these activities are experienced framing the landscape, guiding movement, and mediating between comfort and immersion.

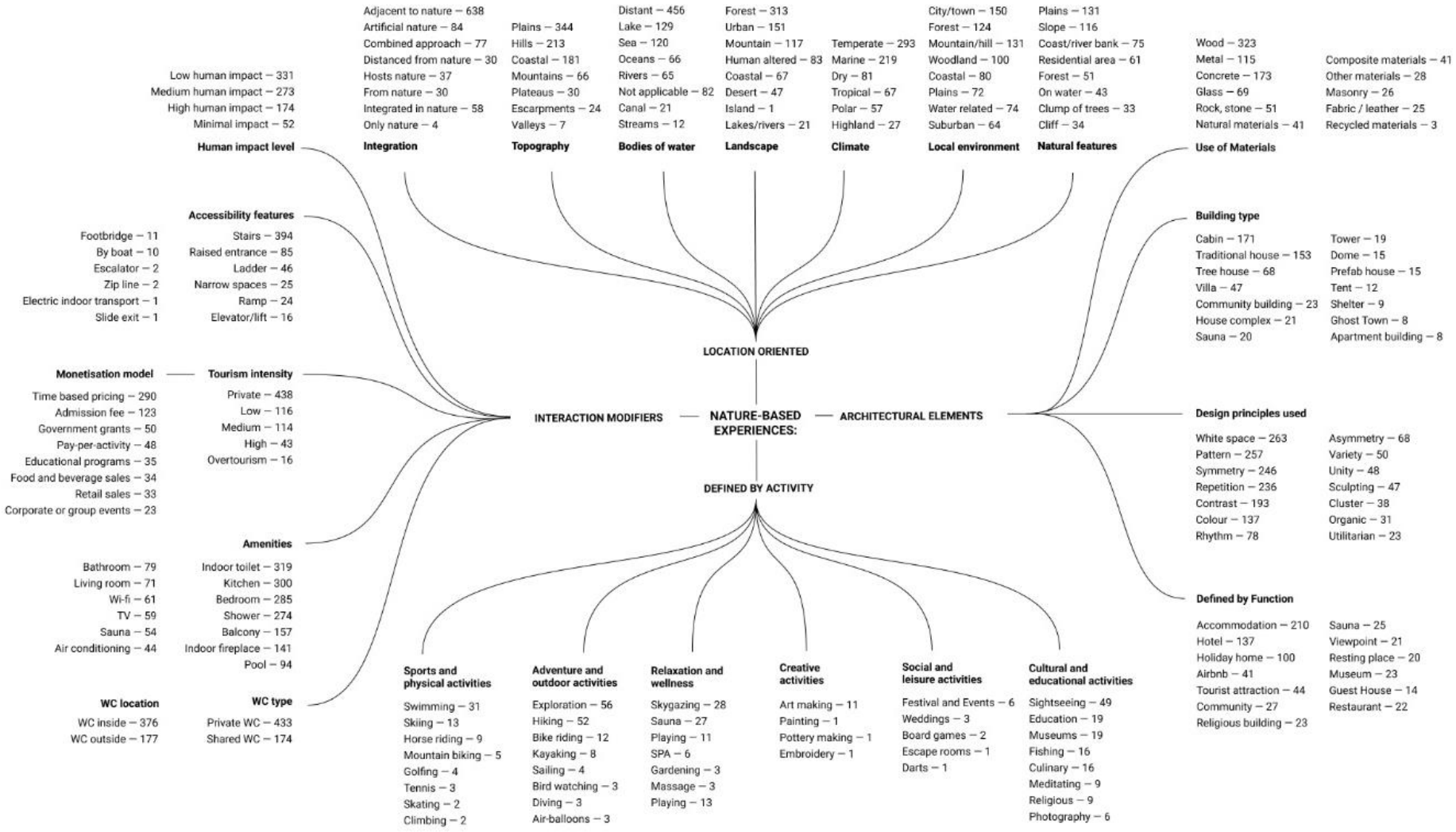

Figure 55. Experiential map of nature tourism synthesis with location, architectural elements, activities and interaction modifiers, M.Babris (Annex 7)

Experiential chart reinforces the argument that the design of nature-based tourism architecture is a response to both the environmental context and the types of experiences offered. It illustrates that by carefully considering factors like location, activities, accessibility, and sustainability, architects and designers can create spaces that not serve the needs of visitors and also preserve and enhance the natural surroundings. This interrelationship between place, activity, and design is vital to creating impactful nature tourism experiences. Going more into detail, in active nature tourism locations where adventure and outdoor activities are prioritized, hiking, climbing, or water sports like kayaking and diving, the architecture tends to emphasize seamless integration with nature. The structures are often minimal, using natural materials like wood, stone, or recycled elements, designed to blend into the landscape without disturbing the local ecosystem. Buildings might be lightweight, with transportable frames that allow for minimal disruption to the land. An architect like Bjarke Ingels (BIG) often designs with environmental integration in mind, creating structures that serve as attractions, respect and enhance the natural surroundings. In such settings, cabins, treehouses, and prefabricated structures are common, offering a low impact on the environment while still providing a close connection to nature (Figure 56).

Figure 56. Maritime Youth House, Bjarke Ingels Group (BIG), Denmark [Photo by BIG, Annex 7].

The types of activities also influence the design principles and amenities. Destinations focused on wellness and relaxation, saunas, spas, and meditation retreats, might feature organic, flowing forms, utilizing warm materials like wood and stone to create a serene and calming environment. The architecture in these spaces is likely to emphasize asymmetry and natural aesthetics, allowing the structures to feel like extensions of the natural landscape. Architects like Spinn Arkitekter are known for their sensitive use of wood and organic forms, frequently designing buildings that promote tranquillity and a strong connection to the natural surroundings, often incorporating local materials to minimize the environmental impact. In contrast, architecture aimed at cultural or educational tourism, museums or cultural centres, often places a stronger emphasis on storytelling and historical context. Here, the architectural design might be more monumental, with a focus on accessibility and large-scale public engagement, while still being sensitive to the surrounding landscape. These buildings incorporate more visible design elements like symmetry or pattern repetition, often constructed with sustainable materials but with a focus on providing educational spaces that respect their natural settings. MAD Architects office is well known for blending cultural significance with environmental considerations in public spaces designs, ensuring that the structures educate visitors while maintaining harmony with the environment (Figure 57) [51, 90].

Figure 57. Yabuli Entrepreneurs' Congress Center, MAD Architects, China
[Photo by MAD Architects, Annex 7].

The landscape plays a crucial role in shaping architectural responses in nature tourism destinations, with local environment attributes dictating both spatial form and construction approach. As seen in the distribution, city/town environments (150) represent the largest share (18%), indicating that many nature tourism sites are located at the urban edge requiring transitional architecture that blends urban infrastructure with natural aesthetics. Close behind are mountain/hill settings (131, 15.7%) and forests (124, 14.9%), where topographic variation and dense vegetation call for elevated platforms, cantilevered decks, and modular elements to minimize site disturbance while enhancing views and immersion. Woodland areas (100, 12%) similarly encourage semi-enclosed, nature-integrated structures, often elevated or spaced to preserve root systems and undergrowth. Coastal (80, 9.6%) and water-related (74, 8.9%) contexts demand materials and structural systems resilient to moisture and salt exposure, while also maximizing vistas and waterfront access through open-plan designs and terraces. Plains (72, 8.6%) support more spread-out horizontal layouts, ideal for larger community-based setups or dispersed cabins. Suburban (64, 7.7%) and desert environments (40, 4.8%) require designs that negotiate thermal comfort and transitional boundaries employing shading, ventilation, or compact footprints. The architectural strategy in each of these contexts is highly reactive to natural and environmental constraints accommodating elevation, exposure, and ecological sensitivity. Buildings in mountainous areas often emphasize verticality and minimal land contact, while those in water-adjacent zones must consider flood resilience and seasonal shifts. Interplay between topography and architecture ensures that the built form supports functional needs and enhances the immersive quality of the nature-based experience. (Chart 5).

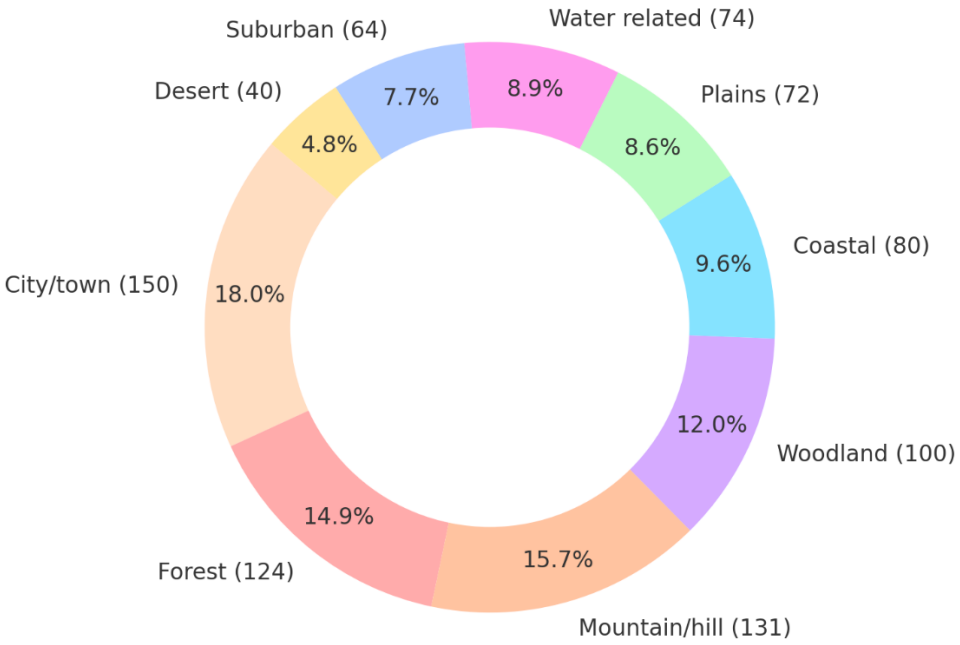

Chart 5. Distribution of Local Environment Types (4% and above), (Annex 7).

The use of sensory experiences in nature tourism can enhance the visitor experience and deepen their connection with nature. Experiences are a combination of several criteria, destination, activity, weather and local community based activities [18, 40, 54, 116]. Chart of local environments showcase the most prominent types of natural settings, filtered to display only those that constitute over 4% of the total distribution. This cutoff was applied to focus on the most popular and impactful environments in the dataset, excluding fewer common categories that have minimal representation. By highlighting environments that surpass the 4% threshold, dominant natural landscapes that are most frequently associated with tourism experiences were emphasized, forests, mountains, and coastal areas. These environments offer rich sensory experiences and are key attractions in nature-based tourism due to their immersive qualities, drawing in the largest number of visitors and supporting a variety of outdoor activities. Sight, sound, touch, taste, and smell can be effectively utilized in nature tourism experiences enhancing the overall enjoyment of the destination, immersing them in the natural environment. Sensory experiences can also be educational, helping visitors to learn about the unique features and characteristics of the destination.

2.3. Impact of marketing optimised architecture on nature tourist attraction

Nature tourism and experiential marketing are closely related, as both focus on creating engaging, immersive experiences for visitors. Experiential marketing is a form of marketing that involves creating interactive, hands-on experiences that allow consumers to engage with a brand or product on a deeper level including activities, product demonstrations, interactive displays or immersive brand experiences. In the context of nature tourism, experiential marketing is utilised to create unique, engaging experiences that allow visitors to connect with nature in a meaningful way. For example, a nature tourism destination might offer guided hikes, birdwatching tours, or nature photography workshops that allow visitors to learn about and

engage with the local environment. By using experiential marketing techniques, nature tourism destinations can create memorable, enriching experiences that enhance the visitor experience and foster a deeper connection to nature [39, 45, 60, 93].

Marketing-oriented design allows architects to contribute to the branding and storytelling of the destination. By aligning the architectural design with the destination's brand identity and narrative, architects can reinforce the desired image and communicate the destination's essence to visitors. Through thoughtful design decisions, architects can evoke emotions, establish a sense of place, and create a cohesive and memorable experience that aligns with the destination's marketing strategy. Architects can collaborate with marketing professionals and destination stakeholders to ensure that the architectural design is effectively promoted to the target audience. By actively participating in marketing discussions and incorporating marketing materials into their design presentations, architects can contribute to the overall marketing efforts. This collaboration can enhance the visibility and appeal of the architectural design, attracting attention and interest from potential visitors. A marketing-oriented approach enables architects to demonstrate the value of their designs in the context of nature tourism. By aligning architectural design with market demands, architects can showcase their ability to create sustainable, immersive, and experiential environments that enhance the visitor experience. This positions architects and designers as crucial strategic partners in the development of nature tourism destinations and opens doors to further opportunities and collaborations within the industry [67, 134, 146].

Marketing-oriented approach to architectural design is evident in the work of several leading architects and firms that focus on nature tourism, prioritizing creating spaces that fulfil the functional needs of the destination and serve as key elements in its branding and storytelling, making it more appealing to tourists seeking memorable and immersive experiences.

La Cabane Perchée, featured on more than 40 analysed destinations from Annex 7, capitalizes on the allure of immersive nature experiences by creating elevated treehouse structures that attract eco-tourists. Having built over 500 tree-houses worldwide, the studio pioneered the "hospitality tree-house" concept for tourism professionals Their architectural philosophy directly drives marketing strategy by emphasizing the primal appeal of elevated forest living, harnessing visual representations that have always inspired travelers, similar to how commissioned paintings once promoted the allure of untouched nature. The studio's designs deliberately maximize photogenic potential through strategic positioning and architectural details that create Instagram-worthy moments, transforming guest experiences into organic marketing content. This designer influence means marketing no longer just promotes existing spaces but actively shapes architectural decisions sight lines, framing elements, and experiential staging become integral design considerations that blur the boundary between accommodation and marketing tool, making La Cabane Perchée's treehouses self-promoting architectural marketing platforms.

Saunders Architecture optimizes tourism appeal by blending striking modernist design with scenic, rugged landscapes, especially in remote and coastal areas. These locations offer tourists a sense of escape and exclusivity, making them attractive for premium experiences. Projects like Aurland Outlook and Fogo Island Inn by architect Todd Saunders aim to attract visitors along routes in Norway, and beyond, demonstrating how the studio's design philosophy transforms architecture into tourism magnets. The studio's highly contextual approach and deep-rooted respect for the relationship between buildings and nature creates marketing opportunities that emphasize authenticity and place-specific experiences. Minimalist structures in dramatic settings become self-marketing assets, where landscape is never offered as a

sacrifice for architecture to thrive. Environment and materials work in harmony. This architectural strategy shifts marketing focus from generic luxury to location-specific narrative, making destinations themselves the primary attraction. The visual composition of Saunders' buildings against stark landscapes creates compelling marketing imagery that positions these remote locations as architectural pilgrimages, changing how isolated destinations compete in the tourism market (Figure 58).

Snøhetta is known for designing iconic, highly visual tourist attractions, cultural centres and museums. Their work is designed to be accessible and visually captivating, turning their projects into must-see destinations that draw global visitors, optimizing for tourism marketing. The whole design is an experiential journey for the user that blurs the gap between the inside and the outside world which is the specialty of Snøhetta Architects, transforming how nature tourism destinations are conceived and marketed. Projects like Viewpoint Snøhetta, located on the outskirts of the Dovrefjell-Sunndalsfjella National Park, serve as an observation pavilion for the Norwegian wild reindeers and demonstrate how the studio creates architectural magnets that position remote natural areas as international destinations. The building design is based on a contrast between ideas - a rigid outer shell and a soft, organic inner core shaped like rock or ice that has been eroded by natural forces creating marketing narratives that emphasize the seamless integration of built and natural environments. This architectural approach transforms nature tourism marketing from promoting passive observation to active participation in designed experiences, where visitors seek out specific architectural moments within landscapes, making Snøhetta's structures essential waypoints that redefine how wilderness areas compete for global tourism attention.

Olson Kundig designs in remote and nature-rich settings, where the architecture becomes part of the tourist draw. Emphasizing interaction between the built environment and natural surroundings, projects often cater to adventure and eco-tourists seeking unique and immersive experiences. As a collaborative global design practice the studio transforms nature tourism marketing by creating architecturally distinctive experiences that redefine remote destinations. Projects like Gulf Islands Cabin, where the emphasis is on the experience of nature Olson Kundig Gulf Islands Cabin and Resort at Bryce Canyon with over 100 cabins spread throughout the 165 acre site at Bryce Canyon, demonstrate how their designs become marketing assets through strategic positioning and environmental integration. Their architectural approach includes large areas of glazing that frame views of the campus, forest and mountains and foster engagement with natural landscapes, creating photogenic opportunities that market themselves. This design philosophy transforms nature tourism marketing from promoting generic wilderness experiences to advertising specific architectural encounters within landscapes, where visitors seek out Olson Kundig structures as destinations (Annex 7).

MAD Architects creates futuristic, visually stunning architecture that grabs attention through its unconventional and sculptural forms. This kind of design becomes an instant marketing tool, as tourists are drawn to the novelty and spectacle of the structures. Their work often becomes iconic landmarks, enhancing the visibility of the destinations they are part of. MAD is widely appreciated for its designs combining organic forms inspired by nature, and works in forward-looking environments developing futuristic architecture based on a contemporary interpretation of the eastern spirit of nature, transforming nature tourism marketing with architectural experiences that redefine remote destinations. MAD Architects uses advanced technologies and sustainable principles into their work, creating bold, memorable designs that inspire and enhance the natural experience, making their structures self-marketing, attracting visitors to experience architectural innovation within natural settings.

MAD Architects crafts designs that connect with nature, creating spaces where buildings and their setting blend together while looking towards the future, transforming nature tourism marketing from promoting passive landscape appreciation to advertising active engagement with visionary architectural experiences. This approach shifts marketing focus from generic nature retreats to architecturally-driven destinations, where visitors seek out sculptural interventions as primary attractions, shifting how experiential nature tourism competes by positioning futuristic architecture as essential element within natural environments.

Javier Senosiain uses organic, nature-inspired forms to create architecture that blends into the landscape while being striking enough to become a tourist attraction. His bio-architecture appeals to tourists seeking a unique and harmonious experience with nature, making his projects a good match for eco-tourism marketing campaigns. Javier Senosiain's design philosophy resides in creating spaces inspired by nature itself and meant to seamlessly blend into their surroundings and creating architectural experiences that market themselves as living embodiments of natural forms. There are organized architectural tours to visit Senosiain's projects, demonstrating how his bio-architecture approach has highlighted experiential nature tourism by positioning buildings as primary destinations rather than only accommodations. Promoting a philosophy of architecture that seeks and promotes harmony between the habitat of man and the nature, making his projects examples of environmental idealism that appeal directly to eco-conscious tourists. This architectural philosophy transforms nature tourism marketing from promoting separate experiences of built and natural environments to advertising seamless architectural-landscape hybrids, where visitors seek out Senosiain's organic structures as destinations that demonstrate harmonious human-nature relationships. (Figure 59).

LUO Studio focuses on creating sustainable and minimalist designs that appeal to environmentally conscious tourists. Their use of recycled materials and low-impact structures is marketed towards eco-tourists seeking ethical travel options. LUO Studio's projects often engage salvaged or recycled materials, to make tourism-led development of villages more sustainable, transforming nature tourism marketing with architectural experiences that embody environmental responsibility as their primary attraction. Some of LUO Studio’s most noted projects include Luotuowan Pergola, a geodesic tunnel made with timber struts that have been salvaged from village renovations, and a community center in Henan, also made with wood that can be dismantled and reused. LUO studio is committed to creating more durable, friendly and quality space through creative thinking, craftsmanship spirit of devotion and caring for nature, transforming nature tourism marketing from promoting luxury experiences to advertising ethical architectural encounters that align with eco-conscious traveler values. This approach shifts marketing focus from architectural to environmental stewardship, where visitors seek out LUO Studio's structures as authentic expressions of sustainable design principles with meaningful connections between built environments and natural preservation. (Figure 61).

MVRDV designs projects that reimagine urban landscapes, often integrating nature into densely populated areas. These projects become attractions for urban tourists, providing novel experiences in city settings. The blend of green space and architecture creates a unique selling point for cities aiming to boost tourism. MVRDV see themselves as 'city doctors', helping municipalities to change public spaces, reinvigorate disused buildings, and revive neighbourhoods, transforming nature tourism marketing with new architectural experiences that position cities as nature destinations. Projects like Seoul's Skygarden, demonstrate how the studio creates urban nature attractions that market cities as experiential nature tourism destinations. The project is included in a plan developed in 1999 to revitalize the natural environment and attract visitors through a series of artistic interventions, showing MVRDV's

approach transforming urban tourism marketing from promoting traditional cultural attractions to advertising innovative nature-architecture hybrids. MVRDV's design philosophy shifts marketing focus from separating urban and nature experiences to positioning cities as destinations where visitors can encounter nature through architectural innovation.

JVA (Jarmund/Vigsnæs Architects) works with challenging landscapes and the uniqueness of local topography to create destinations that highlight natural features making the location more appealing for nature and adventure travellers. The practice focuses on sites frequently placed in strong natural settings with harsh climate conditions, transforming nature tourism marketing through architectural experiences that position extreme environments as accessible destinations. Projects like Svalbard Science Center, lifted off the ground and streamlined according to snow piling and wind efficiency, where the architecture responds to the physical challenges of the arctic, and Steinsdalsfossen Waterfall, which aims to deliver a practical break from life on the road with an experience of nature where architecture enables new ways of seeing the landscape. JVA transforms challenging topographies into marketing assets where geometry and form are designed in reference to landscape adapting to environmental context of wind and snow, shaped through 3D simulations to avoid undesirable accumulation and creating marketing narratives that emphasize architectural mastery over harsh conditions. This design philosophy transforms nature tourism marketing from promoting accessible natural experiences to advertising architectural conquests of extreme environments, where visitors seek out JVA's structures as highlights of architectural harmony with challenging landscapes, showing how remote and difficult terrains can attract experiential tourism by positioning architectural adaptation as the primary attraction.

Gracia Studio mostly designs for desert landscapes with a focus on minimalism and environmental sensitivity, creating destinations that are marketed for their modernity and uniqueness in harsh environments. Their architecture, often featured in travel magazines and tourism campaigns, appeals to travellers looking for unique, off-the-grid experiences in scenic, rugged areas. Gracia Studio's design philosophy is using materials that meet the needs of the project in a structural form yet aesthetical and modern, transforming desert tourism marketing by creating architectural experiences that position harsh arid landscapes as luxury destinations. Gracia designed the rusty-brown steel-frame-and-panel lofts on pilotis project to blend with the rocky inland terrain, comprising 20 separate cabins dotted across the landscape lifted off the ground on steel frames so that they impact as little as possible. Hotel Endémico positioned within a landscape of vineyards with each ecoloft having panoramic vistas overlooking the scenic terrain, offers desert tourism marketing from promoting survival experiences to advertising refined architectural encounters in extreme environments, shifting marketing focus from generic luxury accommodations to showcasing architectural mastery of harsh conditions positioning environmental restraint and architectural elegance as the primary attractions for off-grid luxury travellers (Figure 60).

Figure 58. Fogo Island Inn Saunders Architecture, Canada [Photo by Iwan Baan, Annex 7].

Figure 59. Nautilus House, Javier Senosiain, Mexico [Photo by Jaime Jacott, Annex 7].

Figure 60. Villa Encuentro, Graciastudio, Mexico [Photo by Graciastudio, Annex 7].

Figure 61. Pergola in Luotuowan village, LUO Studio, China [Photo by jin weiqi, Annex 7].

Building upon the concept of marketing-optimized architecture in nature tourism, Disney parks serve as a quintessential case study of how immersive, experience-oriented design can transform outdoor destinations into global attractions [29, 44, 104, 117]. Disney seamlessly integrates architectural elements with storytelling to create environments where every structure, pathway, and landscape contributes to a cohesive narrative. This deliberate design strategy fulfils functional needs and enhances the marketability of the parks, making them compelling destinations for tourists seeking unique and memorable experiences. In contrast, Switzerland's marketing campaigns featuring Roger Federer leverage the country's authentic natural landscapes and cultural heritage without significant architectural intervention. By aligning with Federer's global appeal, Switzerland promotes its existing outdoor attractions, emphasizing genuine experiences in nature rather than engineered environments. This juxtaposition highlights two distinct approaches: Disney's creation of meticulously designed, narrative-rich spaces that rely heavily on architectural innovation to drive tourism, versus Switzerland's use of celebrity endorsement to amplify the allure of its natural beauty. Both strategies underscore the vital role of marketing in shaping tourist destinations, whether through the built environment or through the promotion of inherent natural assets [11, 143].

Role of experience in nature tourism is instrumental in crafting destinations that resonate with visitors on a deeper level. Disney parks illustrate how deliberate architectural design, intertwined with storytelling, can create immersive, experience-rich environments that become powerful marketing assets contributing to a cohesive narrative, enhancing the park's appeal and setting it apart in a competitive market. Switzerland's marketing campaigns featuring

Roger Federer showcase how leveraging authentic natural landscapes and cultural heritage can attract tourists without extensive architectural intervention. By capitalizing on Federer's global recognition and the country's inherent beauty, Switzerland promotes genuine outdoor experiences that appeal to travellers seeking authenticity. These contrasting approaches highlight the critical role architects play in aligning design with marketing strategies through creating engineered, narrative-driven spaces or enhancing the allure of natural attractions. Embracing a marketing-oriented mindset enables architects to contribute significantly to a destination's branding and storytelling, ultimately enriching the visitor experience and ensuring the destination's success in the global tourism landscape.

Understanding and embracing the marketing aspects of nature tourism destinations can enhance their role in designing impactful and successful nature tourism architecture. Incorporating marketing considerations allows architects to align their designs with the target audience's preferences and desires. By conducting market research and understanding the needs and motivations of potential visitors, we can create designs that resonate with the intended audience. Market-driven approach ensures that the architectural elements and experiences offered align with the expectations and aspirations of the visitors, leading to increased engagement and satisfaction. Marketing-oriented mindset enables creation of designs that stand out in a competitive tourism market. Emphasizing the unique selling points of the destination and integrating them into the architectural design helps differentiate the nature tourism destination from others, achievable through the innovative use of materials, incorporation of local cultural and environmental elements, or the creation of memorable and immersive experiences within the built environment.

3. INNOVATIVE APPROACHES IN DEVELOPING NATURE TOURISM DESTINATIONS

To assess the impact of innovations on the nature tourism industry, authors approach to the measurement of innovations in nature tourism research is adapting Altschuler's innovation evaluation approach. This synthesized approach focuses on the evaluation of innovations based on their potential impact on the nature tourism industry. It considers factors like the innovation's novelty, feasibility, and potential for commercialization, as well as its potential impact on the environment and society. Another approach to the measurement of innovations in nature tourism research is the TRIZ methodology. This approach is based on the principles of the TRIZ, a systematic approach for understanding and solving problems, focused on the identification and evaluation of innovations based on their potential to solve problems and improve the nature tourism industry. It considers factors like the innovation's potential for improving the quality of life and the environment, as well as its potential for enhancing the competitiveness of the nature tourism industry.

In contrast, some studies have adopted a more global perspective on the measurement of innovations in nature tourism research. These studies often focus on the mapping of innovations by their global impact, as demonstrated in OECD (Organisation for Economic Co-operation and Development) reports with valuable insights into the global impact of innovations in nature tourism research informing the expected capacity to attract foreign attention and investment to new nature tourism developments. The measurement of innovations in nature tourism research is a complex and multifaceted challenge. Different approaches to the measurement of innovations offer valuable insights into the impact of innovations on the nature tourism industry and can inform the development of effective measurement systems. Combining Altschuler's innovation evaluation approach and TRIZ methodology an adapted system for evaluating innovation capacity of Nature tourism destinations was devised. Altschuler's methodology was selected for its high degree of applicability and holistic view in comparing different types of destinations and experiences [13, 31, 49, 83, 124]. Key aspect of the transformation of nature tourism architecture is the integration of technology into the design and development of nature tourism destinations. Innovative solutions like virtual reality and augmented reality, allow for the creation of immersive environments that engage the senses and enhance the overall visitor experience. This also applies to the integration of sustainability principles into the design and development of nature tourism destinations, involving the use of sustainable building practices and the incorporation of natural materials, wood, stone, and clay, into the design of buildings and structures. The involvement of local communities in the design and development of nature tourism destinations is also an important aspect of the transformation of nature tourism architecture. This involves engaging with local stakeholders and incorporating their perspectives and needs into the design and development of nature tourism destinations. Transformation of nature tourism architecture is an essential aspect of the evolution and growth of the nature tourism industry.

3.1. Role of workshops and community engagement in creating successful nature tourism products

Community engagement is a vital element in the creation of successful experiential nature tourism destinations. Involving local communities in the planning and management of nature tourism activities, destinations can ensure that they are responsive to local needs and interests, and that they benefit the local economy. Involving local communities in the development of nature tourism destinations can foster a sense of ownership and pride, which can lead to greater support for conservation efforts and the long-term success of the destination. There are several ways in which community engagement can be incorporated into nature tourism development. For example, local communities can be involved in the planning process, using surveys, focus groups, and other forms of consultation. This can help to ensure that nature tourism activities align with local priorities and interests, and that they are sensitive to local cultural and environmental concerns. In addition, community engagement can take the form of partnerships with local organizations, businesses, and institutions. For example, a nature tourism destination might partner with a local conservation group to provide educational programs or interpretive trails, or with a local artisan to create souvenirs that reflect the unique culture and natural heritage of the area. Below are outlined several examples of community involved experiential nature tourism experiences [25, 58, 70].

Trail angels are individuals or organizations who provide support and assistance to long-distance hikers and other outdoor enthusiasts, providing rides to and from the trailhead, offering food and water along the trail, and providing temporary lodging for hikers who need a break. Another example of a community-driven nature tourism initiative is the development of local nature trails and hiking paths. These trails can be created and maintained by local organizations, community groups, non-profits, and outdoor clubs. Nature trails can provide opportunities for residents and visitors to explore the local natural environment and promote outdoor recreation in the community. In addition, many communities have started to implement eco-tourism initiatives, which focus on sustainable tourism practices and the conservation of local natural resources, supporting local businesses that offer eco-friendly products and services, promoting sustainable tourism practices among visitors and residents, and protecting local wildlife and natural habitats. Authors experience during coordination, management and improvement projects of EU long distance hiking trails highlight several approaches in encouraging forming of community groups along the nature trails (Annex 6) [65].

Long-distance trails can engage and attract nature tourists from abroad. In authors case from Annex 1-2, a several week tour along the Michinoku trail in Japan stands out as a good example. The Michinoku trail is a 1,200-kilometer long-distance hiking trail that stretches from Hachinohe in Aomori prefecture to Soma in Fukushima prefecture. The trail passes through a diverse range of natural environments, including forests, mountains, and coastal areas. Michinoku trail engages and attracts nature tourists from abroad by working with local communities along the trail. The trail passes through several small towns and villages, and local residents often provide support and assistance to hikers. This includes offering lodging and meals, providing information and guidance, and helping with transportation. The Michinoku trail works with local businesses to promote nature tourism in the region. Many businesses along the trail, hotels, restaurants, and outdoor gear stores, offer special services and discounts for hikers. This helps to support the local economy and provides opportunities for visitors to experience the unique culture and natural environment of the region. the Michinoku trail is a great example of how a long-distance trail can engage and attract nature tourists from abroad by working with local communities and businesses (Figure 62). By providing support and

assistance to hikers and promoting the region as a destination for nature tourism, the trail is helping to support sustainable economic development and preserve the natural environment (Annex 1) [79]. The role of community engagement in the creation of successful nature tourism destinations is to ensure that these destinations are responsive to local needs and interests, and that they provide economic and social benefits to the local community. By involving local communities in the planning and management of nature tourism activities, destinations can create a stronger connection between people and nature and help foster a sense of stewardship and conservation [42, 99].

Figure 62. Cafe Suika, Michinoku Trail, Japan, 2022 [Photo by Author, Annex 2].

Nature tourism workshops in Latvia from Annex 4 show how practical workshops conducted during the research period in Latvia exemplify the crucial role of community engagement and innovative methodologies in developing successful nature tourism products. These workshops embraced an intentional innovation-enabled approach, recognizing the importance of incorporating innovative planning tools, idea workouts and associative thinking to foster creativity and generate novel ideas. By involving local communities and professionals from diverse fields, these workshops fostered a collaborative and interdisciplinary environment that yielded significant benefits, aligning with the principles outlined in the development of nature tourism destinations. Latvia was selected for this study based on its strong alignment with the outlined criteria and its suitability as the author's home country to test learnings from abroad. The nation's cultural emphasis on community engagement, abundance of natural resources, and strategic focus on sustainable tourism make it a fitting setting for implementing innovative nature tourism products. Being the author's home country allows for a deeper understanding of local dynamics and facilitates more effective community involvement and cross-disciplinary collaboration. This familiarity enhanced the ability to apply international insights in a way that is culturally appropriate and impactful, ensuring that the initiatives are responsive to local needs while benefiting from global best practices. The proliferation and warm reception of nature tourism workshops in Latvia underscores a strategic commitment to community engagement and innovative methodologies in developing nature tourism products. These initiatives are rooted in the understanding that involving local communities and embracing cross-disciplinary collaboration are essential for creating tourism experiences that are both successful and sustainable. The frequent organization of workshops in Latvia aligns with authors research direction and matches with strong local cultural value on community involvement and collective action, making community-driven initiatives more prevalent and effective (Figure 63). Recognizing the economic and social benefits of sustainable tourism, Latvian organizations and municipalities actively invest in workshops to foster innovation and competitiveness in the tourism sector. With rich natural landscapes, there is a significant

opportunity and need to develop nature tourism products responsibly, necessitating widespread community input and innovative planning. The inclusion of professionals from various disciplines and educational institutions enhances the capacity for innovative solutions, reflecting a national priority on education and interdisciplinary cooperation.

Figure 63. Yoga experience in Festivals LAMPA, Cesis, Latvia [Photo by Author, Annex 4].

Nature tourism workshops contribute to tourism offerings that are responsive to local needs and interests. This approach enriches the visitor experience and promotes economic growth, social cohesion, and environmental conservation within Latvian communities. The extensive occurrence of workshops highlights Latvia's proactive stance in harnessing collaborative innovation to advance sustainable nature tourism.

3.2. Use of technology in developing and enhancing nature tourism destinations

The use of technology in nature tourism has the potential to enhance the visitor experience and deepen their connection to nature. In recent years, advances in technology have enabled the development of a wide range of tools and services that can be used to enhance nature tourism experiences. For example, mobile apps and web-based platforms can provide visitors with real-time information about the local environment, including maps, trail guides, and information about local wildlife and plant species. Augmented reality (AR) and virtual reality (VR) technology can also be used to create immersive, interactive experiences that allow visitors to explore the natural world in a new way. AR apps allow visitors to scan their surroundings and view virtual information overlaid on their real-world view, while a VR headset can transport them to a virtual forest or jungle. By incorporating technology into nature tourism experiences, destinations can create more engaging, enriching experiences for visitors. Apart to education and adding an informative layer, new technologies, remote sensing and generative design, can inspire and aid biophilic design approaches through their ability to provide higher levels of detail and more precise spatial information. Remote sensing allows for the accurate mapping of existing vegetation, including the position and size of individual plants. This information can be used to inform the design of biophilic spaces, ensuring that they are harmoniously integrated into the existing natural environment [95].

Generative design allows for the creation of complex and dynamic designs that are informed by the principles of biophilic design. By using algorithms to generate and optimize design solutions, generative design can help architects and designers to create biophilic spaces that are efficient, functional, and aesthetically pleasing. The use of new technologies, remote sensing and generative design, can inspire and aid biophilic design approaches by providing higher levels of detail and more precise spatial information. By accurately mapping the existing natural environment and using algorithms to generate optimized design solutions, these technologies can help to create biophilic spaces that are harmoniously integrated into the natural environment and enhance the overall visitor experience. This approach has been frequently used iby the author in outdoor projects like conversation festival Lampa, (Figure 64), (Annex 4) [57].

Figure 64. 3D model integrated in the site scan for Conversation festival Lampa 2025, Cesis, Latvia. M.Babris, N.Predella.

Additive manufacturing and 3D printing are emerging technologies that have the potential to revolutionize the design and construction of nature tourism destinations allowing for the creation of custom solutions that are tailored to the specific needs and requirements of each project, making it possible to create unique and immersive experiences for visitors. One key benefit of additive manufacturing and 3D printing is their ability to create complex and dynamic designs that are not possible with traditional manufacturing methods. By using algorithms to generate and optimize design solutions, it is possible to create structures and environments that are aesthetically pleasing, functional, and efficient. This can lead to a higher level of engagement and immersion for visitors, enhancing the overall visitor experience. Another benefit of additive manufacturing and 3D printing is their ability to reduce waste and promote sustainability. These technologies allow for the creation of custom solutions that are tailored to the specific needs and requirements of each project, minimizing the need for excess materials and reducing the environmental impact of construction. The use of additive manufacturing and 3D printing in the design and construction of nature tourism destinations has the potential to create unique and immersive experiences for visitors. By allowing for the creation of complex and dynamic designs and promoting sustainability, these technologies can help to enhance the

overall visitor experience and promote the health and vitality of the natural environment [71, 85, 89, 123]. Such an example from Annex 7 is Casa Covida designed by Emerging Objects.

Digitalization is not the only solution to improving nature tourism quality and experiences. In the case of the Michinoku Trail in Japan from Annex 1 provides a notable example in the innovative utilization of traditional manual counting systems, where step counters are placed in boxes at trailheads. These counters serve as a means for participants to track their progress but also provide valuable information regarding the number of other tourists who have embarked on the trail. This data offers insights into the trail's potential interest, level of busyness, and overall popularity. Infrastructure improvements play a crucial role in tailoring the experiences perceived by tourists. While architecture extends beyond mere buildings along the trail, it encompasses all human-made elements integrated within the natural environment. The interplay between these architectural interventions and the surrounding nature creates a harmonious and immersive experience for trail-goers.

Figure 66. Casa Covida, Emerging Objects, The United States [Photo by Elliot Ross, Annex 7].

Mapping and remote sensing technologies have emerged as indispensable tools in the development and enhancement of nature tourism destinations. By providing precise spatial information and detailed insights into natural environments, these technologies enable destinations to offer enriched experiences to visitors while promoting sustainability and conservation. One of the primary applications of remote sensing in nature tourism is the creation of high-resolution maps using satellite imagery and aerial photography. These maps offer intricate details of landscapes, including terrain features, vegetation types, water bodies, and wildlife habitats. Such detailed mapping is essential for designing trails, planning infrastructure, and ensuring that tourist activities are harmoniously integrated with the natural environment (Figure 67). During authors organised outdoor tours from Annex 1, several such high-resolution maps were printed on up to 2-meter large posters with ability to consult locals, mark down comments and research specific areas. In Crossing Iceland expedition such real time satellite maps were used to validate snow cover and possible crossing sites. The combination of advanced mapping technologies, remote sensing, and concrete 3D printing is transforming the way nature tourism destinations design and implement site-specific structures. By leveraging precise spatial data and innovative construction methods, it's possible to create objects that adapt to the unique characteristics of each and enhance the visitor experience while minimizing environmental impact. Such objects were also tested during practical modelling workshops in Latvia further described in Annex 4. Resulting data gathered from remote sensing made possible to design a site adapted 3D concrete printed sauna for public use near environmentally sensitive winter swimming spot in Sigulda [69, 106].

Figure 67. Integrating Treehouse observation platforms in 3D scanned environment at guest house Spare in Latvia, 2018, M.Babris

Sustainable energy solutions, solar panels and wind turbines, are increasingly being integrated into the infrastructure of nature tourism destinations. These technologies reduce the environmental footprint of tourist facilities and demonstrate a commitment to sustainability, which can enhance a destination's appeal to environmentally conscious travellers (Figure 68). The integration of technology into nature tourism offers unprecedented opportunities to enhance visitor experiences while promoting sustainability and conservation.[43]. Mapping and remote sensing technologies provide detailed insights into natural environments, enabling more informed planning, improved visitor experiences, and stronger conservation efforts. Emerging technologies, wearable devices, IoT sensors, AI, and renewable energy solutions further enhance the capacity of nature tourism destinations to offer personalized, sustainable, and engaging experiences.

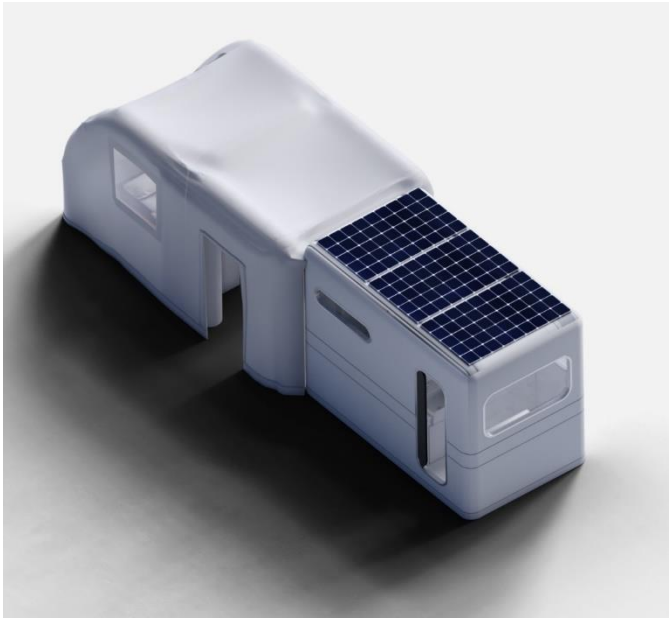

Figure 68. Designing autonomous camping module with inflatable appendix, 2024, NATO Science for Peace and Security Programme under grant number G6245 M.Babris, A.Borodiņecs, N.Predella.

The integration of technology in nature tourism must be balanced with respect for traditional practices and the preservation of natural ecosystems. The example of the Michinoku Trail in Japan illustrates how simple, low-tech solutions can be effective in enhancing visitor experiences and managing resources sustainably. Infrastructure improvements and thoughtful architectural designs play a crucial role in shaping the tourist experience without relying solely on digital advancements. The goal of incorporating technology into nature tourism is not to overshadow the natural beauty that draws visitors but to deepen their connection to it. By thoughtfully integrating technological advancements, destinations can provide immersive, educational, and sustainable experiences that foster a greater appreciation for the environment.

3.3. Monetisation and integration of sustainability principles in nature tourism development

The integration of sustainability principles is essential for the responsible development of nature tourism destinations. As the demand for nature-based experiences grows, it is important to ensure that destinations are managed in a way that protects the natural environment and supports local communities. To achieve this, nature tourism development must be guided by a set of sustainability principles that prioritize conservation, community engagement, and responsible resource management [26, 114].

For destinations that utilize a time-based pricing design must focus on creating spaces that encourage lingering and longer stays, lounges, galleries, or recreational areas. These spaces should offer comfort and convenience to maximize the visitor's experience during their allotted time. By promoting longer engagement, visitors feel immersed in the environment. The space needs to flow well, allowing exploration and relaxation without rushing, ensuring the visitor makes the most of their time-based visit. Few examples of destinations from the database using time-based pricing are the town of Underhill at Vermont State parks and La cabane en l'Air. These locations offer unique experiences, with Underhill providing a secluded, calm environment, and La cabane en l'Air featuring treehouse accommodations in a forest setting. Both at the time of writing use time-based entry to optimize visitor enjoyment and maintain a peaceful atmosphere (Figure 69) (Annex 7). La Cabane en l’Air, a French network specializing in unique treehouse and water-based accommodations, employs time-based pricing as a strategic monetization approach. This strategy involves adjusting nightly rates based on variables like seasonality, day of the week, and booking lead time. Stays during peak periods, including holidays and weekends, are priced higher due to increased demand, while off-peak times offer more affordable rates to attract guests during slower periods. This dynamic pricing model effectively balances occupancy rates and maximizes revenue, aligning prices with customer demand patterns. This approach is common in the hospitality industry, where time-based pricing helps optimize resource utilization and profitability.

Figure 69. La cabane en l'Air, France [Annex 7].

Structures funded by government grants often prioritize sustainability, preservation, and public access. Minimalist designs may be employed to reduce environmental impact, with attention to durability and low maintenance. These spaces tend to be educational or conservation-focused, with an emphasis on accessibility and public use. Architecture that minimizes human interference with the natural or historical setting improves the overall perception of preservation and care for the environment [100]. Eastern and Western Bathing Resort in Denmark as a reference benefits from public funding to maintain its facilities and preserve its environment, ensuring visitors enjoy a well-kept and accessible experience that highlights the area's cultural and recreational significance (Figure 70). The architecture of the Eastern and Western Bathing Resorts in Silkeborg, Denmark, shows how public funding can influence sustainable tourism development. Supported by Silkeborg Municipality and in collaboration with the Danish Nature Agency, the project was designed to align with the city's vision of becoming Denmark's "outdoor capital". Public investment facilitated the creation of facilities that cater to diverse users including winter bathers, athletes, and families while ensuring minimal environmental impact. The resorts feature circular, interconnected wooden bridges constructed from locally sourced materials, a design choice that encourages visitors to stay on designated paths, thereby protecting the surrounding biodiversity. Comprehensive habitat impact assessments were integral to the planning process, ensuring that the development preserved the area's flora, fauna, and water quality demonstrating how public funding can be leveraged to create recreational infrastructure that balances economic development with environmental stewardship.

Figure 70. Eastern and Western Bathing Resort, Sweco Architects, Denmark [Photo by Sweco Danmark, Annex 7].

When implementing pay-per activity monetisation model, flexible, modular spaces are essential, allowing for different activities to take place simultaneously. Areas should be designed to cater to specific activities, guided tours, workshops, or meditation rooms, with clear divisions and accessibility [42, 130, 133]. Visitors can choose specific experiences, and spaces dedicated to different activities enhance the overall satisfaction. Proper signage and easy transitions between activities make the experience smooth and enjoyable.

Zollverein Coal Mine Industrial Complex and Streetmekka Viborg as examples offer a range of specific activities, guided tours and interactive workshops, allowing visitors to pay only for the experiences they select. Modular, adaptable spaces and clear signage support a seamless transition between activities, enhancing visitor satisfaction and engagement (Figure 71). Streetmekka Aalborg employs a pay-per-activity monetization model, allowing visitors to access specific facilities, parkour zones, dance studios, or music workshops on a flexible, per-use basis. This approach requires an architectural design that accommodates modularity and adaptability. The former industrial building is divided into distinct zones, each tailored to different activities, enabling users to engage with the spaces they prefer. The expansive Experimental Hall is utilized for activities requiring ample space and height, while the more enclosed Laboratory Wing houses functions like dance and music production. This configuration supports the pay-per-activity model and enhances user experience by providing specialized environments for each activity. Additionally, the design incorporates areas for social interaction and observation, encouraging a sense of community among users. The architectural layout directly supports selected monetization strategy by facilitating diverse, user-specific engagements within the facility.

Figure 71. Game Streetmekka Aalborg, JAJA Architects, Denmark
[Photo by JAJA Architects, Annex 7].

An admission fee model charges visitors a single, upfront payment for general access to a venue or facility, granting them entry to all available activities or areas without additional costs. In contrast, a pay-per-activity model requires users to pay individually for each specific activity or service they choose to engage in. This approach allows for more flexible pricing and can cater to varying user interests and budgets, as individuals pay only for the experiences they select. While the admission fee model offers simplicity and predictability for both operators and visitors, the pay-per-activity model can optimize revenue by aligning charges with usage patterns and customer preferences. A clear entry and exit point, along with controlled access gates or ticket booths, is essential. The layout should ensure smooth flow and manage crowds effectively, with attention to queue management and ease of movement between areas [33, 84].

Efficient crowd control improves the visitor experience by reducing wait times and preventing overcrowding. The space should feel welcoming, with easy navigation to key attractions, ensuring visitors maximize their time on site. The Palace of Knossos in Crete utilizes an admission fee model to fund the preservation and management of this archaeological site. As of April 2025, the standard entrance fee is €20 for adults, with reduced rates of €8 for EU seniors over 65. EU citizens under 25 years old are granted free admission upon presenting valid identification. This fee structure supports the site's maintenance and conservation efforts, ensuring that visitors can continue to explore the remnants of the Minoan civilization. During the summer of 2023, the Palace of Knossos in Crete experienced temporary closures due to extreme heat conditions. On July 15, 2023, amid the intense heatwave known as "Kleon," the site was closed to the public from 12:00 PM to 5:00 PM to ensure visitor safety as temperatures soared above 41°C. These measures were part of broader efforts by Greek authorities to protect both tourists and staff from the dangers of extreme heat, which have become increasingly common in the region (Annex 1-2).

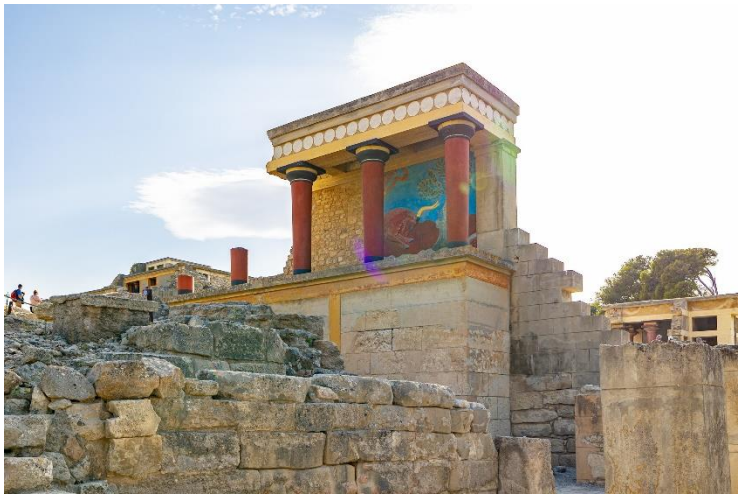

Figure 72. Palace of Knossos in Crete, Greece, July 2023
[Photo by Author, Annex 2].

House Attack and Dubai Frame from Annex 7 uses admission fees to manage access, ensuring a steady visitor flow and preventing overcrowding. Controlled entry points, efficient queue management, and well-defined pathways enhance the visitor experience by minimizing wait times and providing easy navigation, allowing guests to fully enjoy each site's unique attractions (Figure 73). At the time of writing The Dubai Frame employs an admission fee model, charging visitors AED 50 for adults and AED 20 for children aged 3–12, while infants under 3 and people of determination with up to two companions enjoy free entry. This revenue stream supports the maintenance and operation of the attraction, which is designed to offer a comprehensive visitor experience. The structure features a museum on the ground floor that traces Dubai's evolution from a fishing village to a global metropolis, an observation deck at the top providing panoramic views of both old and new Dubai, and a 'Future Dubai' gallery that projects the city's aspirations. The architectural design, including the use of gold-colored stainless steel cladding and the incorporation of the golden ratio, enhances the landmark's appeal, encouraging tourism and generating income through ticket sales.

Figure 73. Dubai Frame, Fernando Donis [Photo by Fernando Donis, Annex 7].

Implementing a membership fee model in nature tourism destinations can significantly influence architectural design. Steady revenue from memberships enables investment in eco-friendly infrastructure, energy-efficient buildings, passive ventilation systems, and locally sourced materials, reducing environmental impact and operational costs. This financial model also supports the development of communal spaces educational centers, guided trails, and conservation hubs encouraging repeat visits. Architecturally, this approach favors modular and adaptable designs that can evolve with the community's needs, ensuring the destination remains resilient and aligned with conservation goals. Exclusive areas or amenities for members private lounges, dedicated event spaces, or reserved parking can enhance the premium feel. Additionally, long-term design elements, personalized lockers or access to hidden gardens create a sense of belonging and luxury [102]. A sense of exclusivity and privilege is crucial. The architecture should reflect a high level of comfort, privacy, and tailored experiences, making members feel special and valued leading to repeated visits that are encouraged through well-maintained and premium facilities. The National Trust (primarily in the UK) is a well fitting example. This organization preserves historic and natural sites, offering members exclusive access to numerous natural reserves, gardens, and heritage properties. Membership provides benefits like reserved parking, private tours, and special event invitations, enhancing the visitor experience with a sense of belonging and exclusive access to beautiful natural landscapes. Mount St. Michael offers specific passes that provide benefits akin to membership for certain groups. National Trust members receive free admission to the castle and gardens, though they must pay for boat transfers when the causeway is submerged. The Mount also offers a "Locals' Pass" for residents of designated nearby postcode sectors, granting free access to the harbour and village during the main season. Another initiative, the "Mount Memories Pass," is available to individuals with a strong personal connection to the island, marking significant occasions or with historical ties to the Mount; this pass provides free access to the castle, gardens, village, and harbour (Figure 74) [21, 58].

Figure 74. Mount Saint Michael Path, United Kingdom [Photo by St Michaels Mount, Annex 7].

When focusing on donations as the primary monetisation model, open, inviting spaces are essential to encourage visitors to feel a connection with the cause. Architectural designs often reflect the mission of the location, with eco-friendly designs for conservation sites or simple, contemplative spaces for spiritual retreats. Seamlessly integrating signage encouraging donations. The space should inspire visitors to contribute. Transparency in design, like seeing behind-the-scenes efforts (e.g., animal care or conservation work), can motivate donations by showing the direct impact of their support. Diane Middlebrook Studios and Freedom Cove use inviting, open spaces that align with their missions creating an environment that encourages visitor connection and support. Transparent design elements show visible conservation efforts or art creation, foster a sense of community and inspire donations, allowing visitors to feel directly involved in supporting the cause. Funded through philanthropic contributions including a significant memorial donation honoring writer and teacher Diane Middlebrook the project prioritizes sustainability, minimal environmental impact, and creative inspiration over commercial considerations. This financial flexibility enabled CCS Architecture to design four compact live/work cabins, each tailored to foster solitude and creativity for resident artists. The studios are unified under a freestanding steel canopy that supports solar panels, providing renewable energy and shading the structures. Clad in unfinished red cedar, the cabins are designed to weather naturally, blending with the surrounding landscape. Interior finishes, carpets and porcelain tiles, were sustainably sourced from the architects' existing materials. The project's adherence to the Build It Green program's GreenPoint Rating system, achieving 87 points, underscores its environmental stewardship. The Diane Middlebrook Studios demonstrate how philanthropic funding can facilitate architecture that harmonizes with nature, supports artistic endeavors, and embodies sustainable design principles. (Figure 75) [50, 61, 81, 86, 99, 107, 111, 127].

Figure 75. Diane Middlebrook Studios, Cass Calder Smith Architecture + Interiors, The United States [Photo by Cass Calder Smith Architecture + Interiors, Annex 7].

Ticket sales for events require multi-functional venues with spaces designed to transform based on the type of event including stages, auditoriums, or flexible outdoor areas that can accommodate large gatherings or smaller, intimate setups. Efficient logistics, parking and entry/exit flow are crucial for event turnover [100]. Visitors expect smooth transitions from entry to event space, with adequate seating, views, and facilities. Event-specific architecture, amphitheatres or concert halls, enhances acoustics and visibility, directly impacting the enjoyment of performances or exhibitions. A strong example of a nature tourism site that utilizes ticket sales for specific events is the Royal Botanic Gardens, Kew in the United Kingdom which frequently hosts seasonal events like the popular "Christmas at Kew," where visitors purchase tickets for a curated light trail through the gardens. The venue's architectural layout includes open paths, gardens, and pavilion spaces that can be transformed for various events, from large-scale festivals to intimate workshops. The infrastructure supports smooth visitor flow with designated entry and exit points, event-specific lighting, and scenic pathways that enhance the natural beauty of the site. This flexibility allows Kew Gardens to host a variety of events while maintaining its mission of conservation and public engagement with nature.

Retail sales are frequently featured in nature tourism destinations. With layout including dedicated retail spaces positioned at strategic points, near exits or high-traffic areas. Stores should blend with the environment but be highly visible, with displays that encourage impulse buys. Retail zones need good lighting and ample space to browse comfortably [36]. Visitors are likely to spend more if retail spaces are inviting and integrated into the flow of the experience. Thoughtfully designed retail spaces enhance visitor engagement and offer a memorable takeaway that extends the experience beyond their visit. One Central Park in Sydney, Australia. includes retail spaces integrated with green walls and modern architecture. Positioned strategically to attract foot traffic, the retail zones offer visitors a seamless shopping experience as they navigate through the park's scenic and urban design elements, enhancing their engagement and enjoyment. Retail commerce is well integrated with urban nature tourism through its innovative architectural design. The development features a six-level retail podium housing the Central Park Mall, which includes a variety of shops, restaurants, and entertainment venues. Commercial hub is enveloped by extensive vertical gardens and green facades designed by botanist Patrick Blanc, creating a biophilic environment that attracts both shoppers and nature enthusiasts. The building's heliostat system reflects sunlight into the retail spaces, enhancing the natural ambiance and reducing energy consumption. Through a combination of retail functionality with sustainable design elements, One Central Park offers a unique experience that appeals to visitors seeking both urban amenities and a connection to nature (Figure 76).

Figure 76. One Central Park, Jean Nouvel [Photo by Jean Nouvel, Annex 7].

Along the Michinoku Coastal Trail in Japan (Annex 1), vending machines are strategically placed to serve dual purposes: providing refreshments to hikers during normal times and acting as emergency supply stations during disasters. These machines, commonly found even in remote areas, offer snacks drinks, and sometimes even goods from artisans, cheeses, or locally sourced gourmet ice cream and desserts to nature tourists, enhancing their hiking experience. In times of emergencies, flooding or natural disasters, these vending machines are designed to dispense their contents freely, ensuring that stranded individuals have access to food and water. This integration of retail and safety infrastructure exemplifies a practical approach to disaster preparedness, blending everyday convenience with emergency resilience, especially important in flood-prone coastal area of Michinoku trail (Figure). Fuji Fishing Harbor in Shimen District, New Taipei City, exemplifies the integration of retail commerce with local fishing traditions through its distinctive architectural design. The harbor's seafood market, renowned for its unique "Mexican hat" shaped roofs, was designed by architect Vicente Guallart and completed in 2011. This architectural choice provides shelter and creates an inviting atmosphere for visitors. The market offers a variety of fresh seafood, including the locally famous Crucifix Crab, and features numerous restaurants where patrons can have their purchases cooked on-site. This design fosters a direct connection between consumers and the local fishing industry, enhancing the cultural experience. During the winter of 2024, the harbor was visited by the author as part of a 600 km hike along the Taiwan Coastal Trail from Taipei to Dawu, highlighting its appeal as both a culinary destination and a point of interest for nature tourists (Figure) (Annex 1-2).

Figure 77. Fuji Fishing Harbor in Shimen District, New Taipei City, December, 2024, [Photo by Author, Annex 2].

Figure 78. Author near a 24/7 Vending machine along the Michinoku trail in Japan, November, 2022 [Photo by Andra Marta Babre, Annex 1-2].

Serving a primary need, accommodation fees are one of the most basic monetisation models frequently integrated into the natural or historical setting, often employing eco-friendly or heritage-sensitive designs. In selected cases from Annex 7, rooms frequently offer privacy, comfort, and unique views that align with the site's character. Shared spaces, lobbies, dining areas, or terraces facilitate relaxation and interaction. Visitors are immersed in the experience 24/7, so comfort, design aesthetics, and alignment with the location's theme are vital. Whether it’s eco-lodges or heritage hotels, the design should evoke the unique character of the site, enhancing the sense of immersion and adventure. Bobo Dioulasso Grand Mosque in Burkina Faso, a heritage site that functions as a religious building and charges an admission fee. Visitors can experience the unique Sudano-Sahelian architecture, with accommodations nearby that immerse guests in the cultural and historical essence of the mosque and its surroundings. The design reflects the local heritage, allowing for a deeply authentic and memorable stay (Figure 77).

Figure 77. Great Mosque of Djenné, Mali [Photo by BluesyPete, Annex 7].

Nature tourism destinations, monetized through branding and sponsorship must provide spaces for brand visibility, signage, product displays, or sponsored installations. Conference areas, media zones, or branded lounges can also be a part of the design. Event-specific infrastructure can accommodate sponsors while integrating with the overall site architecture.
Visitors benefit from enhanced services or events provided through sponsorship, free Wi-Fi, VIP areas, or brand-sponsored exhibitions. Over-branding can detract from the authenticity of the experience, so careful integration is necessary to maintain the location’s atmosphere. Varden and Flake House from Annex 1 shows how locations integrate sponsorships to support and enhance visitor services. *Varden*, a nature shelter, benefits from brand partnerships that contributes to maintenance or visitor amenities, while Flake House incorporates sponsorship for facilities and activities in a simple, nomadic setting. Conceived in 2006 for the "Petites machines à habiter" competition organized by CAUE 72, the project garnered attention and support, leading to its realization with a modest budget of €21,000 . This financial backing enabled the creation of a project that merges low-tech and high-tech elements, featuring an exterior resembling a broken stack of logs and a sleek, minimalist interior. Sponsorship facilitated its exhibition at the 2009 Estuaire Festival in Nantes, where it was showcased as part of the "Instant Carnet Island" installation, highlighting its role as a poetic shelter adaptable to various landscapes. Both sites balance sponsor visibility with immersive design, maintaining the site's atmosphere and ensuring brand integration aligns with visitor experience (Figure 78).

Figure 78. Flake House, OLGGA, France [Photo by OLGGA, Annex 7].

In nature tourism development, monetisation models are increasingly integrated with sustainability principles and architectural strategies to shape visitor experiences and operational efficiency. Time-based pricing models emphasize comfort and immersion, encouraging longer stays by prioritizing spatial qualities that support relaxation and connection with nature. Public grants and subsidies often target infrastructure that demonstrates minimal environmental impact, promotes accessibility, and aligns with ecological goals. Pay-per-activity settings require flexible, multi-use spaces that accommodate varied programmatic needs while remaining adaptable to seasonal or thematic changes. In contrast, admission fee models benefit from efficient circulation systems and access controls that optimize visitor flow and capacity management. Membership-based approaches focus on exclusivity, with architectural attention to detail and high-quality materials supporting a sense of belonging and encouraging repeat visits. Donation-driven sites use design as a narrative tool openness, transparency, and mission-aligned spatial expression foster emotional engagement and voluntary contributions. For event-ticketed attractions, modular and logistically sound layouts enable smooth transitions between functions, enhancing the quality of experience. Retail-based income streams rely on seamless integration of shops into natural visitor routes, ensuring visibility without disrupting the setting. Accommodation-based revenue depends on immersive, comfort-driven design that enhances the sensory connection to place. Finally, sponsorship-supported developments must strategically integrate brand elements without compromising the authenticity or ecological coherence of the site's design (Chart 6).

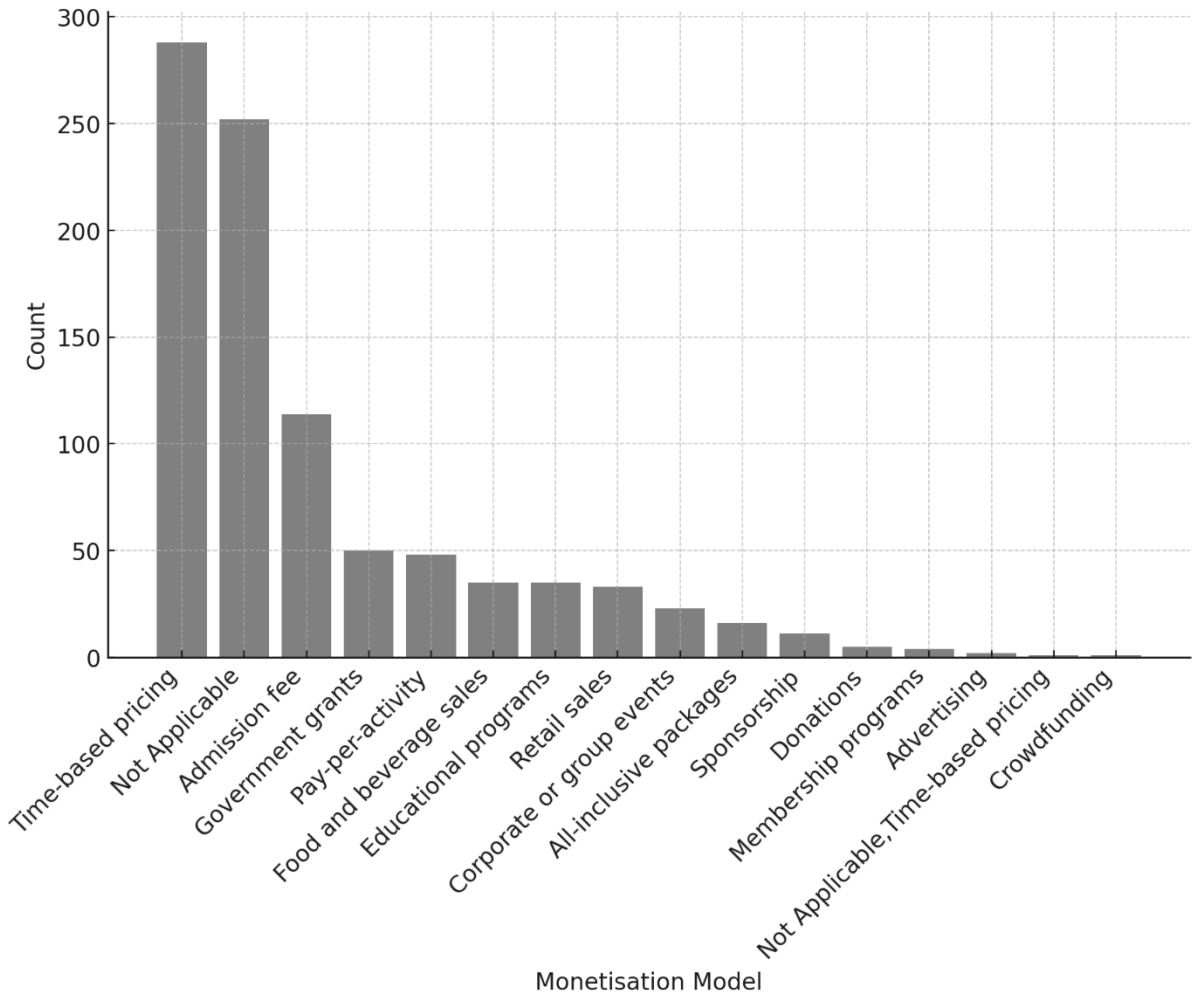

Chart 6. Primary monetisation models of selected nature tourism destinations Annex 7.

Key principles of sustainable nature tourism development include the conservation of natural resources and habitats, and the engagement of local communities. To conserve natural resources and habitats, it is important to protect the local environment from harmful activities pollution or overuse, and to ensure that nature tourism activities are carried out in a way that does not harm the local ecosystem. This involves limiting the number of visitors to a particular area or implementing strict regulations on activities hiking or camping. To engage local communities, it is important to involve them in the planning and management of nature tourism activities, and to ensure that they benefit from the economic opportunities provided by nature tourism. This can be achieved by providing training and support to local businesses or using local materials and labour in the construction of nature tourism infrastructure. One approach that can contribute to both the conservation of natural resources and the engagement of local communities is the use of converted destinations. Converted destinations, repurposed barns, warehouses, or factories, can be a sustainable and cost-effective way to create unique and interesting accommodations for tourists, while also preserving the history and character of a place and supporting the local community. Utilising this approach can be a cost-effective way to create unique and interesting accommodations for tourists, as they allow property owners to preserve the history and character of a place while also creating a new use for the property. This approach can help to support the local community by providing economic opportunities and contributing to the preservation of local landmarks and cultural heritage. Additionally, by using existing buildings or structures, converted destinations may also be able to minimize their

environmental impact and contribute to the overall sustainability of the nature tourism destination [20, 87]. Some of the industry favourites include but are not limited to Converted lighthouses and converted train stations. Accommodations that are in repurposed lighthouses may offer a unique and historic experience for guests. Converted lighthouses can be found in coastal areas and offer stunning views of the surrounding landscape. Converted train stations are in repurposed train stations and offer a unique and historic experience for guests. Converted train stations can be found in a variety of locations and may offer easy access to nearby nature tourism destinations. One of the rather well-known examples in the Baltic states is Ērgļi train station, which is in an old, previously abandoned train station and serves as a local nature tourism centre by organising yearly nature tourism festivals and providing restaurant services throughout the year. Several other old train stations get converted into pizza restaurants and small hotel amenities.

Sustainable nature tourism development also involves responsible resource management. This means using natural resources wisely and efficiently and minimizing the environmental impact of nature tourism activities. For example using renewable energy sources to power nature tourism facilities or implementing waste reduction and recycling programs. By incorporating sustainability principles into the development of nature tourism destinations, we can ensure that these destinations are managed in a way that benefits both the natural environment and local communities. Long-distance trails and human-powered travel have been gaining popularity in recent years as part of global sustainability efforts. These modes of transportation offer several benefits over traditional, carbon-emitting forms of travel, and can play a crucial role in reducing our overall carbon footprint. One of the main advantages of long-distance trails and human-powered travel is that they are carbon neutral. Unlike cars, trains, and aeroplanes, which release carbon dioxide and other greenhouse gases into the atmosphere, human-powered transportation does not produce any emissions. This makes it an ideal option for individuals and communities looking to reduce their carbon footprint and protect the environment. Such trails help connect natural and human-made attractions across the globe. A vital benefit of long-distance trails and human-powered travel is that they can help support local businesses. These trails often pass through rural areas, providing an opportunity for local businesses to attract tourists and generate revenue. In addition, the construction and maintenance of these trails can create jobs for residents [125].

Figure 79. Ērgļi train station [Photo by Andra Marta Babre, Annex 2].

As the global travel industry faced unprecedented challenges due to the COVID-19 pandemic, Airbnb shifted its focus to experiential marketing to differentiate its product from competitors and meet the changing needs of its customers. One key aspect of this shift was the promotion of nature-based destinations as a form of escapism and relaxation during the pandemic. Airbnb recognized that the COVID-19 pandemic had led to a significant increase in demand for nature-based experiences, as people sought out opportunities for relaxation and escape from the stresses of everyday life. In response, the company introduced a range of new nature-based experiences and destinations on its platform, including treehouses, glamping sites, and secluded cabins in natural settings. In addition to promoting nature-based experiences, Airbnb also differentiated its product from competitors like Booking.com by emphasizing the unique and immersive nature of its offerings. The company emphasized the personalized and local nature of its experiences, as well as the opportunity for guests to connect with hosts and local communities in meaningful ways. Overall, Airbnb's shift to experiential marketing during the COVID-19 pandemic was a successful strategy that allowed the company to differentiate its product from competitors and meet the changing needs of its customers. By promoting nature-based destinations as a form of escapism and relaxation, Airbnb was able to capitalize on the increased demand for nature-based experiences and differentiate its product from offerings on other platforms [20, 87, 126].

Benefits of long-distance trails and human powered travel can be monetized by developing a planning approach that considers the needs of local businesses and communities. This includes working with local governments and organizations to identify potential trail routes and engaging with local businesses to understand their needs and concerns. By incorporating the perspectives of local stakeholders, trail planners can ensure that the trails are developed in a way that benefits the community and supports local economic development. In addition, it is important to offset the carbon emissions associated with the construction and maintenance of long-distance trails. This can be done through a variety of methods, purchasing carbon credits or investing in renewable energy projects. By offsetting the carbon emissions associated with these trails, we can further reduce their overall environmental impact. Long-distance trails and human powered travel offer a number of benefits as part of global sustainability efforts. By promoting carbon neutral transportation and supporting local businesses, these trails can play a crucial role in reducing our carbon footprint and protecting the environment. By adopting a planning approach that considers the needs of local communities and offsets carbon emissions, we can maximize the benefits of these trails and support the transition to a more sustainable future.

Sustainable monetisation approaches are crucial for ensuring the long-term viability of nature tourism destinations while protecting natural resources and benefiting local communities. These approaches aim to balance economic gains with environmental conservation and social responsibility. Effective strategy is implementing a tiered pricing system, where entrance fees are adjusted based on factors like the time of year, visitor demand, and the environmental impact of activities. This can help manage visitor numbers, reduce overcrowding, and generate funds for conservation efforts. Development of eco-friendly accommodations and amenities can attract environmentally conscious tourists willing to pay a premium for sustainable options. These facilities can be designed using green building principles, renewable energy sources, and water-saving technologies, thereby reducing their environmental footprint and operational costs. Additionally, the revenues generated can be reinvested in local conservation projects and community development initiatives. Partnerships with local businesses and communities are also vital. By creating joint ventures or cooperative management arrangements, tourism operators can ensure that a significant portion of the

revenue stays within the local economy. This can involve employing local guides, sourcing food and supplies from local producers, and offering locally made crafts and products to tourists. Such practices boost the local economy and foster stewardship among community members, encouraging them to support and participate in conservation efforts [20, 32, 47, 80].

Adopting a "polluter pays" principle is another sustainable monetisation approach. This involves charging tourists for activities that have a higher environmental impact, off-road driving or certain water sports. The fees collected can be used to mitigate the environmental damage caused by these activities and fund rehabilitation projects. It is important to keep in mind that leveraging use of technology can enhance sustainable monetisation. For instance, the use of digital platforms to sell virtual experiences or educational content about the destination can generate additional revenue streams. These platforms can also facilitate donations and crowdfunding campaigns for conservation projects, engaging a global audience in supporting the sustainability of the nature tourism destination. By integrating sustainable monetisation approaches, nature tourism destinations can achieve a balance between economic development and environmental conservation, ensuring that pristine natural areas remain vibrant and viable for future generations [113, 114, 137]. The integration of sustainability principles in nature tourism development is paramount for preserving natural environments while fostering economic growth and community well-being. By prioritizing conservation, engaging local communities, and managing resources responsibly, nature tourism can offer enriching experiences that do not compromise ecological integrity. Innovative approaches like repurposing existing structures, converted lighthouses, train stations, and other unique accommodations minimize environmental impact and preserve cultural heritage and support local economies [40, 43].

The rise of long-distance trails and human-powered travel exemplifies a shift toward more sustainable, carbon-neutral tourism practices that benefit both visitors and local businesses. Case studies like Airbnb's strategic pivot during the COVID-19 pandemic highlight the growing demand for nature-based and experiential travel options, demonstrating the industry's potential to adapt and thrive sustainably. Sustainable monetization strategies, including tiered pricing systems, eco-friendly accommodations, community partnerships, and leveraging technology, are essential for balancing economic objectives with environmental stewardship. By adopting these practices, nature tourism destinations can ensure their viability for future generations, contributing to a more sustainable and equitable global tourism landscape. Embracing sustainability protects natural resources and enhances the overall value and appeal of nature tourism, creating lasting benefits for all partners involved.

CONCLUSIONS

Experiential nature tourism has evolved significantly, shifting from passive modes of sightseeing to participatory and experiential engagement. This transformation reflects broader societal changes in leisure expectations, where visitors seek meaningful, personal connections with natural environments. As a result, experiential nature tourism infrastructure is increasingly designed to facilitate emotional, educational, and sensory experiences. Architectural planning must therefore accommodate smaller-scale, decentralized models that distribute visitor flows and encourage longer, more immersive stays, mitigating overtourism. The built environment plays a crucial role in shaping experiential nature tourism by integrating natural elements like topography, water bodies, and vegetation. Purpose-built architectural features can improve immersion and sustain visitor interest while minimizing ecological disruption.

Degree to which experiential nature tourism architecture can engage with the landscape varies widely, from isolated buildings inserted into the scenery to projects that are physically and conceptually embedded within natural systems. While many developments remain adjacent to nature, higher-impact experiences and ecological benefits are found where design is carefully integrated with topography, materials, and ecological processes demanding a nuanced design process to avoid commodification or environmental degradation. The architectural challenge is achieving balance between visibility, utility, and harmony with the environment. The effectiveness of experiential nature tourism destinations depends on their ability to create immersive experiential environments that engage multiple senses. The choice of materials, climate responsive design, and integration of storytelling elements can enhance visitor satisfaction and ecological awareness.

The experiential nature tourism sector is influenced by shifts in traveller preferences, environmental policy, and spatial dynamics. Demand is rising for sites that combine aesthetic quality, authenticity, and ease of access. There is growing interest in ‘near nature’ experiences close to urban areas, as well as a preference for destinations with strong place identity and low environmental impact. Regulatory frameworks increasingly require compliance with conservation goals, prompting architectural innovation in designing for minimal footprint and modular flexibility. As a result, experiential nature tourism architecture must address economic, ecological, and experiential dimensions simultaneously.

The effectiveness of a experiential nature tourism site is closely linked to its experiential qualities. How it tells a story, responds to local climate, and engages the senses through material choices. Immersive environments enhance visitors' emotional connection to place, which in turn supports educational and stewardship goals. Elements like scent, sound, light, and temperature must be intentionally designed, not simply left to chance. When architecture becomes a medium for experiences in nature through sensory and narrative engagement, it can leave lasting impressions and cultivate deeper respect for nature.

Experiential nature tourism architecture that draws on local materials, traditions, and ecological knowledge offers more resilient and contextually appropriate tourism experiences reducing environmental impact through shorter material cycles and better climate fit and increasing community acceptance and user appreciation. Engagement with local ecosystems and cultural landscapes allows for a richer interpretation of place and enhances the uniqueness of each site. The result is a visitor experience that is less generic and more tied to the specific qualities of the destination.

The visual appeal of experiential nature tourism architecture significantly shapes tourist perceptions and online marketing success. *Instagram* and social media friendly features, recognizable silhouettes, and photogenic views amplify a destination's visibility and appeal. Well-designed structure can become a functional space and a tool for communication. Architecture playing a dual role in experiential nature tourism, shaping the on-site experience and serving as a symbol that attracts visitors through digital platforms. This signals the need for intentional design that resonates with contemporary media behaviours with focus on environmental and cultural integrity.

Engaging local stakeholders in the design and development of experiential nature tourism infrastructure leads to outcomes that are more sustainable, inclusive, and responsive to user needs. Workshops that involve residents, local entrepreneurs, and visitors facilitate the co-creation of solutions that align with tourism goals and community interests. Participatory approach increases the legitimacy, adaptability, and long-term stewardship of experiential nature tourism sites contributing to social innovation and capacity building within rural and nature-based communities.

Digital technologies offer tools to enhance the planning and user experience of experiential nature tourism architecture. Geospatial analysis aids in selecting appropriate locations, AR/VR and smart visitor apps enrich interpretation and navigation. Monitoring technologies support adaptive management by providing real-time data on visitor flows and environmental impacts, enabling higher precision in designing personalized experiences for users, and data-driven decisions for operators balancing technological innovation with accessibility, privacy, and the preservation of a sense of remoteness.

Successful experiential nature tourism architecture applications combine economic viability with ecological responsibility. Profitability can be achieved through well designed experiences that emphasize quality over quantity, attract high value tourists and spread demand seasonally and spatially. Monetization strategies e.g. ticketing, partnerships, premium services, must avoid extractive practices that degrade the environment. Long-term success for each new destination depends on integrating sustainability principles across all stages from design and construction to maintenance and marketing, ensuring that tourism leaves a positive impact on ecosystems that enable nature-based experiences.

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ANNEXES

Annex 1 Summary from organised outdoor tours

To get better acquainted with Nature tourism challenges and specifics, Authors approach involved 18 441 km of human powered adventures, covered during on-site investigations in Japan, Korea, Taiwan, Central and Northern Europe, Kenya and Northern parts of India as well as analysis of more than 1000 destinations (Annex 7). Author founded NGO Movement Spontaneous on 2017 in order to find likeminded explorers. Maps created in group workshops show that participants usually choose to skip sections of trail that don't feature natural highlights. The main important ones are – list of destinations as selected by participants.

From the organized mapping workshops most, marked destinations plotted before on-site adventures were as follow (Figure 80):

- Buildings: 6,760 locations
- Nature: 4,389 locations
- Public Transport and Stations: 2,073 locations
- Infrastructure: 675 locations

Figure 80. Comparison of Nature tourism destination markers by type.

Methodology for Movement Spontaneous Organized Mapping Mondays Workshops

Workshop Overview: Movement Spontaneous Mapping Mondays workshops were organized with goal of allowing participants to collaboratively plan their adventures. These workshops aim to blend collective input and expert guidance to create unique and personalized trail maps. The process leverages a mix of crowd-sourced data, advanced mapping tools, and real-time satellite imagery to ensure accurate and up-to-date route planning focusing on selecting interesting destinations on map and forming a route. After performing the activity participants mark the completed route on map and check which sections are being skipped or chosen not to visit. Aim for these mapping workshops was to counterbalance the destination selection process in nature tourism database where destinations with most publicity were selected. In mapping workshops instead of focusing on a specific destination participants focused on areas of interest along the trail routes or visited regions enabling more organic selection process by following the potential route of the long-distance adventure and selecting points that raised interest.

Planning and Initial Mapping: Kick-off Session - Introduction to the workshop's objectives and tools. Overview of the mapping process and the roles of participants and guides. Google My Maps Platform. Participants and guides collaboratively mark points of interest (POIs) on a shared Google My Maps platform. Each POI includes details like terrain type, scenic value, difficulty level, accessibility, possible entrance fees and personal feedback or recommendations.

1. **Data Collection**: Identification of potential trails using Strava maps, emphasizing participant-selected POIs and heat data to highlight popular routes. Consideration of less active trails to avoid crowding, ensuring these trails are passable and meet adventure criteria.
2. **Route Design and Optimization**:
    a. Strava Maps Integration: Import selected points and heat data from Strava to design preliminary routes.
    b. Utilize Strava's heat maps to assess trail popularity and activity levels.
3. **Route Adjustments**:
    a. Adjust routes to include less active trails as per participant requests while ensuring these trails are still accessible and safe.
    b. Optimize routes for scenic value, difficulty level, and overall experience based on participant feedback and guide expertise.
4. **Remote Location Assessment**: Use real-time satellite mapping for remote destinations to verify accessibility, focusing on factors like snow cover, trail conditions, and potential hazards. Integrate satellite imagery data into the route planning to ensure feasibility and safety.
5. **Finalization and Export**:
    a. Route Verification: Perform a thorough review of the designed routes, incorporating any last-minute adjustments based on participant and guide input. Ensure all routes are well-documented with necessary details for ease of navigation.
    b. Exporting Maps: Export the finalized routes from Google My Maps to printable files. Utilize Esri systems to convert digital maps into high-quality printable formats for use on the trail.
6. **Distribution**: Distribute the printable maps to participants. Provide digital copies for backup and use with GPS devices or smartphones.

7. **Post-Adventure Review**:
    a. Feedback Collection: Gather feedback from participants post-adventure to assess the accuracy and enjoyment of the planned routes. Identify areas for improvement in future workshops.
    b. Data Integration: Integrate participant feedback and new data into the Google My Maps platform for continuous improvement.

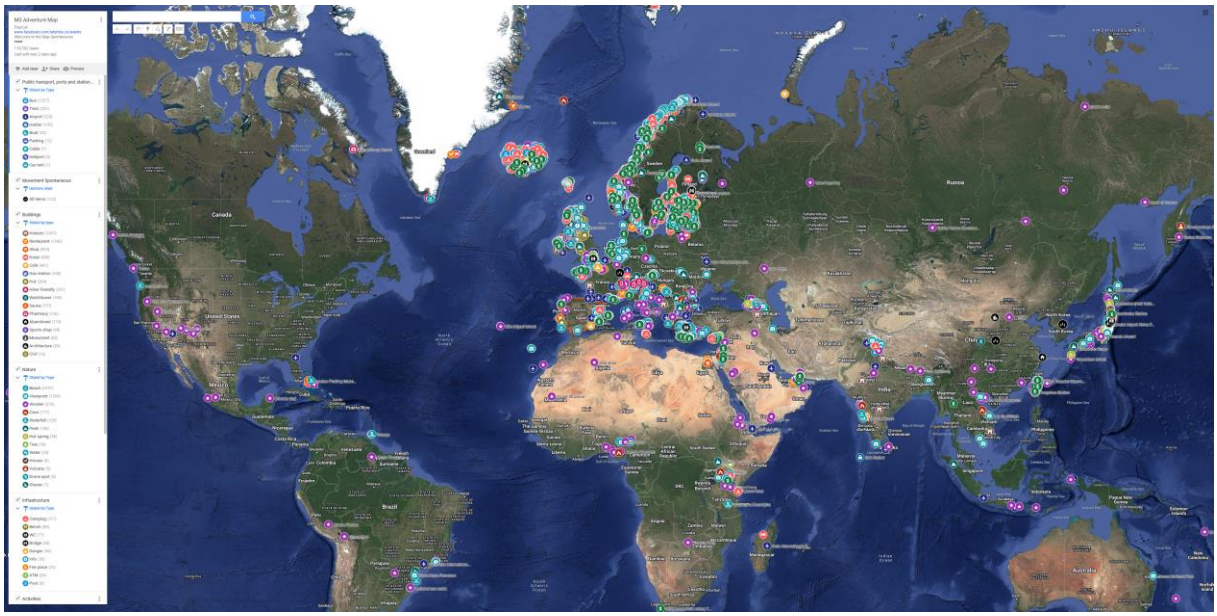


Figure 81. Google My Maps interface used during outdoor tours destination mapping (M. Babris).

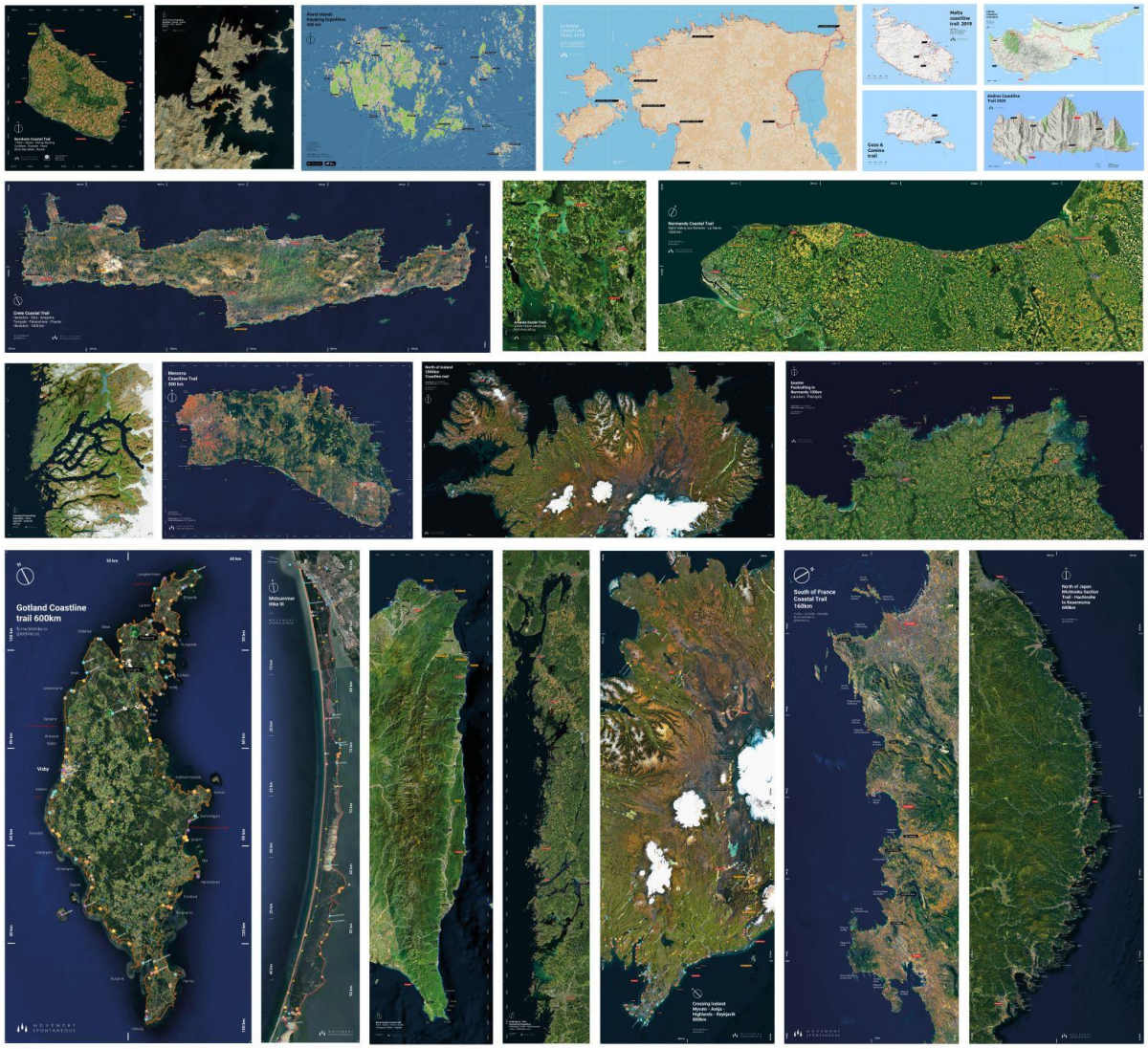


Figure 82. Overview of plotted expedition maps used during on-site tours, used for marking daily progress and deviations from expected route M.Babris, G.Tietböhl-Martinelli.

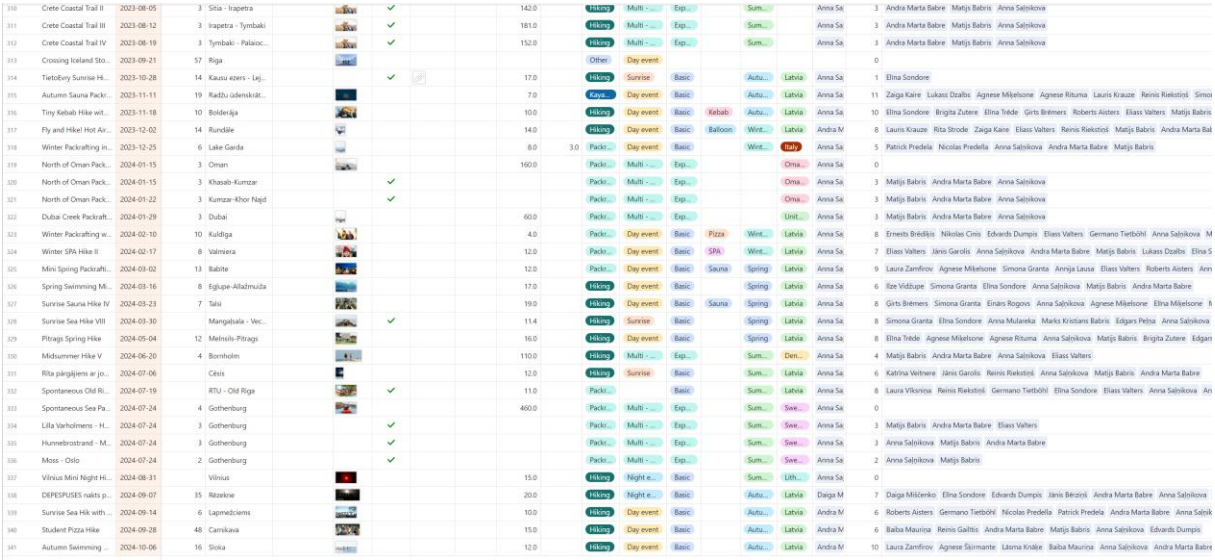


Figure 83. Screenshot from descriptive online table of 352 organized outdoor tours during the research period with locations, routes, organizers and participants Full table online: https://ej.uz/entaevents.

Item Nr.	Start Date	Route	Length (km)	Event name	Nr. of participants
001	2014-11-17	Razna lake - Rezekne	20.0	Ķemeri	5.0
002	2015-03-06	Skulte-Saulkrasti	17.0	Skulte	3.0
003	2015-04-03	Ogre-Jaunogre	15.0	Ogre	3.0
004	2015-04-30	Sigulda	18.0	Sigulda	9.0
005	2015-06-19	Jelgava-Cena	25.0	Jelgava	5.0
006	2015-07-31	Lielvārde-Ķegums	15.0	Lielvārde	6.0
007	2015-09-25	Garupe-Carnikava	15.0	Garupe	3.0
008	2015-10-03	Melturi-Līgatne	32.0	Amata trail	9.0
009	2015-10-23	Dole-Salaspils	18.0	Salaspils	5.0
010	2015-11-06	Sloka-Vaivari	21.0	Ķemeri - Spontaneous 10	86.0
011	2015-11-17	Klīves-Cenas tīrelis	25.0	18th November Hike	19.0
012	2015-11-27	Mangaļsala-Garciems	17.0	Project L	28.0
013	2015-12-26	Bauska	30.0	Spontānais Rūdolfs	28.0
014	2016-01-08	Silciems-Inčukalns	31.0	Wild Hike I	48.0
015	2016-01-14	Pulpit Rock	26.0	Spontaneous Stavanger	19.0
016	2016-02-05	Cēsis	24.0	Spontaneous Cēsis	21.0
017	2016-03-03	Sigulda	50.0	Gathering of the Tribes	13.0
018	2016-03-18	Dobele	18.0	Spring Fever	21.0
019	2016-03-25	Agenosta	23.0	Spring Kayaking	33.0
020	2016-04-03	Strasbourg - La Vancelle	55.0	France	6.0
021	2016-04-08	La Vancelle	9.0	La Vancelle	7.0
022	2016-04-29	Mazsalaca	30.0	Bus Spontaneous	125.0
023	2016-05-03	Skulte	21.0	Skulte Minihike	26.0
024	2016-05-27	Kolka-Dubulti	136.0	BK 136km	10.0
025	2016-06-17	Dobele-Pokaiņi	37.0	Storm Spontaneous	16.0
026	2016-06-27	Ķegums	21.0	TreeHouse Place	4.0
027	2016-07-02	Ķegums	29.0	TreeHouse hike	15.0
028	2016-07-14	Rāznas ezers	42.0	Latgale hike	2.0
029	2016-07-15	Kuldīga	17.0	Hikitivus 16	11.0
030	2016-07-29	Lode	25.0	Caveman hike	21.0
031	2016-08-04	Liepāja-Klaipeda	103.0	Sea Chill	5.0
032	2016-08-10	Daugavpils	103.0	Lost in Latgale	16.0
033	2016-09-03	X caves	17.0	Untitled	24.0
034	2016-09-10	Bolderāja	7.0	Bolderāja	5.0
035	2016-09-30	Agenosta	40.0	Autumn Kayaking	50.0
036	2016-10-29	Sigulda	10.0	Autumn Colors	95.0
037	2016-11-17	Limbaži	28.0	Night Hike	30.0
038	2016-12-26	Līčupe	23.0	Where is Rudolph?	13.0
039	2016-12-30	Ādaži	25.0	New Year hike	29.0
040	2017-01-13	Lapmežciems	21.0	Winter hike	17.0
041	2017-02-04	Ainaži	60.0	Wild hike 17	50.0
042	2017-02-14	Skogafoss	34.0	Spontaneous Iceland	16.0
043	2017-02-16	Hvergardi	20.0	Hot Springs	21.0
044	2017-02-18	Koknese-Pļaviņas	35.0	Student Hike	105.0
045	2017-03-10	Zaķumuiža	22.0	Minihike II	21.0
046	2017-03-25	Dunte-Svētciems	48.0	Earth Day Hike	47.0
047	2017-04-08	Oslo	70.0	Ostmarka Spring Hike	10.0
048	2017-04-14	Jelgava	43.0	Spring Kayaking II	41.0
049	2017-04-29	Daugmale	19.0	Nāves Sala	33.0
050	2017-05-03	Strenči	32.0	Minihike	8.0
051	2017-06-10	Pļaviņas	24.0	Student hike ii	50.0
052	2017-06-21	Usma	53.0	Midsummer hike	5.0
053	2017-07-01	Seda-Strenči	37.0	Seda hike	13.0
054	2017-07-20	Kandava	15.0	Adventure time	11.0
055	2017-07-29	Naujoji Akmene	25.0	Quarry hike	15.0
056	2017-08-02	Malpils	19.0	Adventure time II	16.0

057	2017-08-04	Ventspils-Liepāja-Klaipeda	222.0	222km	20.0
058	2017-08-17	Puikule	24.0	Adventure time III	9.0
059	2017-08-23	Ikšķile	21.0	Meinard isle hike	30.0
060	2017-08-26	Sloka	29.0	Finns Kayaking trip	22.0
061	2017-08-29	Aagenosta	11.0	KIC Kayaking	2.0
062	2017-09-28	Sigulda	23.0	Student hike iii	130.0
063	2017-10-13	Tukums	23.0	Black Friday	17.0
064	2017-10-28	Rumbula	24.0	Jake's Autumn Kayaking	18.0
065	2017-11-10	Lilaste	15.0	Explore Latvia	53.0
066	2017-11-17	Cēsis	29.0	Student Hike IV	43.0
067	2017-12-16	Sabile	18.0	WInter minihike	15.0
068	2017-12-25	Vitrupe-Ķirbiži	27.0	Finding Santa	14.0
069	2017-12-29	Seda-Strenči	37.0	Treehouse sauna hike	30.0
070	2018-01-06	Saulkrasti	14.0	Winter Minihike	23.0
071	2018-01-12	Veģi-Renda	24.0	Winter Cave Hike	27.0
072	2018-01-20	Dole island	24.0	Winter minihike II	9.0
073	2018-01-26	Tukums	22.0	Winter Sauna II	21.0
074	2018-02-02	Skrīveri-Aizkraukle	28.0	Winter Sauna hike III	26.0
075	2018-02-11	Koli	7.0	Spontaneous Finland	5.0
076	2018-02-13	Repovesi	51.0	Spontaneous Finland	5.0
077	2018-02-22	Valmiera-Cēsis	54.0	Wild hike III	31.0
078	2018-03-03	Priedaine-Bolderāja	25.0	Ice Walking hike	12.0
079	2018-03-10	Jelgava	23.0	Student Hike V	88.0
080	2018-03-18	Saulkalne	15.0	Sunrise hike	38.0
081	2018-03-18	Mangaļsala	5.0	Ice Kayaking challange	20.0
082	2018-03-25	Ķemeri	25.0	Explore Latvia II	82.0
083	2018-03-31	Gulbene-Stāmeriena	30.0	Easter Hike	25.0
084	2018-04-07	Saulkrasti	11.0	Sunrise Minihike II	31.0
085	2018-04-14	Baltezers	33.0	Spring Kayaking III	49.0
086	2018-04-18	Bulgaria	63.0	Spring in Balkans	36.0
087	2018-05-05	Ķegums	25.0	TreeHouse Hike II	58.0
088	2018-05-20	Bauska-Ritausmas	17.0	Sunrise minihike III	13.0
089	2018-05-28	Aagenosta	12.0	Sunrise Kayaking	15.0
090	2018-05-29	Poli-Paphos	110.0	Cyprus Spontaneous	4.0
091	2018-06-04	Saurieši	15.0	Sunrise minihike IV	10.0
092	2018-06-09	Aagenosta	20.0	Midnight Kayaking	24.0
093	2018-06-29	Cēsis-Āraiši	25.0	LAMPA TreeHouse hike	74.0
094	2018-07-05	Ozolsala-Krustpils	28.0	SPA night hike	11.0
095	2018-07-15	Tartu-Narva	250.0	Estonia Tartu-Narva #ECT18	15.0
096	2018-07-21	Narva-Tallin	300.0	ECT Narva - Tallin	4.0
097	2018-07-22	Tallin-Parnu	650.0	ECT Tallin - Parnu	4.0
098	2018-08-15	Parnu-Ainaži	100.0	ECT Parnu - Ainaži	4.0
099	2018-08-29	Bolderāja-Ruhnu	18.0	Sailing Spontaneous	22.0
100	2018-09-08	Ērgļi- Ķeipene	30.0	100th night hike	45.0
101	2018-09-15	Mālpils-Sidgunda	20.0	Sauna minihike	23.0
102	2018-09-28	Dole-Salaspils	18.0	Student hike VI	43.0
103	2018-10-25	Pūre - Sabile	41.0	Autumn kayaking III	8.0
104	2018-11-02	Edinbourgh	11.0	Scotland sunrise minihike	4.0
105	2018-11-03	Glasgow, Devil's pulpit	25.0	Scotland cave hike	3.0
106	2018-11-15	Priedaine	5.0	Floating Sauna microhike	8.0
107	2018-11-24	Oliņas-Strenči	20.0	Winter Kayaking	14.0
108	2018-12-22	Garkalne-Zaķumuiža	15.0	Sunrise Sauna hike	18.0
109	2018-12-27	Valmiera-Brenguļi	18.0	Christmas minihike	14.0
110	2018-12-28	Ķegums-Daugmale	30.0	Floating Sauna hike	6.0
111	2019-01-05	Trepe-Kūkas	23.0	Day Hike	22.0
112	2019-01-11	Pārogre-Vāverkrogs	28.0	Kangari night hike	8.0
113	2019-01-19	Bērzciems-Mērsags	17.0	Sunrise sea hike	30.0
114	2019-01-26	Jaunkalsnava-Mārciena	26.0	Winter SPA hike	8.0
115	2019-01-31	Malta, Gozo	280.0	Spontaneous Malta	10.0

116	2019-02-17	Cena-Olaine	18.0	Yes Hike	42.0
117	2019-02-24	Dunikas purva taka	11.0	Spring Hiking trip	15.0
118	2019-03-03	Ādaži-Carnikava	18.0	Ice Kayaking II	71.0
119	2019-03-10	Jaunolaine-Olaine	15.0	Kebab hike	19.0
120	2019-03-17	Ogre-Saulkalne	18.0	Sunrise Kayaking II	16.0
121	2019-03-22	Brighton-Eastbourne	47.0	Brexit Brighton	6.0
122	2019-03-24	Amesbury-Stonehenge	12.0	Brexit Stonehenge	6.0
123	2019-03-25	NaN	110.0	Brexit Scotland	7.0
124	2019-04-07	Olaine-Ozolnieki	29.0	Sunrise Kayaking III	41.0
125	2019-04-18	Trolltunga	28.0	Trolltunga hike	13.0
126	2019-04-20	Bergen	30.0	Bergen night hike	11.0
127	2019-04-22	Tjome-Verdens Ende	36.0	Tjome night hike	9.0
128	2019-04-27	Ozolnieki-Jelgava	18.0	Midnight Kayaking II	22.0
129	2019-05-04	Ventspils	27.0	Student Hike VII	47.0
130	2019-05-11	Ķegums-Jaunjelgava	25.0	Treehouse Hike III	18.0
131	2019-05-17	Bolderāja - Abruka	25.0	Spring Sailing	19.0
132	2019-05-26	Inčukalns - Ādaži	27.0	Gauja Kayaking	4.0
133	2019-06-01	Bulgaria	50.3	Spontaneous Bulgaria	1.0
134	2019-06-02	Garciems - Carnikava	15.0	Sunrise Sea Hike II	74.0
135	2019-06-08	Sigulda	25.0	Sigulda SPA Hike	14.0
136	2019-06-16	Vakarbuļļi-Aagenosta	26.8	Sunrise Kayaking IV	14.0
137	2019-06-21	Kolka - Ventspils	120.0	Midsummer hike II	22.0
138	2019-06-29	Cēsis	30.0	LAMPA hike II	79.0
139	2019-06-29	Kuiviži	0.0	Youth Sailing challenge	22.0
140	2019-07-06	Skulte - Zvejniekciems	30.0	Sea & Sauna hike	22.0
141	2019-07-09	Paphos-Larnaka	180.0	Cyprus CT 600km I	4.0
142	2019-07-16	Larnaka-Cape Apostolos	240.0	Cyprus CT 600km II	4.0
143	2019-07-25	Cape Apostolos-Girne	210.0	Cyprus CT 600km III	2.0
144	2019-08-09	Bauska-Jelgava	50.0	Summer Kayaking	3.0
145	2019-08-16	Bolderāja - Kihnu	27.2	Kihnu Sailing	22.0
146	2019-08-25	Bulduri - Lielupe	14.0	Sunrise Sea hike iii	58.0
147	2019-08-30	Lucavsala	19.0	Inovuss Night hike	22.0
148	2019-08-31	Girne-Poli	160.0	Cyprus CT 600km IV	2.0
149	2019-09-07	Ērgļi - Kučuru Dzirnavas	35.0	150th Night Hike	27.0
150	2019-09-14	Stirniene - Atašiene	23.0	Day Hike II	9.0
151	2019-09-21	Strenči-Valmiera	26.0	Autumn Kayaking IV	29.0
152	2019-09-27	NaN	17.3	Stockholm Cruise hike	12.0
153	2019-10-06	Baloži-Olaine	25.0	Sunrise Pizza hike	65.0
154	2019-10-12	Valmiera-Cēsis	52.4	Autumn Kayaking V	19.0
155	2019-10-17	NaN	26.2	Gothenburg hike	2.0
156	2019-10-18	Hönö, Öckerö	34.8	Gothenburg hike II	2.0
157	2019-10-26	Bauska-Vecumnieki	46.0	Autumn Sauna hike	19.0
158	2019-11-03	Tukums	24.0	Sunrise Sea Hike IV	41.0
159	2019-11-10	Babīte-Bolderāja	16.0	Sunrise Kebab hike	54.0
160	2019-11-17	Mt Kenya	39.7	Mt. Kenya hike	4.0
161	2019-11-23	NaN	12.4	Hell's Gate hike	3.0
162	2019-11-24	Mombasa -	67.9	Mombasa Coastline hike	2.0
163	2019-12-01	Aagenosta-Bumbu kalniņš	24.9	Ice Kayaking III	11.0
164	2019-12-08	Jugla - Vecāķi	27.0	Sunrise Sea Hike V	27.0
165	2019-12-15	Sigulda - Inčukalns	18.0	Winter Kayaking II	11.0
166	2019-12-21	Nīgrande - Skrunda	40.0	Wild Sauna Hike	20.0
167	2019-12-26	Ogre - Ikšķile	12.0	Christmas Sauna minihike	26.0
168	2019-12-29	Ogre - Tīnūži	23.0	NY Sauna hike	13.0
169	2020-01-05	Garkalne - Carnikava	20.0	NY Pizza hike	45.0
170	2020-01-12	Jelgava	27.0	Sunrise Sushi Hike	49.0
171	2020-01-18	Bolderāja	15.0	Sunrise Sea Hike VI	41.0
172	2020-01-25	Briģi - Zilupe	10.0	Mobilly Night Hike	19.0
173	2020-02-02	Ķegums - Baldone	25.9	Wild Sauna hike II	28.0
174	2020-02-07	Athens, Greece	110.0	Andros 1st Week	4.0

175	2020-02-14	Langstiņi	12.0	Valentines Day Night Hike	41.0
176	2020-02-15	Athens, Greece	100.0	Andros 2nd Week	3.0
177	2020-02-29	Smiltene	23.0	Hot Air Balloon Winter Expedition	5.0
178	2020-03-01	Inčukalns (Meža Miers)	20.0	Yes Hike II	26.0
179	2020-03-02	Kutaisi	29.0	Borjomi Spring Hike	16.0
180	2020-03-02	Kutaisi	7.0	Georgia road trip	16.0
181	2020-03-15	Garkalne	8.0	Sunrise Corona hike	6.0
182	2020-03-23	Rundāle	2.0	Hot Air Balloon Corona Expedition	4.0
183	2020-03-27	Ļaudona	22.0	C Spring Camping	7.0
184	2020-04-04	Skrīveri Jumprava	16.0	C Spring Camping 2	5.0
185	2020-04-09	Madona - Veckalsnava	28.3	C Easter Hike	4.0
186	2020-04-18	Daugmale - Baldone	15.0	C Spring Camping 3	3.0
187	2020-04-26	Krievupe - Garkalne	10.0	C Spring Camping 4	2.0
188	2020-04-30	Jaunkalsnava - Ļaudona	33.0	C Spring Camping 5	2.0
189	2020-05-09	Garkalne - Jugla	20.0	C Spring Camping 6	6.0
190	2020-05-16	Lubāna - Švāns	25.0	Midnight Kayaking III	13.0
191	2020-05-23	Cēsis - Sigulda	40.0	Spring Kayaking IV	10.0
192	2020-05-29	Ķekava	15.0	Sunrise Horse Hike	17.0
193	2020-05-30	Usma	40.0	Lake Kayaking	20.0
194	2020-06-05	Lilaste	18.0	Wake Sauna SUP Hike	12.0
195	2020-06-07	Sigulda	20.0	Hot Air Balloon Spring Expedition	16.0
196	2020-06-12	Dzērumi - Ezītis	33.0	Horse Kayaking	7.0
197	2020-06-19	Klaipēda - Nida - Klaipēda	120.0	Midsummer Hike III	17.0
198	2020-06-27	Garkalne	15.0	Sunrise Student Hike	22.0
199	2020-07-03	Rūjiena	25.0	Ice Cream Night Sauna Hike	31.0
200	2020-07-04	Rūjiena	20.0	Hot Air Balloon Summer Expedition	6.0
201	2020-07-16	Ķekava - Rīga	20.0	\t Midnight Sauna Kayaking	15.0
202	2020-07-18	Aland Islands	12.0	\t Sea Kayaking in Aland Islands	7.0
203	2020-07-18	Madona	0.0	Madona Hot Air Balloon Expedition	7.0
204	2020-07-18	Aland Islands	500.0	Aland Expedition 400 km	2.0
205	2020-08-01	Mazsalaca - Staicele	38.0	\t Kristaps Kayaking Adventure	9.0
206	2020-08-08	Limbaži	20.0	\t Lauris Lake Hike	8.0
207	2020-08-10	Aland Islands	15.0	\t Sea Kayaking in Aland Islands II	16.0
208	2020-08-20	Rīga - Ventspils	0.0	Sailing Challenge II	16.0
209	2020-08-21	Ventspils - Rīga	0.0	\t FRESH Sailing	16.0
210	2020-08-28	Stropu ezers	16.0	Midnight Lake Kayaking	6.0
211	2020-08-29	Daugavpils	0.0	Daugavpils Hot Air Balloon Expedition	7.0
212	2020-09-04	Aland Islands	15.0	\t Sea Kayaking in Aland Islands III	8.0
213	2020-09-05	Cēsis	16.0	\t LAMPA Interreg Hike	70.0
214	2020-09-06	Cēsis	30.0	\t Interreg30 Anniversary Hike	55.0
215	2020-09-12	Ērgļi-Koknese	36.0	200th night hike	30.0
216	2020-09-19	Ērgļi	15.0	Follow the Balloon Sunrise Hike	15.0
217	2020-09-25	Ķekava	16.0	Coffee Sauna Hike	31.0
218	2020-10-02	Alūksne	25.0	Autumn Sauna Hike	9.0
219	2020-10-10	Lilaste - Gauja - Lilaste	18.0	SSE Hike	30.0
220	2020-10-17	Sabile	10.0	Hot Air Balloon Microadventure	8.0
221	2020-10-18	Zaķumuiža - Jugla	25.0	Wild Kayaking With Tiny Waterfalls	18.0

222	2020-10-24	Mazsalaca - Staicele	38.0	Autumn Sauna Kayaking	6.0
223	2020-11-01	Baloži	15.0	Sunrise Sauna Hike II	33.0
224	2020-11-08	ādaži - Limbaži	15.0	Airplane Hike	9.0
225	2021-03-25	Utö	NaN	Easter Cruise Hike	NaN
226	2021-05-01	Ādaži - Spilve	6.0	Airplane Adventure hike	16.0
227	2021-05-15	Dzirnezers	17.0	Sunrise Lake Kayaking	23.0
228	2021-05-22	Vecdaugavas Upe	20.0	Old Daugava Kayaking	21.0
229	2021-05-29	Gauja	12.0	Hammock Nation Sea Hike	16.0
230	2021-06-05	Jelgava	10.0	Sunrise Hot Air Balloon Hike	21.0
231	2021-06-13	Lilaste	15.0	Almost Sea Kayaking	36.0
232	2021-06-18	Liepāja - Pāvilosta	50.0	Midsummer Hike IV	14.0
233	2021-06-24	Islande	1800.0	North of Iceland Expedition	4.0
234	2021-07-17	Kuiviži - Ruhnu isle	NaN	Ruhnu Sea Expedition	13.0
235	2021-08-02	Kuiviži - Ruhnu isle	NaN	Roņu salas ekspedīcija LIELVĀRDS	20.0
236	2021-09-11	Pļaviņas - Koknese	30.0	Pļaviņas - Koknese - 2 Day Kayaking	13.0
237	2021-09-18	Babītes ezers	20.0	Wild Lake Kayaking	9.0
238	2021-09-18	NaN	20.0	SSE Hike 2	50.0
239	2021-09-25	Skulte-Zvejniekciems	18.0	Midnight Sauna Hike	16.0
240	2021-10-01	Tulpesaare	10.0	Saaremaa Sailing Expedition	8.0
241	2021-10-09	Bumbu Kalniņš - Bolderāja	7.0	Mini Kebab Hike	26.0
242	2021-10-15	Seceda	17.0	North of Italy I	4.0
243	2021-10-15	Ancona	10.0	North of Italy II	4.0
244	2021-10-15	Tri Cime	19.0	North of Italy III	4.0
245	2021-10-17	Ķīšezers Zvejniekciems	7.0	Secret Sauna hike	13.0
246	2021-11-28	Krievupe - Zaķumuiža	15.0	Secret Sauna Hike II	20.0
247	2021-12-04	Grundzāle-Vidaga	12.0	Secret Sauna Hike III	4.0
248	2021-12-17	Ventspils-Vārves	15.0	Ventspils hike	3.0
249	2021-12-27	Nīgrande - Skrunda	35.0	2-Day Ice Kayaking with Sauna	8.0
250	2022-01-07	Sakstagals - Viļāni	19.0	Wild Sauna Hike III	18.0
251	2022-02-04	Gemeinde Grünbach am Schneeberg	22.5	Austria Spring Hike	3.0
252	2022-02-16	Mahon-Ciutadella	100.0	Menorca Coastline Trail I	8.0
253	2022-02-22	Ciutadella-Mahon	100.0	Menorca Coastline Trail II	8.0
254	2022-03-13	Cēsis	11.0	Sunrise Paragliding Hike	9.0
255	2022-04-23	Kandava - Sabile	21.0	Forest Trail Spring hike	250.0
256	2022-04-30	Vecrīga - Krūmiņsala	20.0	Spring Kayaking V	13.0
257	2022-05-28	Ozolnieki - Jelgava	NaN	Wild Sauna Kayaking - Iecava River	4.0
258	2022-06-08	Riga - Ventspils	NaN	Sailing Challenge III	9.0
259	2022-06-09	Gotska	20.0	Gotska Sailing Expedition	9.0
260	2022-07-02	Ķīšezers - Riga Kayaking	16.0	Secret MS-Riga Kayaking adventure	6.0
261	2022-07-07	Riga - Ventspils	NaN	Riga - Ventspils Sailing Challenge	9.0
262	2022-07-08	Lauters	NaN	Fårö Sailing Expedition	9.0
263	2022-07-10	Farosund - Ljugarn	200.0	Gotland Coastal Trail	3.0
264	2022-07-17	Ljugarn - Klintehamn	260.0	Gotland Coastline Expedition - Section II	3.0
265	2022-07-26	Klintehamn -Farosund	200.0	Gotland Coastline Expedition - Section III	3.0
266	2022-08-02	Fåro	70.0	Gotland Coastline Expedition - Faro	3.0
267	2022-08-04	Riga - Ventspils	NaN	Riga - Ventspils Sailing Challenge II	4.0
268	2022-08-07	Lauters - Ekeviken	20.0	Ventspils - Fårö - Riga Sailing Expedition	7.0
269	2022-08-12	Valmiera - Mujāņi	26.0	Secret Night Hike II	32.0

270	2022-08-20	Ērgļi	8.0	299th Adventure with Movement Spontaneous	9.0
271	2022-09-02	Ežezers	8.0	Latgale Lake Kayaking	9.0
272	2022-09-11	Sloka-Vaivari	11.0	Sunrise Pizza Hike III	34.0
273	2022-10-22	Ragakāpa	8.0	Tietoevry Sunrise Hike	40.0
274	2022-10-26	Hachinoke-Miyako	190.0	North of Japan - Mt. Fuji and Michinoku Coastal Trail, Hachinoke-Miyako	3.0
275	2022-11-17	Miyako-Kessenumma	250.0	North of Japan - Mt. Fuji and Michinoku Coastal Trail, Miyako-Kessenumma	3.0
276	2022-11-26	Bušnieku ezers	11.0	Midnight Sauna Mini Hike	8.0
277	2022-12-16	Ozolnieki	20.0	Wild Sauna Hike IV	9.0
278	2022-12-23	Olaine	17.0	Olaine Christmas Hike With Sauna	10.0
279	2022-12-26	Kuldīga	15.0	Christmas Sauna Hike V	8.0
280	2023-01-07	Engure	9.0	Mini Sea SPA Pizza Hike	10.0
281	2023-01-21	NaN	NaN	Hot Air Balloon Winter Expedition	NaN
282	2023-01-30	Toulon - La Ciotat	80.0	South of France Coastal Trail	8.0
283	2023-01-30	La Ciotat - Marseille	80.0	South of France Coastal Trail	8.0
284	2023-03-12	Baloži - Tīraine	12.0	Spontaneous Micro Hike Tonight	4.0
285	2023-03-18	Pļaviņas	14.0	Sunrise Sauna Hike	10.0
286	2023-04-08	Veldze	14.0	Easter Wild Pizza HIke	4.0
287	2023-04-14	Tome - Bekuciems	18.0	Midnight Sauna Hike III	4.0
288	2023-04-23	Bauska	14.0	Sunrise SPA Hike	8.0
289	2023-04-29	Dobele	14.0	Midnight Sauna Mini Hike II	4.0
290	2023-05-06	Pienava	20.0	Midnight Sauna Hike IV	3.0
291	2023-05-14	Ķemeri - Ragaciems	23.0	Sunrise Sea Hike VII	8.0
292	2023-06-09	Iceland	806.0	Crossing Iceland 800KM	8.0
293	2023-06-09	Myvatn - Askja	80.0	Crossing Iceland I	4.0
294	2023-06-10	Lilaste-Garezeri-Gauja	NaN	Tietoevry Sunrise Hike II	15.0
295	2023-06-14	Askja - Highlands Center	213.0	Crossing Iceland II	4.0
296	2023-06-20	Highlands Center - Seljalandfoss	133.0	Crossing Iceland III	4.0
297	2023-06-26	Vestmannaeyar	21.0	Crossing Iceland IV	7.0
298	2023-07-01	Seljalandsfoss - Þorlákshöfn	80.0	Crossing Iceland V	7.0
299	2023-07-03	Þorlákshöfn - Reykjavik	193.0	Crossing Iceland VI	7.0
300	2023-07-15	Kuldīga	15.0	Hot Air Balloon Night Hike	21.0
301	2023-07-29	Heraklion - Sitia	192.0	Crete Coastal Trail I	3.0
302	2023-07-29	Palaiochoira - Chania	150.0	Crete Coastal Trail V	3.0
303	2023-07-29	Chania - Heraklion	208.0	Crete Coastal Trail VI	3.0
304	2023-07-29	Heraklion - Heraklion	1000.0	Crete Coastal Trail 1000 km	3.0
305	2023-08-05	Sitia - Irapetra	142.0	Crete Coastal Trail II	3.0
306	2023-08-12	Irapetra - Tymbaki	181.0	Crete Coastal Trail III	3.0
307	2023-08-19	Tymbaki - Palaiochoira	152.0	Crete Coastal Trail IV	3.0
308	2023-09-21	Riga	NaN	Crossing Iceland Story Night	57.0
309	2023-10-28	Kausu ezers - Lejas ezers	17.0	TietoEvry Sunrise Hike III	14.0
310	2023-11-11	Radžu ūdenskrātuve	7.0	Autumn Sauna Packrafting with Snacks	19.0
311	2023-11-18	Bolderāja	10.0	Tiny Kebab Hike with Winter Swimming	10.0
312	2023-12-02	Rundāle	14.0	Fly and Hike! Hot Air Balloon Adventure	14.0
313	2023-12-25	Lake Garda	8.0	Winter Packrafting in Italy	6.0
314	2024-01-15	Oman	160.0	North of Oman Packrafting Expedition	3.0

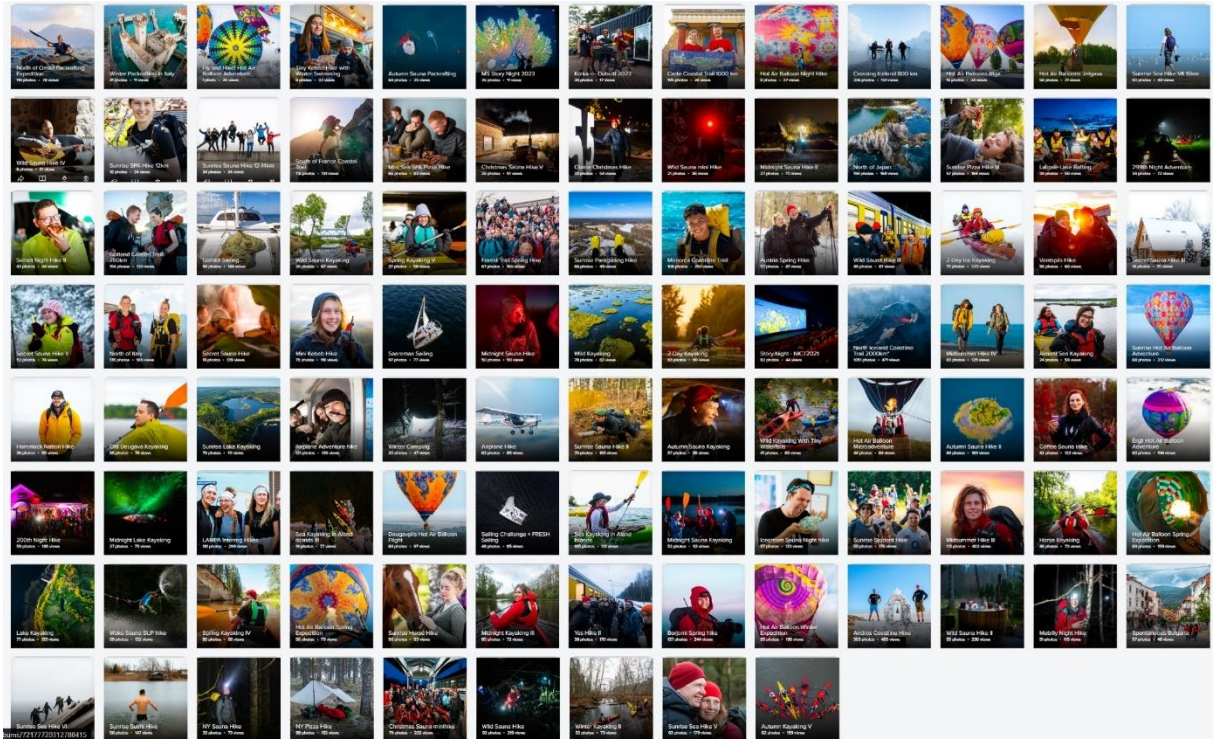
315	2024-01-15	Khasab-Kumzar	NaN	North of Oman Packrafting Expedition Khasab	3.0
316	2024-01-22	Kumzar-Khor Najd	NaN	North of Oman Packrafting Expedition Kumzar	3.0
317	2024-01-29	Dubai	60.0	Dubai Creek Packrafting	3.0
318	2024-02-10	Kuldīga	4.0	Winter Packrafting with Neopolian Pizza and Sauna	10.0
319	2024-02-17	Valmiera	12.0	Winter SPA Hike II	8.0
320	2024-03-02	Babīte	12.0	Mini Spring Packrafting with Sauna	13.0
321	2024-03-16	Egļupe-Allažmuiža	17.0	Spring Swimming Microadventure	8.0
322	2024-03-23	Talsi	19.0	Sunrise Sauna Hike IV	7.0
323	2024-03-30	Mangaļsala - Vecāķi	11.4	Sunrise Sea Hike VIII	NaN
324	2024-05-04	Melnsils-Pitrags	16.0	Pitrags Spring Hike	12.0
325	2024-06-20	Bornholm	110.0	Midsummer Hike V	4.0
326	2024-07-06	Cēsis	12.0	Rīta pārgājiens ar jogu uz "Nākotnes salas"	NaN
327	2024-07-19	RTU - Old Riga	11.0	Spontaneous Old Riga Mini Packrafting with Scientists	NaN
328	2024-07-24	Gothenburg	460.0	Spontaneous Sea Packrafting in Gothenburg	4.0
329	2024-07-24	Gothenburg	NaN	Lilla Varholmens - Hunnesbrostrand	3.0
330	2024-07-24	Gothenburg	NaN	Hunnebrostrand - Moss	3.0
331	2024-07-24	Gothenburg	NaN	Moss - Oslo	2.0
332	2024-08-31	Vilnius	15.0	Vilnius Mini Night Hike	NaN
333	2024-09-07	Rēzekne	20.0	DEPESPUSES nakts pārgājiens	35.0
334	2024-09-14	Lapmežciems	10.0	Sunrise Sea Hik with Patrick and Nicolas	6.0
335	2024-09-28	Carnikava	15.0	Student Pizza Hike	48.0
336	2024-10-06	Sloka	12.0	Autumn Swimming Microadventure	16.0
337	2024-12-01	Sēja	12.0	Sauna Museum Hike	4
338	2024-12-23	Taiwan	300.0	Taiwan Coastal trail Zhuwei - Nano	3
339	2024-12-23	Taiwan	205.0	Taiwan Coastal trail Nano - Chenggong	3
340	2024-12-23	Taiwan	103.0	Taiwan Coastal trail Chenggong - Dawu	3
342	2025-02-15	Melnsils	11.0	Sunrise Sea Hike X	10
343	2025-02-21	Turaida	7.0	Sunrise Sauna Hike V	6
344	2025-03-01	Buļļupe	5.0	Winter Sauna Micro Adventure	6
345	2025-03-08	Vipēdis	12	Mini Lake Hike	5
346	2025-03-23	Gaisma	12	Sunrise Hike IV	8
347	2025-03-28	Carnikava	7	Fishermans Pizza Hike	18
		Sum km covered:	**18441.9**	**Sum participants**:	**6325**

Table 2. Outdoor tours organized during the research period.

Annex 2 Photo reports from organised outdoor tours

The Figure below depicts a collection of albums documenting organized outdoor tours, each containing approximately 50 to 200 photographs. These images capture participants' interactions with nature, infrastructure, and the built environment, serving as a visual record of experiential nature tourism. Event photography was selected for its ability to provide rich, qualitative insights into participant behaviour, engagement, and environmental interactions. The photographs were systematically evaluated to identify patterns and themes and were later presented during public events to gather feedback and validate interpretations. This method ensures a participatory approach, integrating community perspectives into the analysis of tourism experiences. Full list of albums documenting participant experiences from authors organized outdoor tours from Annex 1 Available here: https://ej.uz/entaalbums

The selection of albums reflects a purposeful focus on documenting tours that differed by location, season, and type of activity. Tours of a similar format or content were excluded from photographic documentation if they had already been represented, in order to prioritize diversity of context and experiential variety within the dataset.



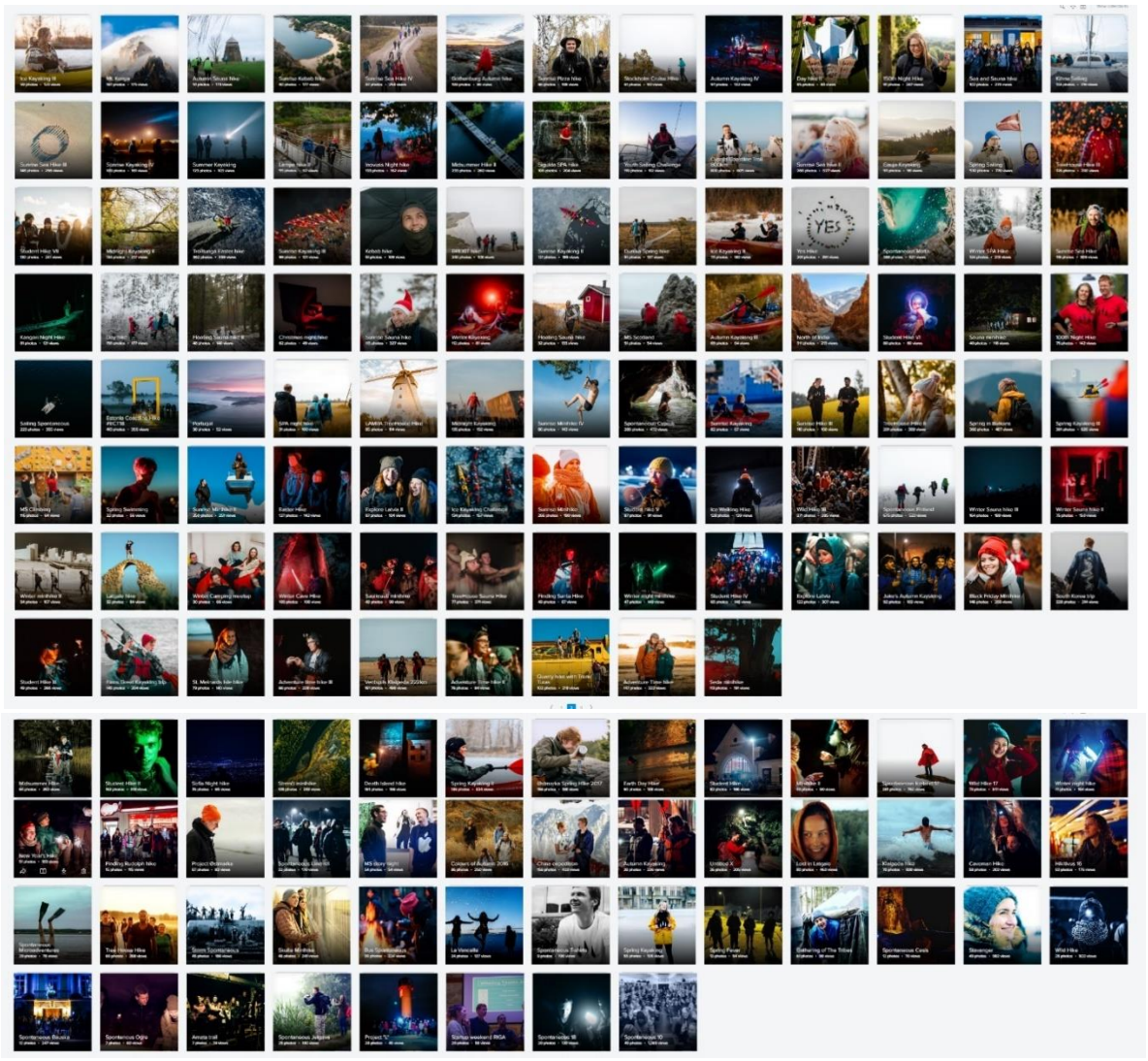


Figure 84. Photo albums with organised outdoor tours from Annex 1.

Annex 3 VR 360 Video documentation of organised outdoor tours

The image below showcases a playlist of recorded 360° long-form videos documenting in greater detail participant experiences from organised outdoor tours, summed up in Annex 1 interacting with nature and built environment, capturing nuances often missed in still photographs. These recordings were segmented into approximately 3 to 10-minute clips, featuring diverse modes of transportation, hiking, packrafting, kayaking, hot air balloon flights, and flying in small private airplanes. The use of 360° video technology together with VR headset was chosen for its ability to recreate a sense of presence, offering immersive views of the experiences. The videos were demonstrated to interviewed experts, showcased during exhibitions, and featured in reporting events to analyse their impact. Additionally, they were utilized in nature tourism product marketing and sales events, gathering international expert feedback on the uniqueness of the experiences and their potential appeal to diverse audiences. In total 23 VR 360 videos were recorded (Figure 85). Full list available here: https://ej.uz/entavideo

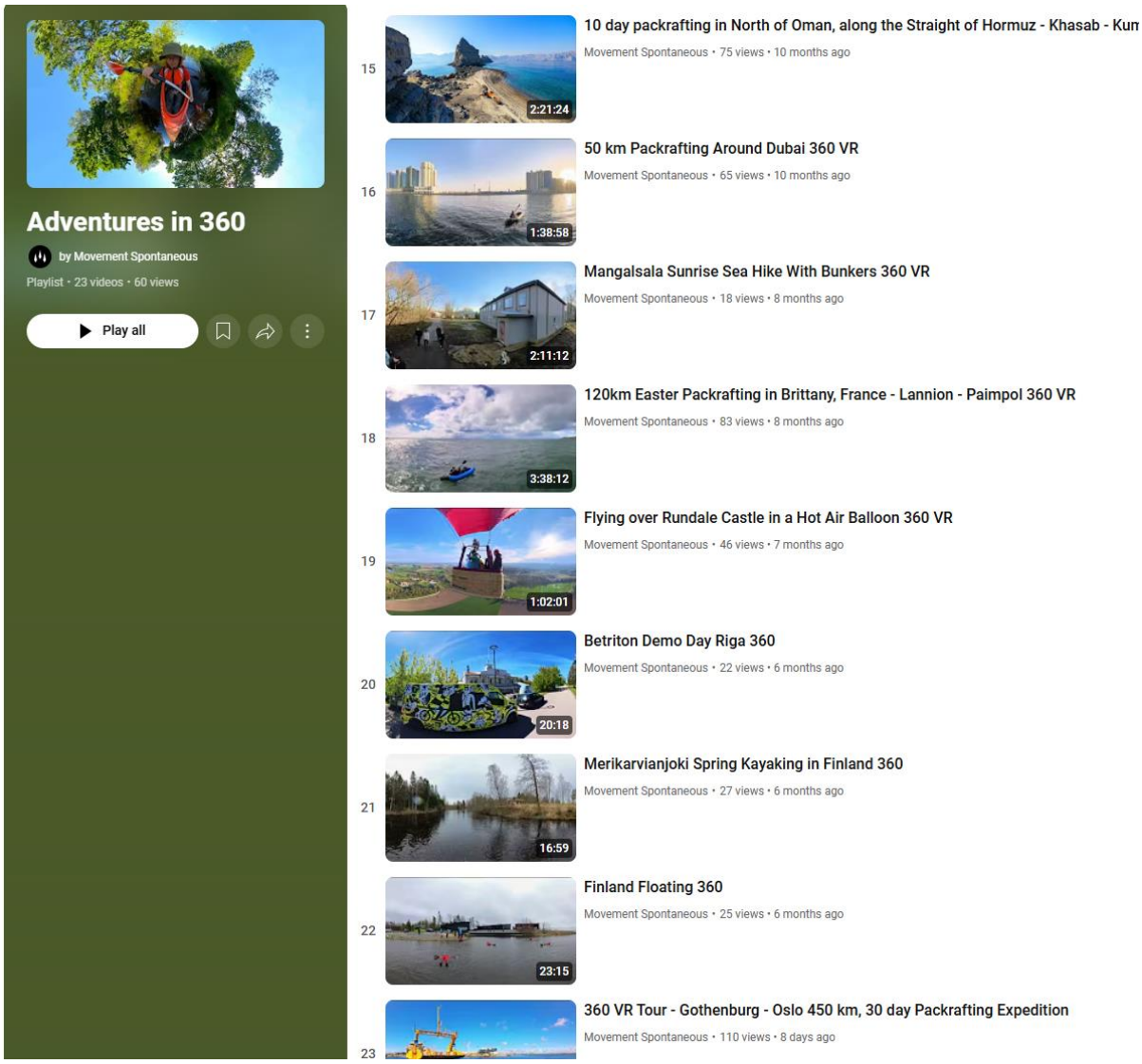


Figure 85. VR 360 videos recorded as part of outdoor tours organised from Annex 1.

Annex 4 Local ideation and practical modelling workshop reports

Intentional innovation enabled approach in developing new tourism products.
Role of innovative planning tools and methodologies – Idea workouts and associative techniques for ideation. The practical modelling workshops conducted during the research period embraced an intentional innovation-enabled approach in developing new tourism products. These workshops recognized the importance of incorporating innovative planning tools and methodologies to foster creativity and generate novel ideas. Techniques like idea workouts and associative thinking were employed to stimulate ideation and promote out-of-the-box solutions (Figure 86).

Date	Number of Participants	Organizer	Location
2023-05-26	65	Latvijas Finieris and Latvia's State Forests (LVM)	Jelgava, Latvia
2024-02-24	100	Vidzeme University of Applied Sciences	Valmiera, Latvia
2024-04-30	30	Sigulda Municipality	Allazi, Latvia
2024-06-06	80	Riga Forests	Riga, Latvia
2024-06-12	25	Association "Limbažu Filcs"	Limbaži, Latvia
2024-07-05	50	Riga Technical university	Cesis, Latvia

Table 3 Organised community workshops.

During the workshops, participants actively engaged in idea workouts, which involved structured brainstorming sessions aimed at generating diverse and innovative concepts for nature tourism products. The workshops provided a platform for collaborative thinking and encouraged participants to challenge conventional approaches, resulting in the emergence of fresh and imaginative ideas. In addition to utilizing innovative planning tools and methodologies, the practical modelling workshops also embraced the concept of cross-disciplinarity, which proved to be instrumental in enhancing the levels of innovation throughout the development process. By bringing together professionals from diverse fields like architecture, tourism, marketing, sustainability, and others, these workshops fostered a collaborative and interdisciplinary environment, providing a platform for participants to engage in collective problem-solving and ideation, capitalizing on the varied expertise and perspectives facilitating the exploration of unconventional ideas and creative solutions, as professionals with different backgrounds came together to address the challenges inherent in nature tourism product development. The interdisciplinary nature of the workshops enabled a deeper understanding of the multifaceted factors influencing the design and implementation of nature tourism offerings. Participants considered a wide range of aspects, including architectural design, visitor experiences, sustainability considerations, market trends, and cultural relevance developing integrated and well-rounded tourism products ensuring that the created prototypes met the expectations of visitors and matched with sustainable and responsible tourism practices. Cross-disciplinary collaboration facilitated knowledge transfer and cross-pollination of ideas between fields. Professionals from various disciplines had the opportunity to share their expertise and learn from one another, resulting in an exchange of insights. Interplay of ideas and expertise nurtured an environment conductive to innovation, as concepts and approaches from different fields could be adapted and applied creatively in the context of nature tourism architecture.

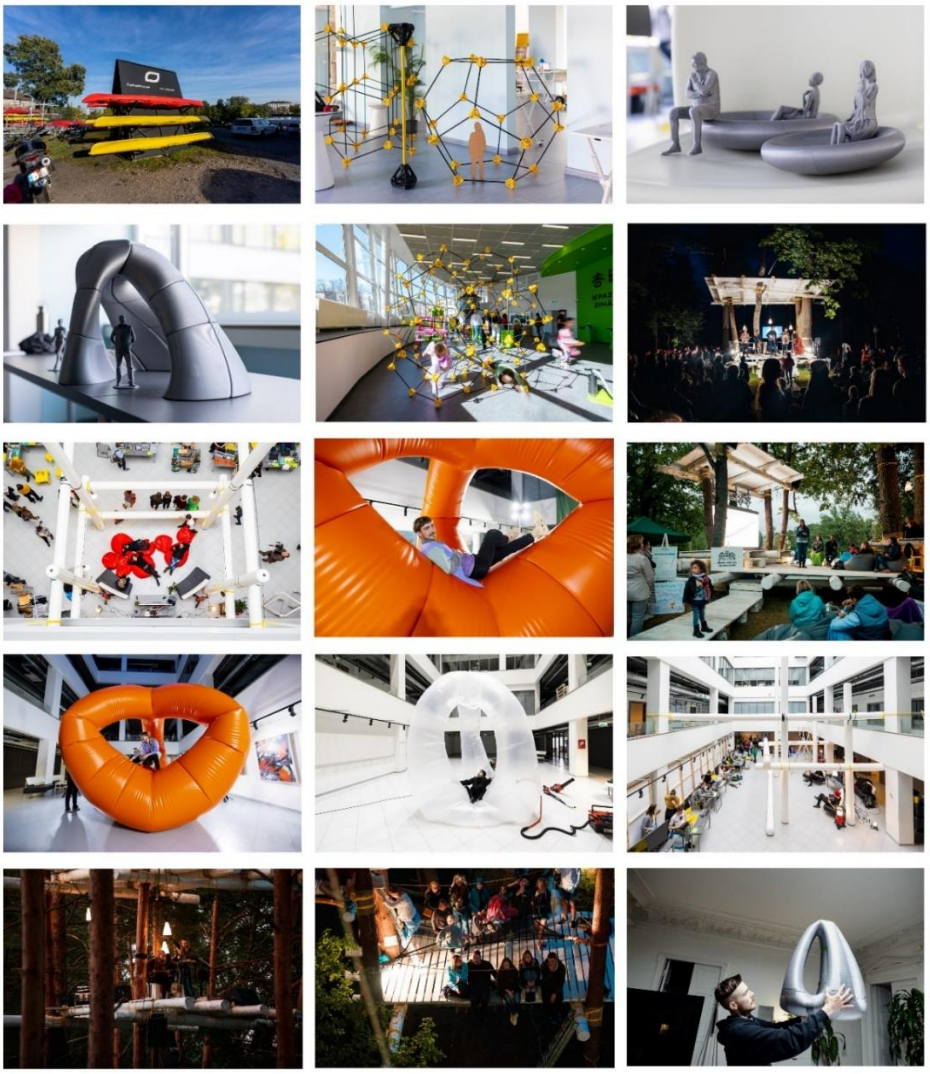


Figure 86. Workshop prototypes [Photos by Andra Marta Babre].

Modular House Challenge, organized by Latvijas Finieris in collaboration with Latvia's State Forests (LVM), provided an opportunity for architects, builders, and other professionals to innovate in small-scale architecture. The event took place on May 26, 2023, in Jelgava, following a six-week series of informative and practical lectures. Participants also visited Pavasars Modular House factory in Rauna and the Latvijas Finieris demo centre in Riga through organized excursions. The competition unfolded in two stages. The first stage, a four-hour idea competition, was held in person at the Latvian State Forests centre. Selected teams then progressed to a six-month concept development incubator, receiving guidance and mentorship. Ultimately, up to three teams had the opportunity to develop their ideas further (Figure 87).

Figure 87. Modular House Challenge [Photos by Andra Marta Babre].

Vidzeme Wood Technology Hackathon, held on February 23-25, 2024, at Vidzeme University of Applied Sciences, brought together experts and enthusiasts in wood construction, processing, IT, and engineering to develop innovative industry solutions. Over 48 hours, teams tackled challenges in digitalization**,** reconfigurable performance spaces**,** transformable timber interiors**,** and an open challenge for independent ideas. The event fostered cross-sector collaboration, focusing on sustainability, digitization, and modular design. Mentors from industry and academia supported participants, and solutions were evaluated on innovation, feasibility, and sustainability. Winning teams received prize - an exchange trip to Norway and further collaboration opportunities with festival organizers, and mentorship for further development. The hackathon was organized by Vidzeme University of Applied Sciences and the Vidzeme Planning Region, co-financed by EEA Grants and Erasmus+ Blended Intensive Program (Figure 88).

Figure 88. Example of a large scale prototype built within 48h Wood Technology Hackathon [Photo by Andra Marta Babre].

Allaži Development Workshop, held on April 30, 2024, at the Allaži Cultural Centre, brought together participants in collaboration with Sigulda Municipality to explore future opportunities for the area. Using mental mapping, the Value Proposition Canvas, and the Quadrilateral Collaboration Matrix, attendees identified key destinations and areas for improvement. Working in teams, they developed ideas and proposed infrastructure solutions to enhance local assets and support community development (Figure 89).

Figure 89. Allaži Development Workshop [Photos by Andra Marta Babre].

The Mangaļsala Development Workshop, held on June 6, 2024, brought together RTU architecture students and experts from SIA "Rīgas meži," Riga City Council, and related organizations to explore sustainable design strategies for the Piejūra Nature Park. As part of the initiative, second-year students from RTU's Architecture and Design Institute conducted on-site research and developed eight environmental design proposals that balanced conservation with public accessibility. A jury evaluated the concepts, selecting the most suitable for long-term implementation. The workshop was part of a broader partnership between RTU and SIA "Rīgas meži," established in 2023 to promote sustainable urban management, education, and applied research (Figure 90).

Figure 90. RTU ADI Students final presentations on nature tourism innovations [Photos by Andra Marta Babre].

Limbaži Felt Factory Workshop, held on June 12, 2024, at the Limbažu Filcs Association, brought together RTU architecture students, residents, municipal representatives, and industry experts to explore strategies for revitalizing the historic site. Through site mapping and team-based collaboration, participants identified key challenges and developed proposals addressing heritage preservation, community engagement, business potential, and recreational infrastructure. Concepts included creative workshops run by volunteers, hostel and café models tied to university partnerships, a pump track and electric vehicle circuit, and year-round facilities, a convertible water track and fin board production space. A panel of experts reviewed the proposals, recognizing their contribution to sustainable and community-oriented urban regeneration. The outcomes laid the groundwork for the site's long-term development (Figure 91).

Figure 91. Limbažu Felt factory workshop [Photos by Andra Marta Babre].

Floating Future Island Stage at Conversation Festival Lampa, developed by Riga Technical University in collaboration with industry partners, this floating stage was featured at the 10th Lampa Festival in Cēsis. Built on the Cēsis Castle Pond, the floating structure explored sustainable and mobile architecture through an inflatable, modular design that minimized

environmental impact. Students from RTU's Architecture and Design Institute researched lightweight, reusable materials and created a stage concept addressing the adaptability of temporary event spaces and climate-responsive design. The structure hosted discussions on future technologies, AI, energy, and social challenges, alongside interactive exhibits on water robotics and amphibious solutions. Developed with partners including Ignitis Group, Adaptive, and the Ministry of Transport, the initiative demonstrated interdisciplinary cooperation in shaping new inflatable spatial concepts (Figure 92).

Figure 92. Future Island [Photos by Andra Marta Babre].

Annex 5 Cross-disciplinary Expert feedback interviews

Methodology

To gather expert insights on experiential nature tourism, semi-structured interviews were conducted with select professionals from the tourism sector. The objective was to explore key issues, overcrowding, experiential travel, destination management, new tourism development practices, and the business viability of experiential nature tourism products. Experts were selected based on their professional background, industry experience, and active involvement in tourism development, policy, and operations.

Interviewed Nature Tourism Experts:

1. **Paul Wagner & Andy Fairburn** (Nordic Tourism Collective) – Experts in sustainable tourism and regional destination management in the Nordic and Baltic regions.
2. **Elin Priks** (Estonian University of Life Sciences, Estonian Rural Tourism Association) – Researcher focused on the environmental impact of tourism and visitor management.
3. **Daniela Azzip** (Independent Travel Researcher & Content Creator) – Specialist in alternative and off-the-beaten-path travel experiences.
4. **Asnāte Ziemele** (Ramblers Association Europe, Latvian Rural Tourism Association,) – Expert in rural tourism development, destination marketing, and hiking tourism certification.

The interviews were conducted via video calls between December 2024 and March 2025. Responses were analysed to identify patterns and insights relevant to the sustainable growth of nature tourism. Results were edited for clarity and brevity.

Interview Questions:

Interviews started with a short intro on the selected expert's background in nature tourism sector followed by 4 questions reformulated in the context to better fit the experts background.

1. What is your personal experience with overcrowding in nature?
2. What are your views on current experiential travel and destination management practices?
3. How do you evaluate the development of new tourism destinations?
4. What is your assessment of the business viability of experiential nature tourism products?

Interview 01 – 2024-12-11. 11:00 – 11:30 CET (video call)

Paul Wagner and **Andy Fairburn** – Founders of the Nordic Tourism Collective, a collaborative organization promoting sustainable and innovative tourism in the Nordic region. With extensive industry experience, they connect professionals, foster partnerships, and enhance the region's appeal as a global travel destination. The collective emphasizes collaboration, knowledge sharing, and responsible tourism, shaping the future of Nordic tourism.

Question 1: Your personal experience with Overcrowding in Nature

Andy: We haven't personally encountered it, but we are aware of the issue in places like Barcelona and the Balearic Islands. In the Nordic and Baltic regions, Northern Norway struggles with infrastructure, with Tromsø being a notable example. A potential solution could be public-private partnerships. Many protests in the Balearics are not against tourism itself but against short-term rentals like Airbnb, which have caused uncontrolled price hikes, making housing unaffordable for locals. Greenland could be an interesting case in the future, much like Iceland, which has long been a stopover destination for flights to the EU.

Paul: Amsterdam is very crowded, and the new government is introducing legislation to limit incoming flights. Maintaining a balance with local communities is crucial. The example of Lapland is relevant it has a short peak season with many flights concentrated in a limited period.

Question 2: Your Outlook on Experiential Travel and Destination Management

Paul: Immersive experiences are excellent for local knowledge, history, and traditions. A local guide can provide much more tailored experiences. Just yesterday, I met an experiential tour operator offering unique travel experiences in Costa Rica, Colombia, Sri Lanka, and beyond. Their company, though new, is already thriving with 16 staff members. There is also increasing interest in travel maps.

Andy: Personalization is a growing trend people want customized, hands-on experiences. In the UK, 10 million people travel to Spain each year, and this trend of experiential travel is clearly present. The demand for personalized nature tourism experiences is growing, but matching the right products to these preferences remains complex.

Question 3: Evaluation of Current New Destination Development Practices

Paul & Andy (joint response): Local governments are becoming more proactive and responsible, aiming to prevent tourism from being exploitative, as seen in the past. Public pressure is also increasing. Tourism, if managed well, can be a force for good providing jobs and higher incomes for local communities. In Norway, for example, some communities are disappearing due to the decline of traditional industries like fishing. Tourism can offer an alternative source of income, but economic leakage must be addressed money should remain within the community. Restricting tourism too much, however, can turn it into an exclusive luxury product. The Faroe Islands' tourism strategy (e.g., "Heim" – Faroese for "home") focuses on integrating tourism with local communities. One key criterion for destination development is flight accessibility combined with sufficient facilities. Finnish Lapland, for example, receives many flights, but in peak periods, there aren't enough accommodations. A sustainable approach involves balancing flight numbers and promoting visits outside peak times. In the UK, most people visit Lapland in December marketing other seasons could help spread demand more evenly.

Question 4: Business Viability of Experiential Nature Tourism Products

Paul: Sustainable tourism must have clear boundaries. There should be a cap on visitor numbers, and local communities should be involved in these discussions. The goal is to

showcase nature without harming the environment. At the end of January, we are organizing a familiarization (fam) trip there is significant interest from buyers seeking unique destinations. Winter experiences provide a different perspective from the usual spring and summer offerings.

Andy: The "spreading the jam" approach is crucial 80% of tourists visit only 20% of destinations. Overconcentration is a major sustainability challenge. Extending the travel season and promoting secondary destinations can help. The Baltic region welcomes more tourists, but it must be done correctly. Cruise tourism is a good example historically, 2,500 people disembark in a city, buy a coffee, and return to the ship for meals, providing minimal benefit to local economies. Developing strategies to ensure that secondary destinations benefit from tourism is essential. City tourism can be sustainable if it is educational. Encouraging visitors to engage with local history and culture can make a difference. However, there are examples of inauthentic tourism developments, like the replica "mini-Venice" in Las Vegas or the "Little Paris" in China. Such projects should be done tastefully and with educational value in mind. A good example is Nuuksio Nature Park**,** where visitors learn about reindeer and local ecosystems this type of storytelling enhances the tourism experience while promoting sustainability.

Interview 02 – 2025-03-04. 20:30 CET (video call)

Elin Priks is a nature tourism expert based in Tallinn, Estonia. She is associated with the Estonian University of Life Sciences (formerly the Agricultural University of Tartu) and the Estonian Rural Tourism Association. While not a service provider herself, she conducts research and engages with journalists and fellow nature tourism experts. Her work focuses on the unique aspects of nature travel and guiding, particularly measuring anthropogenic stress on the environment. Key areas of interest include assessing the impact of tourism on flora, fauna, and landscapes, as well as exploring ways to adjust visitor routes to minimize environmental degradation. One of her study areas includes a bog in southern Estonia.

Question 1: Your personal experience with Overcrowding in Nature

One significant example of overcrowding is the Viiru Bog in Lahemaa National Park, near Tallinn. This location experiences high visitor numbers and substantial car traffic, with visitor statistics monitored by RMK (the Estonian State Forest Management Centre). The visible signs of overuse include noticeable footprints and other environmental disturbances. A commonly cited issue is that "people are loving it to death." To mitigate pressure, some sections of the bog are closed, allowing other areas to remain accessible. An alternative approach could involve temporarily closing the Viiru Bog entirely for several years to enable natural recovery. Further inquiries on this topic can be directed to Marika.

Question 2: Your Outlook on current Experiential Travel and Destination Management practices.

I have worked for over a decade with Visit Estonia, particularly within the government's tourism team. My responsibilities included managing partner markets, Latvia, Poland, the United Kingdom, France, the United States, and Japan. When presenting Estonia to travel professionals and journalists, I always made sure to include nature-based experiences, though typically in a more leisurely format rather than in-depth wilderness exploration. A highlight of these tours was Estonia's bog landscapes, which often surprised visitors with their pristine condition. One illustrative cultural difference arose with Japanese visitors, who frequently

asked how many gardeners were responsible for maintaining the park landscapes. Despite multiple explanations that the landscapes were entirely natural, the concept remained difficult for them to grasp. During a visit to Japan, I observed a similar but significantly smaller park where staff meticulously removed fallen leaves and maintained the environment. This contrast highlighted differing perceptions of natural landscapes across cultures. Regarding Setomaa, an area known for its extensive forests and low-density hiking routes, I noticed that international visitors were particularly surprised by its untouched nature. The region is famous for its wild mushroom picking, particularly chanterelles, which are collected by locals, including salaried employees, and exported to Finnish markets due to the favorable growing conditions. From a personal perspective, I prefer experiential travel aligned with my values. I travel with a backpack, choose locally owned accommodations, and ensure that my expenditures benefit the community. I also prefer local transportation, avoid large cities, and seek off-the-beaten-path experiences. Recently, I have undertaken long-distance hiking routes, including a 450 km section of the Camino de Santiago.

Question 3: How do you evaluate the development of new tourism destinations?

New tourism destinations are generally developed based on natural resource availability and impact assessments. However, true "new" destinations are rare. Instead, locations typically gain popularity due to media exposure, emerging travel trends, or climatic shifts. For example, as Spanish summers become excessively hot, cooler destinations are becoming increasingly attractive. Small islands and islets, previously undeveloped for tourism, are also seeing rising interest. However, developing a new destination requires significant infrastructure investment, including accommodations, sanitation, transportation, and activities that provide a clear reason for visiting. The challenge lies in balancing tourism growth with sustainable development.

Question 4: Business Viability of Experiential Nature Tourism Products

A survey conducted during the COVID-19 pandemic examined travel motivations and spending patterns of visitors to nature parks near Tallinn. The findings indicated that while people increased their engagement with nature, they largely expected nature experiences to be free. Many did not seek in-depth knowledge but simply wanted to enjoy the environment. If they felt secure, they tended to forgo guided services. Additionally, the more experience they had in nature, the less likely they were to use guides. The study also highlighted key spending behaviors. A typical one-day trip cost approximately €24 per person, with 9% of respondents reporting no expenditure at all. Multi-day trips, where visitors stayed in paid accommodations, had an average expenditure of €78 per person. Most travelers purchased food for picnics rather than dining in restaurants. When overnight stays were involved, only about 18% opted for paid accommodation with amenities. Instead, many relied on RMK camping areas or stayed with friends and family. The Estonian nature tourism market is influenced by the RMK and the Estonian Forest Agency, which offer guided hikes at significantly lower prices than private sector SMEs. Since these public entities do not operate as businesses, they distort market prices and reduce competitiveness for private guides. As a result, visitors often question why they should pay higher fees for independent guides. This pricing structure also affects EU funding programs, as consumers become accustomed to free or heavily subsidized experiences, making it difficult for private businesses to thrive. As part of the European Capital of Culture initiative in Tartu 2024, there was a strong focus on integrating nature into everyday life and promoting sustainable practices, including recycling. This initiative aligns with broader efforts to ensure long-term sustainability in nature tourism and destination management.

Interview 03 – 2025-03-08. 17:00 CET (video call)

Daniela Azzip is a UK-based travel content creator and YouTuber focused on practical, research-driven travel insights. She specializes in creating detailed, filterable travel maps for each country she visits, helping audiences discover a wide range of destinations tailored to their interests.

Question 1: Short intro about you and your personal experience with Overcrowding in Nature

I started traveling by chance. During my Erasmus exchange in Poland, I had to go abroad due to a health condition. My swimming teacher told me I couldn't finish my studies because of it, so I looked for another class to complete my course. While in Poland, I began exploring the country, even though my family had never traveled before. I backpacked around and gradually found my way into tourism. I realized I was quite good at research, and people who knew me started asking for recommendations. That led me to share my insights on a blog and Instagram, and in 2020, I began making YouTube videos.It was a long journey to get to YouTube. I wouldn't say I provide a service I simply share my experiences. My main product is a travel map for each country I visit. I try to identify every possible destination a person could explore and sell access to the map. Users can filter locations based on their interests, and it's mostly a one-off payment.

Question 2: Your Outlook on current Experiential Travel and Destination Management practices.

In general, major destinations, especially for young people, come from TikTok and Instagram. Many travel just to take photos for Instagram it's the case for most people I know. But I'm different. I prefer to visit places that haven't been discovered yet. If I see an interesting photo online, I want to go there and check it out for myself. While researching a country, I sometimes come across destinations I wouldn't have noticed otherwise. My ambition is to find places that haven't been discovered yet, because otherwise, everyone just ends up going to the same spots.Sometimes, I find an interesting photo online, and then I spend anywhere from 30 minutes to six hours exploring Google Maps to track it down. Looking for places can be an adventure in itself.

Question 3: Your Evaluation of Current New Destination Development Practices

If I see that a destination is overcrowded, I usually won't go there. It looks expensive and too crowded for my liking. Instead, I prefer bringing attention to more remote locations it feels better and more authentic. In those places, I can interact with locals and really experience a destination. For example, when I was in Sri Lanka recently, I was on a beach, and some locals asked if we could help pull fishing nets out of the sea. That kind of spontaneous experience wouldn't happen in an overdeveloped area it would likely be a paid service instead. I've noticed that people tend to separate the idea of tourism into categories. Many prefer to call themselves "travellers" rather than "tourists," but at the core, it's the same thing. Travelers seek out the unknown, trying to connect with a place, while tourists tend to stick to cliché activities. Sometimes, when a big influencer or platform like Yes Theory visits a destination, it suddenly feels less special, as if it's no longer worth visiting. But the reality is that most places have already been discovered by someone. Locals also get tired of tourists, which is something I've noticed in popular destinations. In places like China or Kyrgyzstan, where people aren't as accustomed to tourists, interactions feel more genuine they are more passionate and curious

about visitors. Every time I visit a country that isn't widely known, I feel like I'm truly learning something. But when I visit major hotspots, it feels more like a traditional holiday. To reach off-the-beaten-path locations, I need my own vehicle. I usually rent a car to get to these places. In Sri Lanka, I loved driving a tuk-tuk it was an experience in itself. You need a driver's license, but tuk-tuk rental companies help tourists get a temporary one. It was fun and felt like part of the adventure. The rental system also had a great local connection the company didn't own the tuk-tuks but instead rented them from local families, kind of like an Airbnb for tuk-tuks. They just acted as the middleman, and the system worked really well. Locals were often surprised and curious when they saw foreigners driving tuk-tuks, which made the experience even more memorable.

Question 4: Business Viability of Experiential Nature Tourism Products

I would recommend traveling off the beaten path. Social media has largely shaped travel trends, and while it brings visibility to destinations, it also has negative consequences. It's bad for the environment, and in many cases, it leads to lesser experiences for travelers. We are also, sometimes unknowingly, disrupting the lives of local communities. Many places have turned into tourist hubs, driving prices up to the point where locals can no longer afford to live there. That said, traveling off the beaten path comes with its own challenges. In terms of monetization, I don't think what I do is financially sustainable. I don't earn enough from tourism to justify the time and effort I put in. It's more of a passion. Some people get lucky, but to even have a chance at that, you have to invest a huge amount of effort. It's not necessarily a smart business model. I've been on YouTube for five years and Instagram for seven, and I'm still not profitable.Tourism, at its core, is driven by human nature people will always try to make a profit. In Indonesia, for example, which is a relatively poor country, people bake bread at home and bring it to the roadside to sell to tourists. There is a balance both mass tourism and independent travel have their place, but they affect destinations in different ways. In a way, it's like a hierarchy of needs. In Sri Lanka, I visited Yala National Park, and it was packed with jeeps. The crowds were so overwhelming that the animals didn't even come out. Later in the afternoon, I visited a smaller, lesser-known park. There were only three jeeps, and I was able to see leopards. At one point, a carcass was spotted, and within minutes, 15 jeeps surrounded the area, turning it into a tourist trap. The leopard never appeared, and the whole experience felt staged rather than authentic. In contrast, that same afternoon, in the smaller park, I saw over 20 elephants, with more than 10 visible at once. Interestingly, overtourism in major destinations often pushes people to seek out more authentic experiences elsewhere. When travellers get tired of overcrowded spots, they start looking for something unique this shift can sometimes benefit less-visited destinations.

Interview 04 – 2025-03-18. 17:30 – 17:00 CET (video call)

Asnāte Ziemele is the Chairperson of the Latvian Rural Tourism Association and Chair of the European Ramblers Association. She leads multiple projects focused on sustainable rural tourism and nature accessibility. Her work emphasizes balanced visitor management and the protection of natural sites across Europe.

Question 1: Short intro about you and your personal experience with Overcrowding in Nature

I have experienced only occasional overcrowding in nature in Latvia. On the Gauja River in the middle of summer, there are too many boats not because the river is polluted, but

because movement becomes difficult. Some natural sites are particularly popular with local visitors, caves, trees with exposed pine roots, and other natural attractions. However, I would not describe Latvia as experiencing overtourism. In other countries, especially in South America, Brazil, and the Caribbean, certain activities occur that should not take place in sensitive natural areas, mangrove forests. Downhill skiing in the Alps is another example sometimes, it becomes more about drinking beer than appreciating nature. In Europe, nature is generally less crowded than in some eastern countries. We are not yet at risk of extreme overcrowding. Trolltunga in Norway comes to mind there are many similar rock formations, but this one is the most popular. The most damaged places are often those without infrastructure. Due to traditions, beliefs, or habits, people continue to visit and impact these areas. Some traditions, touching, experiencing, or praying in caves, contribute to environmental degradation. Not all traditions are beneficial for nature.

Question 2: Outlook on Experiential travel and Destination Management practices

The trend in tourism is shifting away from simply seeing, hearing, or learning from guides toward direct, self-guided experiences. These experiences are unique and engage people through their feelings and senses. Travelers want to actively participate rather than just observe. Lately, this type of tourism has become more challenging and expensive, but people are increasingly willing to pay for these experiences and challenges. This has both positive and negative aspects. The positive side is that travelers value the experience more, leading to a deeper understanding and possibly a greater desire to protect what they appreciate. However, the downside is that these experiences require more human effort and highly skilled facilitators. If guides or organizers are not well-trained or knowledgeable, the experience can be disappointing. Proper training for organizers is essential to ensure high-quality experiences.

Question 3: Evaluation of Current New Destination Development practices

It aligns with the shift away from crowds, monuments, and well-known places that too many have already seen. Nature stands out as a unique and fragile phenomenon. The way nature is marketed varies across countries, reflecting different values and priorities. In the Baltics, for example, Norway is known for its fjords and mountains features unique to the Nordic region. In Latvia, we still have remoteness, empty beaches, and local traditions and history, which are incorporated into marketing slogans. However, marketing nature is challenging. Even when key selling points are identified, packaging the experience remains difficult. Making promises and ensuring they are fulfilled is not straightforward, as nature is unpredictable. Each country house is unique, making standardization difficult. While uniqueness is valuable, it can also be hard to sell. For example, in bog shoe walks, people expect sunshine, not rain, making it challenging to package, sell, and meet expectations. This makes nature tourism one of the most difficult and demanding sectors in both sales and marketing

Question 4: Business Viability of Experiential Nature Tourism Products (including opportunities for scaling)

I have learned from our projects, especially in Japan, how to sell bog walks to Japanese tourists. What if it rains? What if the path is slippery? These are challenges when selling nature experiences. In all tourism, there is an element of a dream, but in nature tourism, it is even more ethereal. People envision listening to the trees and being immersed in the forest. However, reality can be different you might encounter a bear, extreme temperatures, or mosquitoes. Many factors are beyond control and often unaccounted for. As a seller, you must inform the buyer

about possible conditions and what to do in different scenarios. Having a Plan B is essential but not easy. This is why most tour packages exclude nature tourism. Expectations can make or break the experience. Even taking a paying friend on a trip can strain a friendship if expectations are not met. No wonder rural and nature tourism is marketed less and sold cautiously. In nature tourism, promises are often included in contracts. In some ways, gambling is easier. Tromsø has taken a smart approach by structuring its tourism around the Northern Lights. Tourists go out, wait, and return sometimes they see the lights, sometimes they don't. But the experience is still unique, and the model works. Selling activities like kayaking is more difficult. If it rains or the water level drops, the experience changes. Offering a hike as an alternative may not satisfy customers because it is not what they originally paid for. Managing expectations is key. Of course, some people are understanding and willing to adapt, but not all

There are two very different types of hikers and ramblers. Some want only pristine nature. Nothing commercial. No nature. The other type is mostly European ramblers' association. All their certification, quality trails. Its based on civilisation. Signs, lots of services, culture. Coastal hiking trail we tried to certify Ventspils Pavilosta area. Less populated area. That was not possible. Not enough signs, because the waves take the signs away. You need to put marks in the sea, so people would know where they are going. Signposting. Not having shops was also an issue. People are going for a nature experience. You can be alone with real nature. Quality system, where our quality approach doesn't fit in. Commercial services are mainstream. Charge phones, meet locals, walk together. Overnighting in the tents and guest houses. Some also want to be alone in dunes, but its not majority. Hikers and ramblers, even if they go over mountains, they still want the huts, cottages and resupply points. They want to know how far till the next one.

Annex 6 Case study – Baltic Local government and policy oriented support programs for development of Experiential nature tourism products

A short overview of government support programs author participated in during the research period with a short overview of expected results and authors involvement.

Interreg project **"NAT-TOUR-EXPO - Exporting Baltic Nature Tourism to UK (CB0100030)"**, which is implemented with the support of the Central Baltic Program of the European Union and the European Regional Development Fund, 2021-2027. The project develops a joint Latvian-Estonian nature tourism product tailored specifically for the UK market and promotes it through a targeted marketing campaign aimed at generating sales. The product is built on individual nature tourism offers by small and medium-sized enterprises, brought together in a professionally curated package. It is made accessible through a dedicated, innovative web platform that connects directly with the market independent travellers, special interest groups, and tour operators focused on the Baltic region. The tourism offer includes a variety of nature-based experiences wildlife and birdwatching holidays, nature photography, and soft adventure activities like hiking, walking, cycling, and boating. Touring programs also incorporate nature-related themes botanical exploration, wildlife observation, wellness and spa elements, as well as local food and foraging experiences.

European Union's INTERREG Estonia-Latvia program project **"Forest and Coastal Hiking Trails' accessibility improvement for different social groups"** No. (EE-LV00013) The project objective is to improve accessibility of the Baltic Hiking trails – the Coastal Hiking Trail and the Forest Trail – for different social groups by implementing accessibility and inclusive marketing solutions across both trails in Latvia and Estonia. As a result, several pilot solutions will be taken up by organisations to enhance the inclusiveness of hiking experiences. These include wheelchair accessibility solutions adapted for various trail surfaces, as well as tools to support hikers with impaired vision, audio guides, braille signage, and special visual markers. Web-based webcam solutions will allow hikers to view current trail conditions before their trip, supporting safer planning for seniors and families with young children. Trails will also be adapted for young families through short loop routes and engaging, educational features games and 3D objects placed along the way. Further solutions will support self-guided hiking for school youth, provide language and cultural adaptations for foreign and cross-cultural groups, and promote guided hikes designed specifically for people with disabilities.

“Nature and Active Tourism Cooperation Network” (Project No. 1.2.3.6/2/24/A/001) within the framework of the European Union’s Cohesion Policy Program for 2021–2027, under Priority 1.2 “Support for Entrepreneurship” and Specific Objective 1.2.3 “Promoting Sustainable Growth, Competitiveness, and Job Creation in SMEs, including through Productive Investments,” specifically Measure 1.2.3.6 “Tourism Product Development Program.” The project’s goal is to provide support to Latvian micro, small, and medium-sized enterprises to develop new tourism products or services with higher added value, thus promoting the growth of export capacity in the tourism sector and enhancing its competitiveness on an international scale. The planned solutions to achieve this goal include providing support to members of the cooperation network to foster their economic growth through the implementation of activities outlined in the network’s strategy and action plans, as well as ensuring appropriate management of the network. The project plans to involve more than 25 businesses and at least one research and knowledge dissemination organization.

Annex 7 Nature tourism destination database

As an Annex to the research conducted by the author, marketing materials promoting nature tourism destinations were collected and analysed to provide additional insights into the experience-oriented approaches and sustainable solutions prevalent in destination-oriented nature travel. Traditionally, the tourism industry has heavily relied on conventional interpretations of recreational architecture. Through examination of 1000 case studies, the author identified five main approaches for organizing nature tourism architecture. These approaches were categorized based on factors type, location, climate, relation to nature, and grouping according to the main tourist attractors used, including existing nature features, the built environment, activity-oriented destinations, and story-oriented destinations (Figure *93*).

To ensure an unbiased and comprehensive selection of destinations for analysis, the author employed a rigorous methodology. Rather than intentionally seeking out specific destinations, the author actively engaged with and favourite nature tourism-related content on popular social media platforms, Facebook, Instagram, and Google news. This approach allowed for the receipt of recommended content through suggestion algorithms, targeted ads, and posts related to nature tourism. Additionally, the author explored the book marketplaces of Amazon.de, Amazon.co.uk, and Amazon.com to access recommended content pertaining to nature tourism destinations. By relying on organic recommendations through the Google News platform on Android during the one-year study period, the author avoided intentional and biased selection of destinations.

This approach enabled collection of diverse range of marketing materials and content related to nature tourism destinations. Through the analysis of these materials, the author aimed to uncover innovative strategies, emerging trends, and the experiences associated with promoting such destinations. The gathered information served as valuable supplementary material, augmenting the author's research, and providing a nuanced understanding of the evolving nature tourism industry. It offers insights into destination marketing practices, user-generated content, and the interplay between marketing platforms and architectural solutions.

Full list of additionally quoted sources for summed up content and visual material is combined in an online database with 1250 entries (
Table *4*): https://ej.uz/entasourcesobjects

Figure 93. Illustration of nature tourism destination database from Annex 7.

01 Experience and activity-oriented destinations	02 Aesthetic Quality of the built environment as the main attractor	03 Nature and Landscape as the main attractor	04 Integrated Approach (no individual attractor takes a definite lead)
£1000 House in Whales	1.8m Width Home	12 Volt Retreat	A Castle in the Trees
3T2 House	59 Bellevue Terrace	48°Nord	A Floating Room
72 Hour Cabin	570 Bridge Porto	A Surfer's House	A Fort in the Sky
Absolute Box	727 Fuselage Home	Alpine Cabin	A Rolling Masterplan
Abuna Yemata Guh	1973 Airstream Adventure	Amangiri	A Ship's Bow
Adraga Tiny Home	A-Frame Plastic Kids Cabin	Amankora	A Treehouse Among the Stars
Aéroplume	Abu Simbel	Arctic Glass Igloo Resort	AirShip 002
Airlander 10	Aegean Pool House	Atepped Traelvikosen Scenic Route installation	Ampia Vista Retreat
AirYacht	AI x Future Cities Series	Aurland Lookout	An Art Deco Watchtower
Alanya Submarine	Aircastle	Aurora Canvas Dome	Angkor Wat
Alexander Calder Sculpture Garden	Al-Faw Ancient Temple in Saudi Arabia	Bayan Ancient Tree In Bali: Kayu Putih Giant Tree	Angluar treehouse
Amphibious House	Altar Ninho	Beach House	Architect's Simple Brick House
An Orchard Retreat	Analog House	Birch Pine and Oak	Art Villa Coco
An Orchard Retreat Garden Shed	Anchor Church	Bjellandsbu	Aura House
Ancient City of Pompeii	Äng	Boat Rooms	B8 House
Anthenea	Ant House	Boathouse	Baobab Pub
Arctic Bath	Antro della Sibilla	Bolder Star Lodges	Barrell Sauna
Arctic Henge	Arboleda	Bolton Residence	Be-Triton
Arkup	Arcosanti	Bowen Mountain Residence	Beach Hampton
Atomi Country Bus	Ark Hotel	Bridger Canyon Guest House	Beach Huts
Autobus Park No.7 in Kyiv	Auerworld Palace	Broken House	Bell Pavilion
Bath House	Australian Bunkers	Buck's Coppice	Bigwin Island Bunkie
Bathhouse	Bamboo Hostels	Cabanas No Rio Huts	Biré Bitori
Bathing Machine	Beijing Kindergarten	Cabin 4:12	Boluklu Upland Project
Baubotanik Arbor Kitchen	Bio-plastic micro-home	Cabin at Norderhov	Bridge Studio
Beckham Creek Cave Lodge	Blackberry Wood Treehouse	Cabin GJ-9	Bruit d'O Cabin
Bet Guvrin-Maresha	Blob vB3	Cabin in the Lyngen Alps	Bunkhouse
Beyond the Time	Bobo Dioulasso Grand Mosque	Cabin on the Flathead Lake	Cabane O 'Charmes
Big Branzino	Bosco Verticale	Cabin Vardehaugen	CAEaCLAVELES Residence+Hotel
Big Idaho Potato Hotel	Burj al Babas Villas	Cabin Y	Calvados Tree House
BikBus	C1C0BC	Calivigny Island	Camp Adventure Tower
Bike Sauna	Cabin's Roof Doubles	Cape Kidnappers	Cape Hatteras Lighthouse
Black Cabin	Camaya Bali Butterfly	Cappadocian Hot Air Baloon Experience	Casa Covida
Blaj Cultural Palace	Cantalloc Aqueducts	Casa Branca	Casa Delta
Bodie Ghost town	Canton House Project	Casa Brutale	Casa Mirador
Bud Clark Commons	Carbon Positive House	Casa en el Bosque	Casa Moderna
Bunker Pavilion	Casa Aguacates	Casa Eterea	Casa Pask
Bunker V37	Casa Agüé	Casa Todos Los Santos	Casapueblo
Cabana Raft	Casa Battlo	Clavo Lain Renovation	Chalet Hindié
Cabin ANNA	Casa do Penedo	Clear Lake Cottage	Choquequilla Inca Huaca
Cabin Moss	Casa Katana	Cleare Lake It House	Cliff Concept Boutique Hotel
Cabin on The Border	Casa Lasso	Corsican Deer Observatories	Colorado Outward Bound Micro Cabins
Capel Manor House Guest Pavilion	Casa Lefevre	Cradle Mountain Visitor Centre	Concept: Oceanix City
Capsule hotel	Casa Sperimentale	D House	Coron Palawan Twin Lagoon
Casa Barthel Treehouse	Casanus Hotel	D'Entrecasteaux House	Crown Station
Casa Caldera	Castelgrandes Entrance	Dalarna House	Crystal Lake Pavilion
Casa Meztitla	Caterpillar	Dani Ridge House	Cultural Center in Rural China

01 Experience and activity-oriented destinations	02 Aesthetic Quality of the built environment as the main attractor	03 Nature and Landscape as the main attractor	04 Integrated Approach (no individual attractor takes a definite lead)
Casa N	Celera 500L	Dar Azawad Dune Camp	Desert Milk Adobe
Casa Sabugo	Center of the World	Diane Middlebrook Studios	Dome home
Cau Dat Tea Museum	Centro Direzionale Metro Station	Diogene	Draper Home
Ccasa Hostel	Chaohu Natural and Cultural Centre	Dominican Treehouse Village	Dusun Bambu
Chapel of the Holy Cross	Chichen Itza	Drijf in Lelystad	Earthlab House
Charcoal Workers Huts	Chichu art museum	Drop Eco-hotel	Eastern and Western Bathing Resort
Chernobyl	Churchyard Offices	Dubai Frame	Encuentro Guadalupe
Chinese Junk Ship in The Canopy	Chuzhi House	Efjord Cabin	ErlebNest
Chinese Stone Quarries in Zhejiang Province	Circle of Forest and People	Emigration Canyon Residence	Estancia Cerro Guido
Colomo Filling Station	Circular Gathering Kiosck	Estate Bungalow	Fallingwater
Concrete Outbuilding Sauna	Clay 3D Printed House	Exod's Monolith	Flake House
Consonno Ghost Town	Cloudy House	Extension vB4	Float Cabins on Powell Lake
Convento Di Santa Maria Di Costantinopoli	Cob house	Eyrie Cabins	Floating Sauna OGLE
Darwin cabin	Communal Cabins by The Bay	Fabriken Furillen Hotel	Folly
DeepView 24	Concrete Tent	Fahouse	Futuro House
Denizen Sauna	Container Guesthouse	False Bay Writers Cabin	German Tree House
Desert Sage	Cordouan Lighthouse	Federal house	Golden Eagle
DIY Backyard Tent	Crane 29	Filly Island	Goms Bridge
DIY Cordwood Masonry Sauna	Crystal Cathedral	Fish Creek Guest House	Göreme National Park
DIY Playhouse	Curvy Eco-House for Shakira	Flathead Lake	Gothenburg Public Sauna
Docks - Cite de la Mode et du Design	Dan Price's Underground Home	Fogo Island Inn	Grotto Sauna
Dômes Charlevoix	Dargavs	Forest Glamp	Hapuku Tree houses
Dovecote Studio	Depot Boijmans Van Beuningen	Forest House I	High Sea Tree House
Dragonfly	Dinosaur House	Foster Loop cabin	Hotel San Cristobal
Earth House	Disaster Prevention and Community Facility	Four-cornered Villa	House in the Desert
Earthship	Dragspel House	Franke Mirzian Bunkhouse	Hub of Huts
East 17th Street Residences	Dysis Church	Freiform	Hustadvika Tools
Eco-PERCH	Dzome	G House	Ice Cube Refuge
Ecolodge	Ecocapsule	Garoza House	Ilulissat Icefjord Centre
El Cosmico	Edgeland House	Go Home Bay	Island House
El Rey Court	Eel's Nest	Het Bosch	Jacob Witzling Cabins
Exbury Egg Shelter	El Nido de Quetzalcóatl	Hoi Ha Visitor Center	Jagdal Elementary school
Fàng Sōng	Elektrenai Funfair	Hood River Retreat	JN House
Floating Cinema	Elephanta Caves	Hoshinoya Fuji	Kaluga Floating Sauna
Floating Eco House	Elevated Family Home	Hotel Bellevue Des Alpes	Kellogg Joshua Tree House
Floating Experience in a Survival Suit	Ellora Caves	Hotel Budir	Khan-Yates Habitat
Floating Hotel	EML Lembit Submarine	House Arc	Korowai TreeHouses
Floating Island in Mordanga Lake	Erik Korshagen Summerhouse	House in Estremoz	Kugelschiff
Floating Ropes Station	FaBRICKate	House Inside a Rock	La Cabane de Valvert
Floating Village of Ganvie	Fabrika Tbilisi	Ice & Light Village	La cabane en l'Air
Fragile Shelter	Fairytale Castle	Iniö	La Gaviota
French Island Farmhouse	Family Treehouse	Jack's Camp	Lake House USA
G Train	Firefly Eco Lodge	Jalman Meadows Ger Camp	Land House
Gables House	Flat House	Josefvatnet Cabin	Leaprus 3912
Game Streetmekka Aalborg	Floating City	Jungle house	Library Delft University of Technology

01 Experience and activity-oriented destinations	02 Aesthetic Quality of the built environment as the main attractor	03 Nature and Landscape as the main attractor	04 Integrated Approach (no individual attractor takes a definite lead)
Gaz-63	Floating Design Center	Juvet Landscape Hotel	Mahali Mzuri
Glow Worm Tunnel	Floating Forest	K House	Manta Ray Tree House Village
Goodyear Blimp	Floating House	Kawakawa house	Marsha
Gordon Ozarks Cabin	Floating Houses IJburg	Kicking Horse Residence	Marsk Tower
Granja Experimental Alnardo	Floating Islands of Sky	La Extraviada	Methow Cabin
Graves Light	Floating Office Rotterdam	La Madriguera	Minesotta Cob House
Great Train Graveyard	Fort 137	Lake Cabin	Mirrored Toilet
H3T Sauna	Free Spirit Spheres	Lilelo Eco-Lodges	Moesgaard museum
Halley VI Research Station	Freedom Cove	Linear Cabin	Moni Timiou Monastery
Harbin Ice and Snow Festival	Gaia House	Long Studio	Monte House Portugal
Haus Tambaran	Galleria Henry	Lovatnet Lake	Mount Fanjing
Heartwood Sauna	Gammel Hellerup Gymnasium	Lundnas House	Nisarga Art Hub
Hedonistic Rooftop Terraces	Gardener's Home	Lyngen Lodge	Perspektivenweg
Helsinki Floating Sauna	Giant Serpent Washed Ashore	Maggie's Centre Lanarkshire	Phugtal Monastery
Hemp House	Giant Tree Sculptures & Pop-up Forest	Marble Arch Mound	Point Lookout
Hill House	Grand-Pic Chalet	Marfa Weehouse	Posada De Mike Rapu
HMS Vigilant Submarine	Great Mosque of Djenné	Marina Park Lemmer	Post Ranch Inn
Hobbit House	Green Box	Minimod Catacuba	Rainforest Tree House with Hot Springs
HomeBox	Green Line	Mirrored Cabins	Ranch Morongo
House in Extramadura	Green Magic Homes	Molly's Cabin	Rem Island
House in the Air	Gulliver	Monte House Mexico	Root Bench
House in the Andean Moorland	Haid Al Jazil Village	Monument Channel Cottage	Rural Library as a Cluster of Angular Blocks
House NA	Haringey Brick House	Moose Haven Cabin	Sami Rintala Floating Sauna
House on a Slope	Harudot Cafe in Thailand	Mountain Cabin	Sauna Huginn & Muginn
House With Balls	He Art Museum	Nebo House	Saunalautta
Houseboat on the Water in Liepaja	Heito 1909	Nido	Sawmill
Iceberg Living Station	Hemloft	Nisser Micro cabin	SeaPod, GreenPod and EcoPod
IceHotel	Hengshan Temple	Off-Grid Guest House	Slovenia’s Predjama Castle
Igloft	High Desert Retreat	Old MacMommy	Smart Lucia glass cabin
Igloo Satellite Cabin	Hobbiton Houses	Ötzi Peak 3251m	Solar House
Iglu Hut	Holiday House in Sarzeau	Outlandia Fieldstation	Soneva Kiri Treepod
Iloft Floating Cabin	Home For Life	Palayan Rice Terraces	Space of Mind
Invisible House	Hotel Castello di Reschio	Pantelis Marathi	Spogulnamiņš
Jedong Ranch	Hotel Natura	Paradinha 11 Cabins in the Woods	Styria Forest Tree House
Jikka	House and the River	Passage House	Sunset Cabin
Jingdezhen Imperial Kiln Museum	House Attack	Pazust Latgalē	Suspended House
Kakslauttanen Arctic Resort	House Extension	Pension Briol	Tao Zhu Yin Yuan
Khiankhai Home & Studio	House H	Polygon Studio	Tepelenë Concrete Visitor Centre Pavilions
Loft Cube	House Husaro	Portable Cabin	The 7th Room
Long Island Sound House	House in Gávea	Rast	The Bands
Longen-Schloeder Winery	House in Muko	Ratua Private Island	The Baron's House
Lucky Ranch Igloo	House in The Landscape	Reeds Bay	The Bunker
LZ 129 Hindenburg	House of Music	Refugio en La Paisanita	The Cabin
Maggie’s Leeds Centre	House on Limeklin Line	Remote House	The Cloudscape of Haikou
Makoko Floating School	House Over The Rocks	River Belle Glamping	The Dormouse Nest
Marie's Dacha Treehouse	House Pibo	River Structures	The House
Mars Ice House	House Under The Hill	Roth House	The Hut in Purple Beach

01 Experience and activity-oriented destinations	02 Aesthetic Quality of the built environment as the main attractor	03 Nature and Landscape as the main attractor	04 Integrated Approach (no individual attractor takes a definite lead)
Maunsell army sea forts	House V	Saffire Freycinet	The Lookout on the Lake
Meito Arts Association Office	House Zilvar	Salt Spring Island Cabin	The Manta Resort
Micro Mobile Home	Houses Hanging on Cliff	Scotasay House	The Maple Tree Chalet
Mistral Submarine	Hüga	Seascape Retreat	The Nests Cabins
Modern Hunter's Hideout	Hutong Bubble 218	Seaside Single House	The Rabbit Hut
Moose Road Residence	Hy-fi	Shearer's Quarters	The Rig
Mortuary Chapel for the Soriano Manzanet Family	Hypercubus	SkinOver Reed - Thatched Alpine Hut	The Small Green Oak Tree House
Mudhif Houses	Icelandic Turf Houses	Sky House	The Snake Lodge
Mumokuteki Concept Bookstore	Illegal Mountain Villa	Sky Treetop Restaurant	The Squirrel Hut
Musical Tree House	IO Cabin	SkyHut	The Suspended Kingdom
Nature Gallery	Ithaca Guest House	Small but Fine Cabin	The Traveling Lighthouse
Neverwas Haul	Japanese House	Sneeoosh Cabin	The Treehouse
Noorderparkbad	Jason Fann nests	Songtsam Lodges	Torre di Moravola
Norwegian Ski Museum	Jeju Ball Villa	Southern Hihglands House	Tract F
Off-Grid Retreat	Junoot Eco Resort	Squish Studio	Treebones Yurts
One Man Sauna	Kabaw	Stokke Forest Stair	Treehouse Djuren
One Tree Four Seasons IV	Kakko House	Taieri Mouth House	Treehouse Solling
One Tree Four Seasons Season II	Kamp C 3D printed house	Teitipac Cabin	Treetophouse
ORB Autonomous Electric Hydrofoil Boat	Katpatuka Spa Thermal Hotel	The Arctic Hideaway	Tribe Structure
Outside House	Khoo Teck Puat Hospital	The Backcountry Hut	Trilateral Wadden Sea World Heritage Partnership Center
Padaste Manor	Kids Pod	The Red Sea Project	Underhill Valley Earth House
Papes Cabin	Kisawa Sanctuary	The Scarlet Hotel	Upper-Cloister Buddhist Temple
Pedayak Electric	Kolmanskop Ghost Town	The White House	Varden
Peldmaja Riverside Cottages	Kowloon Walled City	Three Container House	Veetee Saunas
Pentita Winery	Krzywy Domek - The Crooked House	Timber Sauna	Villa Encuentro
Permaculture Farm Tree House	Kudhva	Tower Studio	Villa Mandra
Permanent Camping	Kusugibashi Bridge	Trabocco	VIPP Shelter
Pi Home	L-shaped MIM	Tree-Hut	Visitor Centre
Pine Tree Container Nursery	La Collina	Tungestølen Tourist Cabin	WA Sauna
Planets Tokyo	La Loica and La Tagua	Twin Sisters House	Wae Rebo Village
Plenalto House	Labri House	Tye River Cabin	Walk the Line
Pompeii Snack Bar	Lake House Switzerland	Ultima Thule Lodge	Window House
Premaydena House	Lantern Theater	View Hill House	Wine Cave
Pripyat Ghost Town	Las Pozas	Villa Kettukallio	Woode Treehouse C
Proteus	Le Palais Bulles	Villa Wallin	Wotruba Church
Pusaran Ocean Deck	Little Park New York	Villa Ypsilon	Zenbo Seinei
Pyramiden	Living Tree Bridges	Vivood hotel	Zopherus
Rabot Cabin	M Woods Entrance Revitalization	Werfkeet	
Recreation Base "Mežezers"	Maggie's Southampton	Window House	
Redhill Barn	Magic Mushroom house	Wolwedans	
Refuge in Pine Forest	Maison Barache	Woodland Cabin	
Regional House Edeghem	Maison Bernard	Woodland House	
Republic of Rose Island	Maritime Youth House	Writers' cottage 2	
Repurposed Window Bedroom	Mars X House	Yamanashi Glamping	
Rock Reach	Mask of Sorrow	Ziedlejas Welness Resort	
Ruby	Mesa Verde Cliff Palace	Zigzag Cabin	

01 Experience and activity-oriented destinations	02 Aesthetic Quality of the built environment as the main attractor	03 Nature and Landscape as the main attractor	04 Integrated Approach (no individual attractor takes a definite lead)
S Prefab Sauna Cabin	Messner Mountain Museum Corones		
Sabus	Meymand-A		
Science Hills Komatsu	Million Donkey Hotel		
Selgas Cano office	Mira Villa		
Semipalatinsk Test Site - The Polygon	Mirage House		
Sepulveda Guesthouse	Mirror Cube		
Sextantio Albergo Diffuso	Mleiha Archaeological Centre		
Shed Sauna	Mobious House		
Shoal Tent	Modern Fairytale Holiday Home		
Siberia Floating Sauna	Mont Saint Michel		
Sky Cruise	Morerava Cottages		
Sky Lagoon	Moses Bridge		
Sledge Project	Mount Saint Michael Path		
Small House in an Olive Grove	Mountain & Cloud Cabins		
SMNG-A Guest house	Mushroom Sausage Structure		
Sneci Houseboat	N.N. Residence		
Snowball Hut	Naha Harbor Diner		
Snowlandia	Nature and Culture Park Courtyard		
Social Network Factory	Nautilus House		
Soviet Bunker in Līgatne	Nayara Tented Camp		
Space Perspective	Ngôi Nhà Quái Dị - Crazy House		
SpaceX Dragon V2	Nine Concrete Blocks		
Spitbank Fort	Niop Hacienda		
Squirrels' Residence	Nonagriam Twins		
Star Wars Sets in Tunisia	Norfolk		
Starbucks with Tatami Flooring	North East Bamboo Pavilion		
Storyteller Overland	Not A Hotel Ishigaki		
Streetmekka Viborg	Not a Hotel Masu		
Summit Station	Not a Hotel Rusutsu		
Sunshine Canyon House	Oasis House		
Supreme Airstream Travel Trailer	Off-Grid Inn - Unit 2		
Svalbard Global Seed Vault	Offgrid Earthship		
Swallowtail Studios Tree House	Old Dongola Church		
Tea House - BAM-BOO courtyard	One Central park		
Terrace House	One With the Birds		
The Bird`s Nest	ÖÖD Prefabricated House		
The Blue Cone	Organic House - Casa Organica		
The Capri Lounge	Palais Ideal		
The Cheetah Lodge	Park Güell		
The Children Summer Tree House	Parkpalette		
The Cloud Tea Room	Passive House		
The D.O.G. House	Patrick Doughtery houses		
The Dock Building	Pergola in Luotuowan village		
The Eden Project	Peu Brut		
The Floating Houses of Titicaca	Pig Farm		

01 Experience and activity-oriented destinations	02 Aesthetic Quality of the built environment as the main attractor	03 Nature and Landscape as the main attractor	04 Integrated Approach (no individual attractor takes a definite lead)
The Georgia O`Keeffe Home and Studio	Pino Caravan Pi2010		
The Gibbon Experience Treehouse	Planar House		
The Giraffe Feeder	Platanen-kubus		
The Great Swallow	Plitvice Holiday Resort		
The Hotspot Sauna	Plús Hús		
The Inn at Cuckolds Lighthouse	Portsea House		
The Low Line	Poseidon's Horse		
The Massage Tree House	Presence in Hormuz 02		
The Muraka Residence	Private Jet Villa		
The Nook	Prolonged Moments Pavilion		
The Panda Pavilions Zoo	Rakotzbrücke - Devil's Bridge		
The Restaurant Tree Terrace	Red House		
The Stone Fort of Grianán of Aileach	Residence J&C		
The Tree House And The Labyrinth	Rethink Earth Architecture		
The Tree Library	Retro Camping Bus		
The Tribu Hut	Ricardo Bofill Taller de Arquitectura Headquarters		
The Twig Hut	Robert Bruno’s Steel House		
The UFO	Rock House 3		
The Volga Cabin	Rock-cut Tombs in Myra		
Tiny Holiday Home	Roof House		
Toguna	Salmon Eye		
Traditional Tuareg Tent	San Carlino Church		
Trassenheide Upside Down House	Sankoré Madrasah		
Tree House Refuge	Semiramis		
Tropical Shed	Sencu Sils		
Tukul House	Shell House		
Underground Library	Shell Mycelium Installation		
Urban Farm at Pasona Group Offices	Shelter Bygg		
Viewpoint Shelter	Shipping Container House		
Villa Vals	Shoe House		
Virogna Train Houses	Shopare		
VSS Unity	Shui Cultural Center		
W-Sub3 Tourist Submarine	Simbiosi		
Waldbrand Installation	Sino-french Science Park Church		
Warak Kayu Microlibrary	Sky Yards Hotel		
Waru Waru Agricultral terraces	Slope House		
Water Bed	Social Pavilion		
Watershed	Sol Duc Cabin		
World's Narrowest House	Solar Egg		
XBO Mobile Unit	Soneva Kiri Sleepover Pod		
Yeezy Units	Song Art Museum		
Your Daylight Destination	Sorocaba House		
Zollverein Coal Mine Industrial Complex, Germany	Stingray House		
	Stone Pyramid		
	Storkhouse		
	Summer Cave House		
	Summer House		

01 Experience and activity-oriented destinations	02 Aesthetic Quality of the built environment as the main attractor	03 Nature and Landscape as the main attractor	04 Integrated Approach (no individual attractor takes a definite lead)
	Sustainable Cabin		
	Symbiotic Architecture		
	Tagurpidi Maja		
	Taipei Nest House		
	Tall Chimneys Guesthouse		
	Tau-nuss Tree House		
	Telescopic Treehouse		
	The Chamber Church		
	The Circular Garden installation		
	The Couch		
	The Courtyard House		
	The Crown Floating Village		
	The Cube Houses		
	The Future of Living		
	The Glamping Wagon		
	The Golden Jubilee Agriculture Museum		
	The Growing Pavillion		
	The House Inside a Hill		
	The House on The Cliff		
	The Nordic House		
	The Pierre		
	The Soul Box		
	The Sprite Cabin		
	The Temple of the Moon		
	The Treetop Walk Saarschleife		
	The Woodsman's Treehouse		
	Tianducheng		
	Timber Bridge in Gulou Waterfront		
	Tom Lee Park in Memphis		
	Tower House		
	Trakt Forest Hotel		
	Tree House on Hood canal		
	Tree Huts in Paris - La Chene Fou		
	Tree Snake Houses		
	Treehouse @ The Wood		
	Treehouse POD concept		
	Treehouse Resnice - Mrežnica		
	Treehouse Saba		
	Treetop Walk Bachledka		
	Treetop Walk Bavarian Forest		
	Treetop Walk Black Forest		
	Treetop Walk Krkonoše		
	Treetop Walk Pohorje		
	Treetop Walk Rügen		
	Treetop Walk Salzkammergut		
	Treetop Walk Usedom		
	Truck House		
	Trunk House		
	Tubohotel		
	Tunnel-like Vaults		
	Twisted Brick Shell Concept Library		
	Two Beams House		

01 Experience and activity-oriented destinations	02 Aesthetic Quality of the built environment as the main attractor	03 Nature and Landscape as the main attractor	04 Integrated Approach (no individual attractor takes a definite lead)
	Tzintzuntzan		
	Uchisar Castle		
	Under		
	Undergrond House		
	Underground Dome House		
	University Building Palm Facade		
	Urban Cairn		
	Urban Farming Office		
	Ursa Cabin		
	Vacation Home Easter Island		
	Ventana House		
	Venturo House		
	Verdant City Home		
	Villa G01		
	Villa Kanausen		
	Villa Ronconci		
	Villa Troglodyte		
	Villa Vingt		
	Village of Monsanto		
	Vlooyberg Tower		
	Walhalla		
	Wasatch House		
	Water Villa		
	Watervilla Weesperzijde		
	Westonbirt Community Shelter		
	Wintergreen cabin		
	Wittenoom		
	Woodland Writer's Retreat		
	World’s Largest Bird Sculpture Jatayu		
	Wuyuanwan Subway Station		
	Yabuli Entrepreneurs' Congress Center		
	Yakhchal		
	Yellow Ferry		
	Yellow Submarine		
	Yuntai Ice Chrysanthemum Display Shelves		
	Zaishui Art Museum		
	Zebun Nessa Mosque		

Table 4 List of nature tourism destinations.